Annexure: 1

Template of NIB for Publication in News Paper

JAIPUR DEVELOPMENT AUTHORITY

Room No. 234, Main Building Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 e.mail : xxxxxxxx@jaipurjda.org

Dispatch Number Dated:02-07-2015

NOTICE INVITING BID

NIB No. : 08/2015-16

Online Bids are invited up-to 03.08.2015 at 06:00 PM for Consultancy for identification of land, demarcation, planning etc. of land for 160 feet & above Sector Roads. Details may be seen in the Bidding Document at our office or the website of State Public Procurement Portal website www.sppp.rajasthan.gov.in,www.eproc.rajasthan.gov.inand www.jaipurjda.org.

To participate in the bid, bidder has to be:

1. Registered on JDA website www.jaipurjda.org
   For participating in the Bid, the Bidder has to apply for the Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only.
2. Registered on e-Procurement Portal of Government of Rajasthan www.eproc.rajasthan.gov.in for online e-Bid submission.

Executive Engineer-SR
JDA, Jaipur

Annexure: 2

Template of Detail NIB for uploading on SPP Portal, e-Procurement, JDA Protal& as part of NIB Document

JAIPUR DEVELOPMENT AUTHORITY

Room No. 307, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 e.mail : eesr.jda@gmail.com

Dispatch Number-08 Dated:02-07-2015

NOTICE INVITING BID

NIB No. : 08

Name & Address of the Procuring Entity	➢ E.E. (SR), Jaipur Development Authority ➢ Room No. 307, CCC Building, III Floor, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 (Rajasthan) ➢ Email: e.mail : eesr.jda@gmail.com
Subject Matter of Procurement	➢ Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads.
Bid Procedure	Two Bid (eg. Single-stage Two part (envelope) open competitive) eBid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	➢ Least Cost Based Selection (LCBS)-L1
Websites for downloading Bidding Document, Corrigendum's, Addendums, etc.	➢ Websites: www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in , www.jaipurjda.org
Website for online Bid application and payment *	➢ Website: www.jaipurjda.org ➢ For participating in the Bid, the Bidder has to apply for this Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only. ○ Bidding document fee: Rs. 500.00 Rupees (Five Hundred only) ○ RISL Processing Fee: Rs. 1000 (Rupees One Thousand only) ○ Requisite Bid Security Deposit
Estimated Procurement Cost	➢ INR 75,00,000 (Rupees Seventy five Lakh only)
Bid Security Deposit	➢ Amount (INR) : 2% (1,50,000.00) of Estimated Procurement Cost, 0.5% (Rs.37500.00) of S.S.I. of Rajasthan, 0.5% (Rs. 37500.00) for Bidder registered as contractor in JDA, 1% (Rs. 7500.00) for Sick Industries, other than S.S.I., whose cases are pending with Board of Industrial & Financial Reconstruction
Pre-Bid	➢ 20.07.2015 at 16.00 PM ➢ Place : Manthan Hall II Floor, Main block JDA, JLN Marg, Jaipur-302014 (Rajasthan) ➢ Last date of submitting clarifications requests by the bidder 20.07.2015 by 06:00 PM addressed to the procurement entity at Room No. 307, Ram Kishore Vyas Bhavan, Indira Circle, Jawahar Lal Nehru Marg, Jaipur – 302 004 (Rajasthan). ➢ Response to clarifications by procuring entity : 21.07.2015 up to 3.00 PM
Start/ End Date for Bid Applying, Online Payment and Bid Submission	➢ Start Date: 13.07.2015 at 9:30 AM onwards ➢ End Date: 03.08.2015 at 06:00 PM
****Date/ Time/ Place of Technical Bid Opening**	➢ 07.08.2015 at 1:00 PM ➢ Room No. 309 Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 (Rajasthan)
Date/ Time/ Place of Financial Bid Opening	➢ Will be intimated later to the Technically qualified bidders
Bid Validity	➢ 120 days from the bid submission deadline

* The amount is to be deposited online by bidder. In case the amount exceeds the online payment limit the payment may be made through RTGS/NEFT in ICICI BANK LTD Bank Account Number 675401700586 IFSC Code ICIC0006754. After successful payment, update the UTR/Instrument number on JDA Tender portal against the tender you want to participate. The amount deposited will be confirmed by JDA and will be updated online.

** There should be a gap of 3 working days **BETWEEN** End Date for Bid Applying, Online Payment & Bid Submission **AND** Bid opening date.

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR

BID DOCUMENT

FOR THE WORK OF

Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads, JDA Region, Jaipur 2015

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR

BID NO: JDA/EE/Sector Roads/2015-16/D- Dated:

Bid Document for "Preparing Land Details and Demarcation for Sector Roads & Commercial Strips in JDA Region, Jaipur".

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SCHEDULE- I

CHECK LIST OF SUBMISSIONS

Bidders are required to upload on e-portal the following information:

S.No.	Particulars	Enclosed Y/N	Page No.	Remarks
1	Name and address of the bidder			
2	Telephone Number			
3	Email address			
4	Type of Firm (Individual/Partnership/Private Ltd.)			
5	i. Copy of registration of firm			
	ii. Copy of Service Tax Registration Certificate as applicable.			
6	Note on the general works done by the firm during last three years			
7	Specific Experience Details i. Copy of Work Order			
	ii. Copy of Satisfactory Completion Certificate			
	iii. A detailed Note on the type of work done as mentioned in this bid document			
8	Signed copy of the Bid Document Schedules			
9	Price schedule			
10	Other information (specify)			

SCHEDULE- II

JAIPUR DEVELOPMENT AUTHORITY
Indira Circle, J.L.N. Marg, Jaipur-302004

No: JDA/EE/Sector Roads/2015-16/D-Date:

NOTICE FOR INVITATION OF BID

NIB NO.08/ EE-SECTOR ROADS/2015-16

1. Jaipur Development Authority (JDA) invites bids from experienced & eligible bidders in Two-Bid System for "**Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads.**" as per Terms of Reference. The details may be seen on the following websites: **www.jaipurjda.org**, **www.sppp.rajasthan.gov.in**, **https://eproc.rajasthan.gov.in/**

2. **GENERAL DETAIL OF WORKS:**

A.	NIB No.	NIB NO. 08/EE/ Sector Roads/2015-16
	Name of Work	**"Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads".**
B.	Work Description	Preparation of Land Details covers the following: JDA has planned to prepare the ownership details of the land falling within the sector roads and commercial strips under JDA jurisdiction. Detailed schedules for acquisition/ notification of required land and properties and their demarcation on ground in consultation with the JDA authorities. Land Acquisition/notification Plan should include Kilometer-wise Land Details Plan (LDP) and schedule of ownership thereof and Costs of structures as per JDA Rules. Details of properties, such as buildings and structures falling within the right-of-way and on commercial strips and costs of compensation based on JDA rules. Land Details Reports should be prepared in consultation with affected persons based on latest land records available on "**Apna khata.com**". Main objective of the work is to prepare land details falling in ROW and commercial strips by opting steps detailed in Terms of Reference (TOR).

C.	Approximate Cost of the Work	Rs. 75.00 Lacks
D.	Completion Period	**6 Months** from date of work order.

3. **ELIGIBILITY CRITERIA :**
   a) The firm shall have at least 3 year experience in core consultancy assignments for planning/ road/infrastructure sectors. In Govt. Sector copy of experience certificate should be submitted.
   b) Firm shall have experience in GIS application based assignments related to in Govt. sector planning/infrastructure development works; at least two works amounting Rs. 45.00Lacs or above, have been completed satisfactorily. Copy of completion certificate duly attested shall be required. This certificate should be issued by not less than Executive Engineer.
   c) The Firm should submit an affidavit that the firm has never been blacklisted by any central/state/any other government agency and that the firm has not left any work incomplete during the last three years in the Annexure IV given in the Bid Documents.
   d) Turnover of the firm in any one financial year of last three years shall not be less than Rs 45.00 lacs
4. Bid Security @ 2% Rs. 1,50,000.00 (For A & AA class contractor registered in other department) and @ ½% Rs. 37,500.00 (For Contractor registered in JDA) through online payment after registering with JDA on www.jaipurjda.org/e-services/e-tender portal as per Annexure-1,2,3 & 4
5. The bidders are required to submit Bid Security, Cost of Bid documents, Bid processing feesthrough online payment after registering with JDA on www.jaipurjda.org/e-services/e-tender portal as per Annexure-1,2,3 & 4.In the absence of such fee the bid of respective bidder will be considered as non-responsive and shall be rejected.
6. All the provisions of **THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013** will be applicable. If there is any contradictions in existing special conditions and provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013, provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013 shall be applicable.
7. First of all the envelope of requisite fee, bid security, registration, etc. will be opened on E-Tendering system and only after checking its correctness the envelope of Eligibility Criteria and then Financial Bid document will be opened. Bidders may note that if such things are not found in order then considering the bid non responsive it will not be opened and rejected.
8. Bids are valid for 120 days from the date of receipt of bid.
9. Bids must be submitted under E-Tendering system only, on or before the due date and time, which will be opened on the date and time indicated as above in the presence of bidders who wish to attend.
10. Right to reject any or all bids without assigning any reason at any stage is reserved with the Jaipur Development Authority.
11. **No JV shall be permitted to participate in the bid.**

12. Competitive Bidding will be conducted for selection of the bidder on basis of quality of their experience and cost.

13. No conditional bids shall be accepted and can be rejected summarily.

14. Full details as required to be submitted as per the document, failing which the bid can be summarily rejected. No additional document shall be accepted after submission of bid.

15. The complete bid documents can be seen and downloaded from:

- JDA's web site **https://jaipurjda.org** or
- Rajasthan State Public Procurement Portal **https://sppp.rajasthan.gov.in/,** or
- E- Procurement Portal **https://eproc.rajasthan.gov.in/**

16. **IMPORTANT DATES:**

S. N.	Events	Date & Time	Location
a.	Date of issue of Bid document	13-07-2015 (9.30 AM) to 03-08-2015 (6 PM)	E-Procurement Portal **https://eproc.rajasthan.gov.in/.**
b.	Pre-bid Meeting	20-07-2015 at 16:00 Hrs	In the Chairmanship of Addl. Chief Engineer-II at Manthan Hall, IInd Floor, Main Block, Jaipur Development Authority, JLN Marg, Jaipur-302004
c.	Last date & time for submission of Bid document	03-08-2015 Up to 6.00 PM	E-Procurement Portal **https://eproc.rajasthan.gov.in/.**
d.	Date of opening of technical bid	07-08-2015 at 1.00 PM	Room No. 309,Third Floor, CCC Block, Jaipur Development Authority, JLN Marg, Jaipur-302004

Note: In case there is a holiday on the day of opening of bid, the activities assigned on that date shall be carried out on the next working day. Date & Time of opening of financial bids shall be intimated later.

17. **GENERAL NOTES:**

a) Work shall be done on Arc Info/GIS/QGIS/ESRI software as per the requirement of JDA. Required database/attributes have to be created as per the requirement of JDA by the consultant.

b) Consultant has to arrange at least one terminal (computer) in JDA office till work is completed.

c) No extra payment shall be made for verification or checking work.

d) Complete work shall be uploaded on server by the consultant as per JDA requirement.

e) L1 will be awarded minimum 30% work. Remaining work can be subdivided among participant bidders at the approved rate, in order of higher to lower QCBS score, as per the requirement.

f) A pre-bid meeting in the **Chairmanship of Addl. Chief Engineer-II will be held on 20.07.2015 at 16:00 PM** in the **MANTHAN HALL**, IInd floor, Main Building, JDA, Jaipur 302004 to clarify the issue and to answer queries on any matter related to bid document. All Bidders are encouraged to participate in this meeting and Bid document is studied thoroughly before this meeting.

g) For any other information, the contact person shall be:

i Mr. Arvind Arya, Additional Chief Engineer, JDA, Jaipur,
Mobile No: 7742222100.

ii Mr. P.K.Jain, Executive Engineer-Sector Roads, JDA, Jaipur ,
Mobile No: 9928026983.

Executive Engineer (Sector Roads)
Jaipur Development Authority, Jaipur

SCHEDULE – III

INSTRUCTIONS TO BIDDERS (ITB)

1. INTRODUCTION

1.1. The consultants are invited to submit a Technical Proposal and a Financial Proposal, as specified in the Data Sheet (the Proposal) for consulting services required for the Assignment named in the Data Sheet. The Proposal will be the basis for contract negotiations and ultimately for a signed contract with the selected Consultant.

1.2 The Consultants must familiarize themselves with local conditions and take them into account in preparing their Proposals. To obtain first-hand information on the Assignment and on the local conditions, consultants are encouraged to pay a visit to the office of the Executive Engineer (Sector Roads) JDA before submitting a Proposal.

1.3 The Client will provide the inputs specified in the Data Sheet and make available the relevant data available.

1.4 Please note that the Client is not bound to accept any of the Proposals submitted without assigning any reason.

1.5 Jaipur Development Authority (JDA) expects consultants to provide professional, objective, and impartial advice and at all times hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflicts with other assignments or their own corporate interests. Consultants shall not be hired for any assignment that would be in conflict with their prior or current obligations to other clients, or that may place them in a position of not being able to carry out the assignment in the best interest of the Client.

1.5.1 Without limitation on the generality of this rule, consultants shall not be hired under the circumstances set forth below:

(a) A firm which has been engaged by the Client to provide goods or works for a project, and any of their affiliates, shall be disqualified from providing consulting services for the same project. Conversely, firms hired to provide consulting services for the preparation or implementation of a project, and any of their affiliates, shall be disqualified from subsequently providing goods or works or services related to the initial assignment (other than a continuation of the firm's earlier consulting services) for the same project.

(b) Consultants or any of their affiliates shall not be hired for any assignment which, by its nature, may be in conflict with another assignment of the consultants.

1.6 It is JDA's policy to require that consultants observe the highest standard of ethics

during the execution of contracts. In pursuance of this policy, the JDA:

(a) Defines, for the purposes of this provision, the terms set forth below as follows:

(i) "Corrupt Practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution; and

(ii) "Fraudulent Practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of JDA, and includes collusive practices among consultants (prior to or after submission of proposals) designed to establish prices at artificial, non-competitive levels and to deprive JDA of the benefits of free and open competition.

(b) Will reject a proposal for award if it determines that the firm recommended for award has engaged in corrupt or fraudulent activities in competing for the contract in question;

(c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded JDA -financed contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a JDA-financed contract; and

(d) Will have the right to require that, JDA to inspect consultant's accounts and records relating to the performance of the contract and to have them audited by auditors appointed by JDA

1.7 Consultants shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by GOR/JDA in accordance with the above Sub Para 1.1.6 (D).

1.8 Consultants shall be aware of the provisions on fraud and corruption stated in the standard contract under the clauses indicated in the Data Sheet.

2. CLARIFICATION AND AMENDMENT OF RFP DOCUMENTS

2.1 Consultants may request a clarification of any item of the bid document up to the number of days indicated in the Data Sheet before the Proposal submission date. Any request for clarification must be sent in writing by paper mail, cable, telex, facsimile, or electronic mail to the Client's address indicated in the Data Sheet. The Client will respond by cable, telex, facsimile, or electronic mail to such requests and will send copies of the response (including an explanation of the query but without identifying the source of inquiry) to all the participating consultants who intend to submit proposals.

2.2 At any time before the submission of Proposals, the Client may, for any reason, whether at its own initiative or in response to a clarification requested by an invited firm, modify the bid documents by a suitable amendment. Any amendment shall be issued in writing through addenda. Addenda shall be sent by mail, cable, telex, facsimile, or electronic mail to all invited consultants and will be binding on them. The Client may at its discretion extend the deadline for the submission of Proposals.

3. PREPARATION OF PROPOSAL

3.1 Consultants are requested to submit a Proposal (Para 1.2) written in the language(s) specified in the Data Sheet.

Technical Proposal

3.2 In preparing the Technical Proposal, consultants are expected to examine the documents comprising this bid in detail. Material deficiencies in providing the information requested shall be resulted in rejection of a Proposal.

3.3 While preparing the Technical Proposal, consultants must give particular attention to the following:

(i) The proposal should be from a single entity. Joint Ventures are not envisaged.

(ii) The proposal shall be based on the number of key professional staff-months estimated by the firm.

(iii) It is desirable that the majority of the key professional staff proposed be permanent employees of the firm.

(iv) Proposed key professional staff must at a minimum have the experience indicated in the Data Sheet.

(v) Alternative key professional staff shall not be proposed, and only one curriculum vitae (CV) may be submitted for each position.

(vi) Reports to be issued by the consultants as part of this assignment must be in the language(s) specified in the Data Sheet. It is desirable that the firm's personnel have a working knowledge of the Client's official language.

3.4. The Technical Proposal should provide the following information using the attached Standard Forms:

i) A brief description of the consultant's organization and an outline of recent experience on assignments of a similar nature. For each assignment, the outline should indicate, inter alia, the profiles and names of the staff provided, duration of the assignment, contract amount, and firm's involvement.

(ii) Any comments or suggestions on the Terms of Reference and on the data, a list of services and facilities to be provided by the Client.

(iii) A description of the methodology and work plan for performing the assignment.

(iv) The list of the proposed staff team by specialty, the tasks that would be assigned to each staff team member, and their timing.

(v) CVs recently signed by the proposed key professional staff and the authorized representative submitting the proposal. Key information should include number of years working for the firm/entity, and degree of responsibility held in various assignments during the last three (03) years.

(vi) Estimates of the total staff effort (professional and support staff; staff time) to be provided to carry out the Assignment, supported by bar chart diagrams showing the time proposed for each key professional staff team member.

(vii) Any additional information requested in the Data Sheet.

3.5 The Technical Proposal shall not include any financial information.

Financial Proposal

3.6 In preparing the Financial Proposal, consultants are expected to take into account the requirements and conditions of the bid documents. The Financial Proposal should follow Standard Forms. It shall include all the costs associated with the assignment, including

(a) Remuneration for staff and

(b) Reimbursable such as subsistence (per diem, housing), transportation (national and local, for mobilization and demobilization), services and equipment (vehicles, office equipment, furniture, and supplies), office rent, insurance, printing of documents & surveys; and all the other major component of the assignment.

3.7 Consultants shall express the price of their services in Indian Rupees.

4. Procurement under RTPP Act 2012 and Rules 2013

- All the provisions of THE RAJASTHAN TRANPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013 will be applicable. If there is any contradiction in existing special conditions and provisions of THE RAJASTHAN TRANPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013 provisions of THE RAJASTHAN TRANPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013 shall be applicable
- All the bidders are required to comply with the A**nnexure A,B,C&D**, prescribed under RTPP Act 2012vide circular No 3 date 4 Feb, 2013, by the Dept of Finance (G&T) Govt. of Rajasthan.

5. FORMAT AND SIGNING OF BIDS

5.1 The Bidder shall prepare one copy of the documents comprising the Bid.

5.2 The copy of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to bind the Bidder to the Contract. All pages of the Bid where entries or amendment have been made shall be initialed by the person or persons signing the Bid.

5.3 The completed Bid shall be without alterations, inter-relations or erasures except those which accord with instructions given by the JDA, or as necessary to correct errors made by the Bidder, in which case such corrections shall require initials of the person or persons signing the Bid.

5.4 Only one Bid shall be submitted by each Bidder. No Bidder shall participate in the Bid of another for the same contract in any capacity whatsoever.

Bids shall be submitted on e-portal before prescribed date and time.

5.5 **a) Cost of Bid Document**

The bidder is required to pay a non-refundable documentation charge amounting to Rs. 500/- (Rupees Five Hundred Only) through online payment after registering with JDA on www.jaipurjda.org/e-services/e-tender portal at least in three days advance of tender sale date per Annexure-1,2,3 & 4.

b) Bid Processing Fee

The bidder is required to pay a non-refundable bid processing fee amounting to Rs. 1,000/- (Rupees one Thousand Only) through online payment after registering with JDA on www.jaipurjda.org/e-services/e-tender portal at least in three days advance of tender sale date per Annexure-1,2,3 & 4.

c) Bid Security

Each bidder must pay as Bid security Rs. 1,50,000.00 (Rs. One lac Fifty Thousand Only) through online payment after registering with JDA on www.jaipurjda.org/e-services/e-tender portal at least in two days advance of tender sale date. Deposition of bid security in any other form is not acceptable. In the case of successful bidder, the amount or bid security will be adjusted against Performance Security to @ 5% of consultancy value to be paid by the bidder after the awarded of work. The bid security of the un-successful bidder will be refunded on application by the bidder after approval of rate in favour of lowest successful bidder. Bid Security must be submitted with Bid Document Fee and Bid Processing Fee before opening of Technical Bid.

The bid Performance Securitized by the Bidder will not carry any interest and it will be dealt with as provided in the conditions stipulated in the tender.

5.6 The Bid Security shall be forfeited.

(a) If the Bidder withdraws the Bid during the validity period of Tender.

(b) If the bidder fails to sign the agreement for whatever the reason within the prescribed time limits.

(c) As per the provision of RTPPA-2012 section 11 and 44.

In consideration of the Executive Engineer / Superintending Engineer/Additional Chief engineer / Director Engineering-I /Commissioner, JDA of Tenders undertaking to investigate and to take into account each tender and in consideration of the work thereby involved, all Bid Securities deposited by the bidders will be forfeited to JDA in the event of such bidder either modifying or withdrawing his bid at his instance within the said validity period of four months.

Clause 2 : Compensation for delay

The time allowed for carrying out the work, as entered in the tender, shall be strictly observed by the Contractor and shall be reckoned from the 10th day after the date of written order to commence the work given to the Contractor. If the contractor does not commence the work within the period specified in the work order, he shall stand liable for the forfeiture of the amount of Earnest Money, and Performance Security. Besides, appropriate action may be taken by the Engineer-in-charge/ competent authority to debar him from taking part in future tenders for a specified period or black list him. The work shall, throughout the stipulated period of completion of the contract, be proceeded with all due diligence, time being essence of the contract, on the part of the Contractor. To ensure good progress during the execution of work, the contractor shall be bound to complete $1/8^{th}$ of the whole of the work before $1/4^{th}$ of the whole time allowed under the contact has elapsed $3/8^{th}$ of the work before 1/2 of such time has elapsed and $3/4^{th}$ of the work before 3/4 of such time has elapsed. If the contractor fails to achieve work progress in accordance with this time schedule in terms of cost in money, and the delay in execution of work is attributable to the contractor, he shall be liable to pay compensation to JDA at every time span as below :

A.	Time Span of full Stipulated period	1/4th (.... days)	1/2th (.... days)	3/4th (.... days)	Full (.... days)
B.	Work to be completed in terms of money	1/8th (Rs…..)	3/8th (Rs…..)	3/4 (Rs…..)	Full (Rs…..)
C.	Compensation payable by the contractor for delay attributable to the contractor at the stage	2.5% of Scheduled work remained unexecuted on the last day of (1/4) time span	5% of Scheduled work remained unexecuted on the last day of (1/2) time span	7.5% of Scheduled work remained unexecuted on the last day of (3/4) time span	10% of Scheduled work remained unexecuted on the last day of contracted full period

Note : In case delayed period over a particular span is split up and is jointly attributable to JDA and contractor, competent authority may reduce the compensation in proportion of delay attributable to JDA over entire delayed period without paying any escalation. Following illustration is given.

First time span is of 6 months, delay is of 30 days which is split over as under:

5 days [attributable to JDA] + 5 days [attributable to contractor] + 5 days [attributable to JDA] + 5 days [attributable to contractor] + 5 days [attributable to JDA] + 5 days [attributable to contractor]. Total delay is thus clubbed to 15 days [attributable to JDA] and 15 days [attributable to contractor]. The normal compensation of 30 days as per clause 2 of agreement is 2.5 which can be reduced as 2.5x 15/30=1.25 over 30 days without any escalation by competent authority.

The contractor, shall, further, be bound to carry out the work in accordance with the date and quantity entered in the progress statement attached to the tender.

In case the delay in execution of work is attributable to the contractor, the span wise compensation, as laid down in this clause shall be mandatory. However in case the slow progress in one time span is covered up within original stipulated period then the amount of such compensation levied earlier shall be refunded. The price escalation, if any, admissible under clause 45 of Conditions of Contract would be admissible only on such rates and cost of work, as would be admissible if work would have been carried out in a particular time span. The Engineer-in-charge shall review the progress achieved in every time span, and grant stage wise extension in case of slow progress with compensation, if the delay is attributable to contractor, otherwise, without compensation.

However, if for any special job, a time schedule has been submitted by the contractor before execution of the agreement, and it is entered in agreement as well as same has been accepted by the Engineer-in-charge, the contractor shall complete the work within the said time schedule. In the event of the contractor failing to comply with this condition, he shall be liable to pay compensation as prescribed in the foregoing paragraph of this clause provided

that the entire amount of compensation to be levied under the provision of this clause shall not exceed 10% of the value of the contract. While granting extension in time attributable to JDA reasons shall be recorded for each delay.

Clause 3 : Risk & Cost Clause

The Engineer-in-charge or the Competent Authority defined under rules may, without prejudice to his rights against the Contractor, in respect of any delay or inferior workmanship or otherwise, or to any claims for damages in respect of any breaches of contract and without prejudice to any rights or remedies under any of the provisions of this contract or otherwise, and whether the date for completion has or has not elapsed by notice in writing, absolutely determine the contract in any of the following cases.

(i) If Contractor having been given by the Engineer-in-charge, a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper or un-workmanlike manner, shall omit to comply with the requirements of such notice for a period of seven days, thereafter, or if the Contractor shall delay or suspend the execution of the work so that either in the judgment of the Engineer-in- charge (which shall be final and binding) he will be unable to secure completion of the work by due date for completion or if he has already failed to complete the work by that date.

(ii) If the Contractor being a company, shall pass a resolution or the Court shall make an order that the company shall be wound up or if a receiver or a manager, on behalf of a creditor, shall be appointed or if circumstances shall arise, which entitle the Court or Creditor to appoint a receiver or a manager or which entitle the Court to make a winding up order.

(iii) If the Contractor commits breach of any of terms and conditions of this contract.

(iv) If the Contractor commits any acts mentioned in Clause 19 of PWF&R.

When the Contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-charge on behalf of Jaipur Development Authority shall have powers.

(a) To determine or rescind the contact, as aforesaid (of which determination or rescission notice in writing to the Contractor under the hand of the Engineer-in-charge shall be conclusive evidence) upon such determination or rescission, the earnest money, full Performance Security of the contract shall be liable to be forfeited and shall be absolutely at the disposal of JDA.

(b) To employ labour paid by JDA and to supply materials to carry out the work or any part of the work, debiting the Contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer-in-charge shall be final and conclusive against the Contractor) and crediting him with the value of the work done in all respects in the same manner and at the same rates, as if it has been carried out by the Contractor under the terms of this contract. The certificate of the Executive Engineer, as to the value of the work done, shall only be taken after giving notice in writing to the contractor. Provided also, that if the expenses incurred by the JDA are less than amount payable to the Contactor at his agreement rates, the difference shall not be paid to the Contractor.

(c) After giving notice to the Contractor to measure up the work of the contractor and to take such part thereof as shall be unexecuted out of his hands and to give it to another contractor to complete, in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him [of the amount of which excess, the certificate in writing of the Engineer-in-charge shall be final and conclusive] shall be borne and paid by the original contractor and may be deducted from any money due to him by JDA under this contractor or any other account whatsoever, or from his Earnest Money, Performance Security, Enlistment Security or the proceeds or sales thereof, or a sufficient part thereof as the case may be. In the event of any one or more of the above courses being adopted by the Engineer-in charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of contract. And, in case action is taken under any of provisions aforesaid, the Contractor shall not be entitled to recover or be paid, any work thereof or actually performed under this contract unless and the Engineer-in-charge has certified, in writing, the performance of such work and the value payable in respect thereof, and he shall only be entitled to be paid the value so certified.

5.7 Qualification criteria:

Proposal of only those consulting firm which shall qualify in minimum eligibility criteria will be further scrutinized on QCBS as given under

S. No.	Description of Evaluation	Micro Marks	Maximum Marks
A	Establishment of firm (From date of Incorporation certificate)		10
i	More than 3 year	2	
ii	>3 yrs but <6 yrs	4	
iii	>6 yrs but <9 yrs	6	
iv	>9 yrs	10	
B	Experience of preparation of GIS application based infrastructure/Engineering development work.		25
I	For single work	15	

II	For each additional work	5	
C	Experience of preparation of scheme layout plan with khasra map (Cadastral Map) digitization (Vectorization) and superimposition on total station survey approved by the competent authority not below the rank of executive Engineer/Secretary/commissioner/ Executive officer (At least for 10 HA area/ 10 km road with preparation of KMZ file. One Work	5	10
	For Additional work	5	
D	Resources with firm		15
i	A. Original Arc- GIS software/ ESRI/Autodesk	6	
	B. 10 number computer, and one Plotter A0 size.	3	
	C. Auto-cad /equivalent license certificate, One DGPS (survey).	3	
	D. Total Station Machines minimum three.	3	
ii	One number post graduate Planner and one civil engineer having more than 10 year experience on.	5	10
iii	Two number revenue staff not below the rank of revenue inspector on company pay-role with TDS certificate if applicable or CA certificate	5	
E	ISO certification with best practice recognition at department/state/national level (certificate is to be produced)		5
F	Experience of preparation of land acquisition proposal up to the	10	15

	stage of section 4 notification for any engineering project.		
	For extra project	5	
G	Annual audited Turnover of the firm in any year of the last three years		10
i	More than 1 crore but less than 2 crore	4	
Ii	More than 2 crore but less than 3 crore	6	
iii	More than 3 crore	10	
		Total Marks	**100**

(i) If the bidder scored less than 50% than bid will technically be rejected.

(ii) All Bidders are requested to submit the notary certified documents with page numbering and signing on each and every page. The financial turnover and manpower on company payroll documents shall be certified by the C.A.

(iii) The Bidder who will score minimum 50 marks will be declared as eligible Bidder for opening of the financial bid.

(iv) No additional documents shall be procured after submission of bid. Any shortfall shall be liable for the rejection of the bid.

(v)That JDA can have negotiation as deemed appropriate for the reasonability of the consultancy fees to be paid.

(b) Financial Standing:

i. Firm shall have experience in GIS application based assignments related to planning/infrastructure development works; at least two works amounting Rs. 45.00Lacs and above and have been completed satisfactorily. Copy of completion certificate duly attested shall be required.

ii. Turnover of the firm in any financial year of last three years shall not be less than Rs 45.00 Lacs. The present price level for turnover, cost of completed work & disputed amount of similar nature, the previous year's value shall be given weight age of 10% per year as follows :-

(i) For Current Year - 2014-15 1.00

(ii) For last year - 2013-14 1.00

(iii) For year - 2012-13 1.10

(iv) For year - 2011-12 1.21

5.8 The successful bidder shall furnish a Performance security equivalent to 5% of cost of work awarded along with letter of acceptance duly signed and accepted in the form of

DD / BG from a Nationalized Bank / Scheduled Bank valid for one year after due date of completion.

5.9 **Submission of Bids**

5.9.1 **Sealing and Marking of Bids**

The bids must be submitted **on line** using **Digital Signature Certificate** of the bidder through **E-Tendering process** only, by the due date and time as mentioned in the NIB issued for this work.

For submission, evaluation and selection of Consultant a **"Two Bid "** process has been planned. The bid document should be submitted in three parts in three separate envelopes on **E-procurement portal**.
The three parts of the proposal are

(i) **Part 1: Envelope -"A"**containingprint out of all payment receipts of all the fee, registration.
(ii) **Part 2: Envelope -"B"** Technical bid and.
(iii) **Part 3: Envelope -"C"**containing Financial bid.

Part 1: Envelope -"A" Containing print out of all payment receipts of bid document fee, bid security, bid processing fee registration and VAT tax clearance certificate of the consultant would be first opened and if found everything in order then only will proceed to part 2.

Part 2: Envelope -"B" containing Technical bid of the consultant would be opened and technical evaluation will be done as per the minimum eligibility criteria mentioned in bid document of Notice inviting Bid.

Part 3: Envelope -"C" containing financial bid of only those firms, who fulfill minimum eligibility criteria prescribed in.

Notice inviting Bid in the 'Part 1' (technical evaluation) would be opened and evaluated. The final selection of the firm would be done based on the lowest amount quoted by the Consultant

The bidder is required to pay all fee through online payment after registering with JDA on www.jaipurjda.org/e-services/e-tender portal at least in two days advance of tender sale date.

6. Deadline for submission of Bids

6.1 Bids shall be received only on line under E-Procurement system as per the date and time given in the NIB given under Section-I

6.2 If the date of submission of Bids is declared a holiday the next working day will be treated as the last date for submission of Bids.

6.3 The Bid should be in the prescribed form as described in Clause 5.9

6.4 The JDA may, at its discretion, extend the dead line for submission of Bids by

Issuing an amendment in accordance with Clause 3, in which case all rights and obligations of the JDA and of the Bids which were previously subject to the original dead line shall thereafter be subject to the new dead line as extended.

6.5 Late Bids

Any Bid received after the deadline for submission of Bid as stated in Clause 3, or as subsequently extended by the JDA, will not be considered.

6.6 Modification and withdrawal of Bids

6.6.1 The Bidder may modify or withdraw his Bid, provided that the modification or notice of withdrawal is received in writing by the JDA prior to the prescribed dead line for submission of technical Bids.

6.6.2 The Bidder's modification or notice of withdrawal shall be prepared, as appropriate and delivered in accordance with Clause 5.9.

6.6.3 No Bid may be modified after the deadline for submission of Bids.

6.6.4 Withdrawal of a Bid by a Bidder during the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified in the Form of Bid shall result in the forfeiture of the Bid Security.

7. Bid opening and valuation

7.1 Competent Committee will open the Bids in room no. 307, third floor, CCC Building, JDA **on** due date and time in the presence of any of the Bidders or their representative who choose to attend, all of whom sign a register as evidence of their attendance.

7.2 Bids which do not full fill the prescribed criteria shall be treated as non-responsive and shall not be opened further.

7.4 The Bid shall be rejected if:

i) If requisite fee is not deposited in the form of DD/pay orders before opening of bid.
ii) Price bid containing financial proposal is not enclosed.
iii) Project Experience Record is not enclosed.
iv) Activity Schedule is not enclosed.
v) Bio-data of Technical Personnel for the work is not enclosed.
vi) There are any criminal cases pending.
vii) If the affidavit is not enclosed.
viii) If the Power of Attorney is not enclosed.
ix) If the history of criminal cases is not enclosed.
x) If the record of litigation and arbitration is not enclosed.
xi) If undertaking regarding not being blacklisted/ Debarring is not enclosed.

7.5 Clarification of Bids

To assist in the examination, evaluation and comparison of the Bids, the JDA may ask Bidders individually for clarification of their Bids as per issued orders in JDA. The request for clarification and response shall be in writing or by cable. However, no change in the Bid amount or substance shall be sought, offered or permitted by the JDA, during the evaluation of the Bids.

7.6 Determination of responsiveness

7.6.1 Prior to the detailed evaluation of Bids, the JDA will determine whether each Bid has

been submitted in the proper form and whether it is substantially responsive to the requirements of the Bid documents. Bids, which have not been submitted in the proper form, will be rejected.

7.6.2 Any Bid which is not substantially responsive to the requirements of the Bid documents will be rejected by the JDA and may not subsequently be made responsive by the Bidder correcting or withdrawing the non-conforming deviation(s) or reservation(s).

7.6.3 Tender documents containing detailed qualifications and eligibility criteria, scope ofwork, Terms of Reference and Conditions of Contract may be downloaded fromJDA's web site **https://jaipurjda.org**. or

Rajasthan State Public Procurement Portal **https://sppp.rajasthan.gov.in/**.or

E-Tendering Portal h**ttps://eproc.rajasthan.gov.in/**.

7.6.4 The competent authority of, JDA reserves the right either to accept or reject any or all Tenders at any stage without assigning any reasons.

7.7. PROPOSAL EVALUATION

7.7.1 General

From the time the proposals are opened to the time the contract is awarded, if any consultant wishes to contact the Client on any matter related to its proposal, it should do so in writing at the address indicated in the Data Sheet. Any effort by the firm to influence the Client in the Client's proposal evaluation, proposal comparison or contract award decisions may result in the rejection of the consultant's proposal.

7.7.2 Evaluators of Technical Proposals shall have no access to the Financial Proposals until the technical evaluation, including its approval by competent authority is obtained.

7.7.3 Evaluation of Technical Proposals

The evaluation committee appointed by the Client as a whole, and each of its members individually evaluates the proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria and point system specified in the Data Sheet. Each responsive proposal will be given a technical score (St). A proposal shall be rejected at this stage if it does not respond to important aspects of the Terms of Reference or if it fails to achieve the minimum technical score as per QCBS.

7.7.4 Criteria for Evaluation

Evaluation of Technical Proposals

The bidder should qualify criteria prescribed in clause 5.7

7.7.5 Eligible Assignments

a) For the purposes of determining Conditions of Eligibility and for evaluating the Proposals under this bid, consultancy assignments in respect of preparation of detailed project report including engineering surveys and / or for the following projects shall be deemed as eligible assignments. The firm shall have at least 3 year experience in core consultancy assignments for planning/ road/infrastructure sectors. Firm shall have experience in GIS application based assignments related to planning/infrastructure development works; at least two works amounting Rs.

40.00Lacs and above and have been completed satisfactorily. Copy of completion certificate duly attested shall be required.

Two such assignments should have been completed in the last 3 years.

7.7.6 Evaluation of Financial Proposal

In the second stage, the financial evaluation will be carried out. For financial evaluation, the total cost indicated in the Financial Proposal will be the main criterion.

The JDA will determine whether the Financial Proposals are complete, qualified and unconditional. The cost indicated in the Financial Proposal shall be deemed as final and reflecting the total cost of services. Omissions, if any, in costing any item shall not entitle the firm to be compensated and the liability to full fill its obligations as per the TOR within the total quoted price shall be that of the Consultant. The lowest financial proposal will be accepted for award of work.

7.7.7 Final Evaluation

The Selected Applicant shall be the first ranked Applicant (having the lowest competitive price). The second ranked Applicant shall be kept in reserve and may be invited for negotiations in case the first ranked Applicant withdraws, or fails to comply with the requirements as the case may be.

7.7.8 Opening and Evaluation of Financial Proposals

After the evaluation of quality is completed, the Client shall notify those consultants whose proposals did not meet the minimum qualifying mark or were considered non-responsive to the Bid and Terms of Reference, indicating that their Financial Proposals will not be opened after completing the selection process. The Client shall simultaneously notify the consultants that have secured the minimum qualifying mark, indicating the date and time set for opening the Financial Proposals. The opening date shall not be sooner than 2 days after the notification date. The notification may be sent by registered letter, cable, telex, facsimile, or electronic mail.

7.7.9 The Financial proposals shall be opened in the presence of the consultants representatives who choose to attend. The name of the consultant, the quality scores, and the proposed prices shall be read aloud and recorded when the Financial Proposals are opened. The Client shall prepare minutes of the public opening.

7.8 The evaluation committee will determine whether the Financial Proposals are complete, (i.e., whether they have coasted all items of the corresponding Technical Proposals, if not, the Client will cost them and add their cost to the initial price), correct any computational errors.

7.9 The Client will select the lowest proposal ('evaluated' price). The selected Consultant may be invited for negotiations.

8. Negotiations

8.1 Negotiations may be held at the address indicated in the Data Sheet. The aim is to reach agreement on all points and sign a contract.

8.2 Negotiations will include a discussion of the Technical Proposal, the proposed methodology (work plan), staffing and any suggestions made by the firm to improve the Terms of Reference. The Client and Consultant will then work out final Terms of Reference, staffing, and bar charts indicating activities, staff, periods in the field and in the home office, staff-months, logistics, and reporting. The agreed work plan and final Terms of Reference will then be incorporated in the "Description of Services" and form part of the contract. Special attention will be paid to getting the most the Consultant can offer within the available budget and to clearly defining the inputs required from the Client to ensure satisfactory implementation of the Assignment.

8.3 Unless there are exceptional reasons, the financial negotiations will involve neither the remuneration rates for staff (no breakdown of fees) nor other proposed unit rates.

8.4 Having selected the Consultant on the basis of, among other things, an evaluation of proposed key professional staff, the Client expects to negotiate a contract on the basis of the experts named in the Proposal. Before contract negotiations, the Client will require assurances that the experts will be actually available. The Client will not consider substitutions during contract negotiations unless both parties agree that undue delay in the selection process makes such substitution unavoidable or that such changes are critical to meet the objectives of the assignment. If this is not the case and if it is established that key staff was offered in the proposal without confirming their availability, the Consultant may be disqualified.

8.5 The negotiations will conclude with a review of the draft form of the contract. To complete negotiations the Client and the Consultant will initial the agreed contract. If negotiations fail, the Client will invite the firm who has quoted the second lowest price for negotiations. The process will be repeated till an agreed contract is concluded.

9. AWARD OF CONTRACT

9.1 As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, looking to the quantum of work to be procured is very large and it may not be in the capacity of single Bidder, whose bid is accepted. So L1 will be awarded minimum 30% work, remaining quantity may be subdivided among participant bidders at the approved rate, in order of higher to lower QCBS score, as per the requirement.

9.2 The Consultant is expected to commence the Assignment on the date and at the location specified in the Data Sheet, failing which action as per relevant clause shall be taken.

10. CONFIDENTIALITY

10.1 Information relating to evaluation of proposals and recommendations concerning awards shall not be disclosed to the consultants who submitted the proposals or to other persons not officially concerned with the process, until the winning Consultant has been notified that it has been awarded the contract.

11. DATA SHEET

Information to Consultants

Clause Ref.

11.1	**The name of the Client:**	- The Jaipur Development Authority, Jaipur (JDA)
	The method of selection	- Least Cost Selection Minimum 30% work shall be granted to L1remaining quantity may be subdivided among participant bidders at the approved rate, in order of higher to lower QCBS score, as per the requirement.
11.2	A technical and a financial Proposals are requested	- Yes
11.3	The name, objectives and description	As per TOR of the Assignment
11.4	A pre-proposal conference will be held	Yes a pre-bid meeting shall be held on 20.07.2015 at 16.00 PM.
11.5	The assignment is phased: as below i. Cadastral maps available with JDA (scanned copy). ii. Remaining cadastral maps if not available shall have to be arranged by the consultant from respective department of GOR. iii.Soft copy of 2025 Master Plan plates. iv.Soft copy of sector plans. In case if soft copy is not available, scanned copy shall be provided. v. All commitments, reservation letters, 90B, single patta details have to be collected by consultant from respective DC's office or TP Cell JDA. vi. Base road network is to be linked as base from any WMS like Bing, Google earth, Yahoo maps etc.	
11.6	Time limit as at clause 6 of contract agreement.	

12. Clarifications may be requested up to Pre-Bid meeting. The address for requesting clarifications is:
    i. Mr. Arvind Arya, Additional Chief Engineer, JDA, Jaipur.

Email:ace2.jda@gmail.com; Mobile No:7742222100.

ii. Mr. P.K.Jain, Executive Engineer-Sector Roads, JDA, Jaipur , Mobile No:9928026983.

12.1	Proposals should be submitted in the following language(s):	English
12.1.1	(i) Short listed Consultants may associate with Other short listed Consultant	No
	(ii)The minimum required experience of Proposed key professional	As Detailed in criteria for staff in evaluation
	(iv) Reports which are part of the assignment must In the following language	English
	(iv) Training is a feature of this Assignment	No
12.2	Validity of the proposal	**120 Days**
12.3	Consultants must submit the proposal only in the on-line mode on E- procurement portal. No other form of submission of bid or proposal is acceptable.	-
12.4	Proposals must be submitted no later than	As per NIB and Corrigendum made, if any the following date and time:
12.5	The address to send information to the Client is-	Executive Engineer Sector Roads, Room No. 307, Third Floor, CCC Building, Jaipur Development Authority, Jaipur, Telephone: 0141-2563234- 5001
12.6	The Assignment is expected to commence	Immediate on issue of Letter of Acceptance

SCHEDULE – IV
GENERAL CONDITIONS OF CONTRACT

1 General Provisions

1.1 **Definitions**

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Law means the laws and any other instruments having the force of law in the Government's country as they may be issued and in force from time to time;

(b) "Agreement" means the Agreement signed by the Parties, to which these General Conditions of Contract are attached, together with all the documents listed in Clause 2 of such signed Contract;

(c) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GC 2.3;

(d) "Employer", "JDA" means Jaipur Development Authority, Jaipur.

(e) "GC" means these General Conditions of Contract;

(f) "Government" means the Government of India or the Government of Rajasthan as the case may be.

(g) "Local currency" means Indian Rupees;

(h) "Member", in case the Consultants consist of a joint venture of more than one entity, means any of these entities, and "Members" means all of these entities;

(i) "Personnel" means persons hired by the Consultants or by any Sub consultant as employees and assigned to the performance of the Services or any part thereof; "Local Personnel" means such persons who at the time of being so hired had their domicile inside India; and "Key Personnel" mean the personnel referred to in Clause 16 of TOR

(j) "Party" means the Employer or the Consultants, as the case may be, and Parties means both of them;

(k) "Commissioner/Superintending Engineer" means the Commissioner / Superintending Engineer, JDA or Employer.

(l) "Services" means the work to be performed by the Consultants pursuant to this Contract for the purposes of the Project, as described in Appendix A hereto;

(m) "Sub-Consultant" means any entity to which the Consultant subcontract any

part of the Services in accordance with the provisions of Clause GC 3.7; and

(n) "Third Party" means any person or entity other than the Government, the Employer, the Consultant or a Sub-consultant.

(o) "Technical Proposal" means the technical proposal submitted by the consultant and accepted by the Employer.

1.2 Relation between the Parties

Nothing contained herein shall be construed as establishing a relation of master and servant or of agent and principal as between the Employer and the Consultant. The Consultant, subject to this Contract, have complete charge of Personnel performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

1.3 **Law Governing the Contract**
This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law of India and Rajasthan State.

1.4 **Language**
This Contract has been executed in the English, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

1.5 **Headings**
The headings shall not limit, alter or affect the meaning of this Contract.

1.6 **Notices**
Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram or facsimile to such Party at the address specified in the *SC*.

Employer: The Commissioner,
Jaipur Development Authority, Jaipur.
Tele No. 0141-2563234

1.6.1 Notice shall be deemed to be effective as follows:

(a) in the case of personal delivery or registered mail, on delivery;
(b) in the case of telexes/e-mail, 24 hours following confirmed transmission;
(c) in the case of telegrams, 24 hours following confirmed transmission; and
(d) in the case of facsimiles, 24 hours following confirmed transmission.

1.7 A party may change its address for notice hereunder by giving the other party notice of such change to the other party.

1.8 **Location**
The Services shall be performed at Jaipur (by establishing local office at Jaipur along

with land line phone and Fax facility) and such locations as are specified by the Employer, where the location of a particular task is not so specified, at such locations, whether in India or elsewhere, as the Client may approve.

1.9 **Authority of Member in Charge**
In case the Consultants consist of a joint venture of more than one entity, the Member shall authorize one of the entities to act on their behalf in exercising all the consultants' rights and obligations towards the Employer under this Contract, including without limitation the receiving of instructions and payments from the Employer.

2 **Authorized Representatives**
Any action required or permitted to be taken, and document required or permitted to be executed, under this Contract by the Employer or the consultants may be taken or executed by the officials authorized by the JDA and the consultant.

2.1 **Taxes and Duties**
Unless otherwise specified, the Consultants shall pay such taxes, duties, fees and other impositions as may be levied under the Applicable Law.

2.1.1 The consultants and the personnel shall pay the taxes, duties, fees, levies and other Impositions levied under the existing, amended or enacted laws during life of this contract and the client shall perform such duties in regard to the deduction of such tax as may be lawfully imposed.

2.1.2 The rates quoted should be inclusive of all taxes payable for this Consultancy Services, which shall not be paid/ reimbursed by the Client separately.

2.2. **Commencement, Completion, Modification and Termination Of Contract**

2.3 **Effectiveness of Contract**
This Contract shall come into force and effect on the date (the "Effective Date") of the Employer's notice/Work order to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SC have been met.

2.4 **Termination of Contract for Failure to Become Effective**
If this Contract has not become effective within such time period after the date of the Contract signed by the Parties, either Party may, by not less than four (4) weeks' written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

2.5 **Commencement of Services**
The Consultants shall begin carrying out the Services at the end of Maximum 7 days period after the Effective Date/Acceptance letter date.

2.6 **Expiration of Contract**
Unless terminated earlier pursuant to General Conditions Clause 3 below hereof, this Contract shall expire when services have been completed and all payments have been made at the end of such time period after the Effective Date as shall be specified in

the Contract.

2.7 **Entire Agreement**

This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

2.8 **Modification**

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services, may only be made by written agreement between the Parties. Pursuant to Clause GC 7.2 hereof, however, each party shall give due consideration to any proposals for modification made by the other Party.

2.9.1**Suspension**

The Client may, by written notice of suspension to the Consultants, suspend all payments to the Consultants hereunder if the Consultants fail to perform any of their obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultants to remedy such failure within a period not exceeding fifteen (15) days after receipt by the Consultants of such notice of suspension.

2.9.2**Extension of Time**

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of condition beyond control of consultant.

3 **Termination**

3.1 **By the Employer**

The Employer may, by not less than seven (07) days' written notice of termination to the Consultants (except in the event listed in paragraph (f) below, for which there shall be a written notice of not less than fifteen (15) days), such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (g) of this Clause, terminate this Contract:

(a) If the Consultants fail to remedy a failure in the performance of their obligations hereunder, as specified in a notice of suspension pursuant to Clause GC 2.9.1 hereinabove, within seven (07) days of receipt of such notice of suspension or within such further period as the Client may have subsequently approved in writing;

- If prorata progress is not maintained.
- Poor performance of technical staff.
- Poor quality work.
- Fail to follow instructions of Officer Incharge.

(b) If the Consultants become (or, if the Consultants consist of more than one entity, if any of their Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultants fail to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GC 9.5 hereof;

(d) If the Consultants submit to the Employer a statement which has a material effect on

the rights, obligations or interests of the Employer and which the Consultants know to be false;

(e) If, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than fifteen (15) days; or

(f) If the Employer, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

(g) If the consultant, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. For the purpose of this clause:
"Corrupt practice" means the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the selection process or in contract execution.
"fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the borrower and includes collusive practice among Consultant (prior to or after submission of proposals) designed to establish prices at artificial, non-competitive levels and to deprive the borrower of the benefits of free and open competition.

3.2 **By the Consultants**

The Consultant, may by not less than seven (07) days written notice to the Employer, such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause, terminate this Contract.

a) If the Employer fails to pay any money due to the Consultants pursuant to this Contract and not subject to dispute pursuant to Clause 9.5.3 hereof within thirty(30) days after receiving written notice from the Consultants that such payment is overdue;

b) If the Employer is in material breach of its obligations pursuant to this Contract and has not remedied the same within thirty (30) days (or such longer period as the Consultants may have subsequently approved in writing) following the receipt by the Employer of the Consultants notice specifying such breach;

c) If, as the result of Force Majeure, the Consultant, are unable to perform a material portion of the Services for a period of not less than fifteen (15) days; or

d) If the Employer fails to comply with any final decision reached as a result of arbitration pursuant to Clause GC 8 hereof.

3.4 **Cessation of Rights and Obligations**

Upon termination of this Contract pursuant to Clauses 2.4 or 3 hereof, or upon expiration of this Contract pursuant to Clause 2.4 hereof, all rights and obligations of the Parties hereunder shall cease, except

(i) such rights and obligations as may have accrued on the date of termination or expiration,

(ii) the obligation of confidentiality set forth in Clause GC 3.9 hereof,

(iii) any right which a Party may have under the Applicable Law.

3.5 **Cessation of Services**

Upon termination of this Contract by notice of either Party to the other pursuant to

Clauses 3.1 or 3.2 hereof, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Employer, the Consultant shall proceed as provided, respectively, by Clauses GC 5 or 6 hereof.

3.6 **Disputes about Events of Termination**

All the disputes shall be dealt as per RTPP Act 2012 and Rules 2013.

3.7. **Obligations of the Consultants**

3.7.1 **General**

3.7.2 **Standard of Performance**

The Consultants shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Employer, and shall at all times support and safeguard the Employer's legitimate interests in any dealings with Sub Consultant or Third Parties.

The detailed engineering drawings/fit for construction/working drawings shall be submitted to the engineer in charge/executive engineer for approval and comply with the comments/suggestions given without any additional cost. Not with standing any approvals of the client, the consultant shall remain fully responsible for quality and creativeness of his work.

3.7.3 **Law Governing Services**

The Consultants shall perform the Services in accordance with the Applicable Law and shall take all practicable steps to ensure that any Sub consultants, as well as the Personnel and agents of the Consultants and any Sub consultants, comply with the Applicable Law.

3.7.4 **Conflict of Interests**

The consultant shall abide by all the conditions laid down in the Rajasthan Transparency of Public Procurement Act 2012 (RTPP Act 2012) and rules 2013. The consultant has to sign and upload Annexure A & B given in the RTPP Act 2012.

3.8 **Confidentiality**

The Consultant, their Sub consultant and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relation to the Project, the Services, this Contract or the Employers business or operations without the prior written consent of the Employer.

4. **Liability of the Consultants**

Subject to additional provisions, if any, set forth in the SC, the Consultant liability under

this Contract shall be as provided by the Applicable Law.

4.1 **Insurance to be taken out by the Consultant**

The Consultant shall take out and maintain, at their own cost, but on the terms and conditions approved by the client, insurance against the risks, and for the coverage and shall provide evidence to the client showing that all such insurance has been taken out and maintained and that the current premium have been paid off and shall also keep the insurance live by paying timely premium time to time, throughout the period of consultancy, for covering of:

i) Third party motor vehicle liability in respect of motor vehicles operated by the consultant or their personnel.

ii) Professional Liability Insurance (PLI) including deficiencies/inadequacies in the work and its related components for a period of Two Years beyond the consultancy period or as per Applicable Law, whichever is longer after the completion of consultancy services with a minimum coverage equal to the contract value for the assignment.

iii) Employer's liability and workers compensation insurance in respect of the personnel of consultants and any sub consultants, in accordance with the applicable law as well as, with respect to such personnel, any such life, health, accident, travel or other insurance as may be appropriate.

All the insurance and policies should start from the date of commencement of services and remain effective as per relevant requirements of contract agreement.

4.2 **Accounting, Inspection and Auditing**

The Consultant shall keep accurate and systematic accounts and records in respect of the Services hereunder, in accordance with internationally accepted accounting principles and shall permit the Employer or its designated representative to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the Employer.

4.3 **Consultant' Actions requiring Employer's prior Approval**

The Consultant shall obtain the Employers prior approval in writing before taking any of the following actions:
Entering into a subcontract for the performance of any part of the Services, it being understood

(i) That the selection of the Sub consultant and the terms and conditions of the Subcontract shall have been approved in writing by the Employers prior to the Execution of the subcontract, and

(ii) That the Consultant shall remain fully liable for the performance of the Services by the Sub consultant and its Personnel pursuant to this Contract; and

4.4 **Specific Responsibilities of the Consultant**

The consultant shall be fully responsible for collecting data and information from

Government and other agencies. All information, data and reports obtained from the Government and other agencies in the execution of the services shall be properly reviewed and analyzed by the Consultant. The responsibility for the correctness of using such data shall rest with the Consultant. All such information, data and reports shall be treated as confidential.

The Consultant shall make his own arrangements for document reproduction, printing and reproduction of all study reports during the course of the study.

4.5 **Reporting obligations**

The Consultant shall submit to the Employer the reports and documents specified in Appendix A hereto. At the end of the project before the final payment the consultant shall submit a set of all working drawings / good for construction with a project completion report in soft and hard copy.

The Consultant is expected to provide suitable presentations of the project during the review meetings of the client / employer or as mentioned at relevant place.

All submission of the Consultant such as drawings, designs, estimates, reports, etc., shall be of five hard copies and three soft copies each. Drawings shall be of AO / A1 sizes. OR as specified in the specifications.

The Consultant / concerned expert of Consultant shall regularly visit the site during construction and certify in the site register that their drawings are being correctly interpreted at site and the finishing is of acceptable quality.

5. Documents prepared by the consultant to be the property of the employer

All plans, drawings, specifications, designs, reports and other documents prepared by the Consultant in performing the Services shall become and remain the property of the Employer, and the Consultant, shall not later than upon termination or expiration of this Contract, deliver all such documents to the Employer, together with a detailed inventory thereof. The Consultant may retain a copy of such documents. The Consultant shall however not use these documents for any purpose to any agency other than the client without prior written approval of the client.

6. Equipment and Materials furnished by the Employer.

Equipment and materials if made available to the Consultant by the Employer, or purchased by the Consultants with funds provided by the Employer, shall be the property of the Employer and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Employer an inventory of such equipment and materials and shall dispose of such equipment and materials in accordance with the Employer's instructions. While in possession of such equipment and materials, the Consultant, unless otherwise instructed by the Employer in writing, shall insure them at the expense of the Employer in an amount equal to their full replacement value.

7. **Consultants' Personnel**

7.1 **General**

The Consultant shall employ and provide such qualified and experienced Personnel as are required to carry out the Services from time to time under intimation to the Engineer-in-Charge/Executive Engineer.

One terminal with required manpower and software till the contract is over shall be provided by the consultant in JDA office.

7.2 **Resident Project Manager**

The Consultants shall ensure that at all times during the Consultant' performance of the Services, a Resident Engineer shall take charge of the performance of such Services.

8. Obligations of the Employer

8.1 Assistance and Exemptions

Employer shall use its best efforts to ensure that the Employer shall provide the Consultant, Sub- Consultant and Personnel with all requisite facilities pursuant to applicable law as shall be necessary to enable the Consultant, Sub- Consultant or Personnel to perform the Services;

8.2 Access to Land

The Employer warrants that the Consultant shall have, free of charge, unimpeded access to all land in respect of which access is required the performance of the services. The Employer will be responsible for any damage to such land or any property thereon resulting from such access and will indemnify the Contractor and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default or negligence of the Consultant or any sub- Consultant or the Personnel of either of them.

8.3 Change in the Applicable Law

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost or reimbursable expenses incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto.

9 Time Schedule:

9.1. Payments to the Consultant

Billing and payments in respect of the Contract shall be made as stated in schedule in 2 under TOR. All payments shall be made in Indian Rupees.

9.2 Mode of Billing and Payment

Billing and payments in respect of the Services shall be made as follows:

(a)The Client shall cause the payment of the Consultants periodically as given in schedule of payment above within thirty (30) days after the receipt by the Client of bills with supporting documents.

9.3. Fairness and good faith

9.3.1 **Good Faith**

The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

*9.3.*2 **Operation of the Contract**

The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with Clause 8 hereof.

9.4 Secrecy and Confidentiality

The consultant is expected to maintain utmost Secrecy and confidentiality on any proprietary information / data / reports that may be provided by us orally or in writing and collected by you during the course of this contract.

9.5. Settlement of Disputes

Settlement of disputed shall be done in accordance of the provisions made in the RTPP Act 2012 and Rules 2013.

10 Foreclosure

10.1 The Employer may, by not less than fifteen (15) days written notice of foreclosure (the expiry of the notice period whereof being the date of termination) to the Consultant, without assigning any reason whatsoever at any stage of the contract, terminate the contract.

*10.*2 Up on termination of this contract, the Consultant shall take necessary steps to bring the work to a close in a prompt orderly manner and shall handover all the documents/ reports prepared by the Consultant up to and including the date of termination to the Employer.

*10.*3 The Consultant shall be duly paid for the works carried out and services rendered till the date of termination. The Consultant shall not be reimbursed for any demobilization expenses, if the contract is terminated.

11. Jurisdiction of court

In the event of any dispute arising between the parties here to in respect of any of the matters comprised in this agreement, the same shall be settled by a competent court having jurisdiction over the place where agreement is executed at Jaipur and by no other court.

***

SCHEDULE-V

BIDDER'S INFORMATION SHEET

Bidder's Information	
Bidder's legal Name 1. Name	
2.Telephone numbers	
2. Fax numbers	
3. E-mail address	
Type of Firm (Individual/ Partnership /Private Ltd.)	
Address of the firm	
Bidder's country of constitution	
Bidder's year of constitution (certified copy to be enclosed)	
Bidder's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	

Signature of bidder/Authorized representative

SCHEDULE-VI

GENERAL WORK EXPERIENCE

(Bidder has to give a note on the general works done by the firm during last three years)

S.No	Work	Amount	Scheduled date of completion	Actual date of completion

Signature of bidder/Authorized representative

SCHEDULE-VII

SPECIFIC EXPERIENCE DETAILS

(The details of the Work of Preparation of Schedule of Rates/Detailed Project Reports/Feasibility Reports/Rate Analysis, etc. done to justify qualification)
(Two works of amounting Rs. 45.00 lacs or above)

S.No	Work	Agency	Amount	Certificate

Signature of bidder/Authorized representative

SCHEDULE-VIII

TERMS OF REFERENCE (TOR)

1. Background Information:

Jaipur Development Authority (JDA) is the agency of the Rajasthan responsible for preparation and implementation of Master Plan for the Jaipur http://en.wikipedia.org/wiki/Jaipurcity in Rajasthan state in India. It is engaged in infrastructural and basic amenity development for Jaipur city and also environment conservation and development of rural areas around the city.

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR DESIRES TO OBTAIN **Consultancy for identification of land, demarcation, planning etc. of land for 160 feet & above Sector Roads JAIPUR.**

2.Objectives & Description of Assignment

JDA has planned to prepare the ownership details of the land falling within the sector roads and commercial strips under JDA jurisdiction. Detailed schedules for acquisition/notification of required land and properties and their demarcation on ground in consultation with the JDA authorities. Land Acquisition/notification Plan should include Kilometer-wise Land Details Plan (LDP) and schedule of ownership thereof and Costs of structures as per JDA Rules. Details of properties, such as buildings and structures falling within the right-of-way and on commercial strips and costs of compensation based on JDA rules. Land Details Reports should be prepared in consultation with affected persons based on latest land records available on "**Apna khata.com**" or collected from respective department.

Main objective of the work is to prepare land details falling in ROW and commercial strips and their demarcation on ground by opting following steps:

3. Order of Execution:

- Establishment and construction of control points (Bench Marks-Ref.Fig.8 & 10) on ground after due checking by traverse survey as per requirement and design of JDA. Minimum three points for each sector.
- Establishment and construction of Grid points on ground after due checking by traverse survey as per requirement and design of JDA for each sector.
- Geo Referencing of ground points with the help of DGPS.
- Collection of all Land Record, Cadastral Maps, Master Plan tiles and GT Sheets
- Digitization (Vectorization) of these Cadastral Maps to prepare vector layer.
- Normalization of Cadastral Maps vector layer by applying methods to remove errors due to distortion, vectorization and other errors.
- Geo referencing of Cadastral Maps vector layer.

Mapping of khasra map with ground points. The related works required to carry out this task like collection of Khasra/land details and DLC rates from concerned departments have to be undertaken by the Consultant.

- Collection of Sector Plans and commitments from all concerned zones/different cells of JDA.
- Preparation of vector layer of sector plans and commitments.
- Geo referencing of Sector Plan & commitments vector layer.
- Integration and superimposition of sector plans and commitments on khasra maps.
- Verification of prepared map on ground by consultant and checking by JDA/third party.
- Freezing of final maps for all future use after all modifications based on ground condition and final checking.
- Linking of Master Plan Geo-referenced Raster as well as vector layer.
- Linking of available city road maps provided by Google, Yahoo, Bing and their maps as per directions of JDA.
- Linking of attributes of each entity (Khasra, and khata) with respective vector layer and shape file.
- Calculation of area of khasra for each khata of respective village in required format for sector road area and commercial strip along with cost details of structures.
- Preparing shape file for ROW area and commercial strip area for each sector road such that required report can be generated by fixing quarry on different parameters.
- All files of JDA commitments, cadastral maps and sector plans shall be collected by agency from respective Zone.
- These files should be scanned and linked with the respective shape file and database as per given quality assurance norms in technical specifications chapter.
- Complete inventory of all "Arakshan Patra"(Reservation letters) and pattas issued for the sector roads from time to time shall be updated by the agency.
- During this process if any discrepancy found same shall be listed by the agency and necessary modifications as per the directions of JDA have to be carried out.
- Preparation of complete scheme under respective section of JDA Act 1982 and its notification following due procedure for notification of Sector Road area as **"No Construction Zone".**
- The complete process of handling Objection/Suggestion during the process/scheme preparation and notification as per JDA Act 1982 is to be carried out by the agency as per requirement of JDA.
- Preparing KML/KMZ files of all layers.
- Documentation of Geo referenced Cadastral Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Geo referenced Sector Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Documentation of Land Detail Plan of each road with complete details of each "khata". On te reverse side of the plan in bounded form in A4 & A3 size Refer Fig .7 (5 copies) with different

overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.

- Documentation of complete list of all control points, grid points, and Bench Marks etc.
- Establishment of Project Server and uploading all data as per JDA requirement.
- All works as mentioned in Bid document are to be carried out by the consultant to the fullest satisfaction of JDA.
- There will be no additional payment of account of redo, corrections, modifications and checking or verification of work. Consultant has to deploy necessary staff for these tasks as and when required on the directions of Engineering – in – Charge.
- Detailed process, norms, quality checks and other details have been mentioned in Schedule X (Technical Specifications).
- Time duration of the work shall be **six months**. Contract period can be extended as per requirement of JDA for another one year on mutual consent. Amount of work can also be extended upto 50% in accordance with the provisions of the RTPPA-2012.
- No part of the work done shall be used by the agency; it will be the property of JDA. Agency has to submit affidavit in this regard.
- Work cannot be Sublette by the Agency.

Comment [AA1]:
Comment [AA2]:
Comment [AA3]:

Demarcation Work: (As per Fig.1)

➢ **Center Line:**

Demarcation of Center Line of the Sector Road will be done with the help of 200mm dia NP2 CC pipe @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig – 2.

At curves and turning points interval will be @30mt c/c.

On existing roads no center line will be demarcated.

➢ **ROW Line:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig – 3.

At curves and turning points interval will be @30mt c/c.

Extra stones will be required at junction/intersection points

➢ **Commercial strip:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig – 4.

At curves and turning points interval will be @30mt c/c.

Extra stones will be required at junction/intersection points

Eligibility Criteria and evaluation of Bid on QCBS:
Minimum Eligibility Criteria:

a. The firm shall have at least **3 year experience** in core consultancy assignments for planning/road/infrastructure sectors.

b. The Firm should submit an affidavit that the firm has never been blacklisted by any central/state/any other government agency and that the firm has not left any work incomplete during the last three years in the Annexure IV given in the Bid Documents.

c. Firm shall have experience in GIS application based assignments related to planning/infrastructure development works; at least **two works amounting Rs. 45.00Lacs** and above.

d. Turnover of the firm in any financial year of last three years shall not be less than Rs 45.00 **Lacs.**

e. No JV shall be permitted to participate in the bid.

Proposal of only those consulting firm which shall qualify in minimum eligibility criteria will be further scrutinized on QCBS as given under

S. No.	Description of Evaluation	Micro Marks	Maximum Marks
A	Establishment of firm (From date of Incorporation certificate)		10
I	More than 3 year	2	
Ii	>3 yrs but <6 yrs	4	
Iii	>6 yrs but <9 yrs	6	
Iv	>9 yrs	10	
B	Experience of preparation of GIS application based infrastructure/Engineering development work.		25
I	For single work	15	
II	For each additional work	5	
C	Experience of preparation of scheme layout plan with khasra map (Cadastral Map) digitization (Vectorization) and superimposition on total station		10

	survey approved by the competent authority not below the rank of executive Engineer/Secretary/commissioner/ Executive officer(At least for 10 hect area/ 10 km road with preparation of KMZ file. One Work	5	
	For Additional work	5	
D	Resources with firm		15
i	• Original Arc- GIS software.	6	
	• 10 number computer, one Plotter, and one scanner	3	
	• Auto-cad /equivalent licensed certificate, One DGPS.	3	
	• Total Station Machines minimum 3	3	
ii	One number post graduate Planner and one civil engineer having more than 10 year experience on.	5	10
iii	Two number revenue staff not below the rank of revenue inspector on company pay-role with TDS certificate if applicable or CA certificate	5	
E	ISO certification with best practice recognition at department/state/national level (certificate is to be produced)		5
F	Experience of preparation of land acquisition proposal up to the stage of section 4 notification for any engineering project.	10	15
	For extra project	5	
G	Annual audited Turnover of the firm in any year of the last three		10

	years		
i	More than 1 crore but less than 2 crore	4	
Ii	More than 2 crore but less than 3 crore	6	
iii	More than 3 crore	10	
		Total Marks	**100**

(i) If the bidder scored less than 50% than bid will technically be rejected.
(ii) All Bidders are requested to submit the notary certified documents with page numbering and signing on each and every page. The financial turnover and manpower on company payroll documents shall be certified by the C.A.
(iii) The Bidder who will score minimum 50 marks will be declared as eligible Bidder for opening of the financial bid.
(iv) No additional documents shall be procured after submission of bid. Any shortfall shall be liable for the rejection of the bid.
(v) That JDA can have negotiation as deemed appropriate for the reasonability of the consultancy fees to be paid.

Deliverables by JDA:

a) Land details, incase if it is not available with JDA same has to be obtained by the agency from Revenue Department. Necessary charges shall be deposited b JDA (If Any)

b) Cadastral maps, incase if it is not available with JDA same has to be obtained by the agency from Revenue Department. Necessary charges shall be deposited b JDA (If Any)

c) Sector Plans.

d) Master Plan Tiles.

e) All JDA commitments like reservation letters, approved schemes, JDA schemes, Group Housing Patta, and Land allotment etc. These details have to be collected by the agency from respective DC office or from other wings of JDA.

f) GT Sheet in Hard Copy.

Deliverables by Consultant:

- Geo referenced Cadastral Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Geo referenced Sector Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Land Detail Plans (LDP): Land Detail Plan of each road with complete details of each "khata". On the reverse side of the plan in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. For each Sector Road a separate volume is to be prepared.
- Processing of prescribed procedure for Notification of "No Construction Zone" in accordance with JDA Act 1982.
- Land Details: Land details in desired format for road area and commercial strip for each road in tabular format in bounded form.
  - Bench Mark Details-(Ref.Fig.8&10)
  - Control Point Details (as per Fig.5,6 and 9).
  - Demarcation of each road on ground.

As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, looking to the quantum of work to be procured is very large and it may not be in the capacity of single Bidder, whose bid is accepted. So L1 will be awarded minimum 30% work, remaining quantity may be subdivided among participant bidders at the approved rate, in order of higher to lower QCBS score, as per the requirement.

Executive Engineer-Sector Roads
JDA, Jaipur

Signature of bidder/Authorized representative

12.3 TERMS OF PAYMENT:

The work has to be carried out to the satisfaction of the JDA. The bills for various stages of work will be presented by the Bidder to JDA. The payment will be made to the Bidder after examination and approval of the relevant work by JDA. The payment will be made in stages as stipulated below:

Payment Schedule (Each Sector-wise)

Based on Road length and AOI (ROW+Commercial Strip) Area.

S. No.	Description of work	% of stage wise Payment	Cumulative %
1	• Establishment of control points (BM) and grid points as per technical specifications. Minimum threeBench Mark points for each sector. • Ground Checking/verification.	5% - One Month from date of W/O	5% - One Month from date of W/O
2	• Collection of Land records, khasra maps/ cadastral maps, JDA commitments and sector plans. • Mapping of Khasra maps/ cadastral maps, JDA commitments and sector plans with control points and grid points. • Vectorisation of cadastral maps, JDA commitments and sector plans • Ground Checking/verification.	5% - One Month from date of W/O	10% - One Month from date of W/O
3	• Superimposition of sector roads, commitments on khasra and Google. • Checking and verification. • Creation of KML/KMZ files	10% - Two Monthsfrom date of W/O	20% - Two Months from date of W/O
4	• Compiling of Land Details for ROW and commercial strip. • Core GIS, Linking of data • Checking and verification. • Uploading these details on server.	30% - Three Months from date of W/O	50% - Three Monthsfrom date of W/O

5	• Demarcation of center line, road boundary & commercial strip as per JDA specifications on ground. • Ground checking and verification.	20% - Four Months from date of W/O	70%- Four Months from date of W/O
6	• Initiating and completion of complete process of notification of land details in accordance to JDA Act1982 for ROW as "No Construction Zone".	10% - Five Months from date of W/O	80%- Five Months from date of W/O
7	• Planning work of commercial strips • Documentation Work • Establishment of Project Server • Uploadingcomplete work on server as per the directions of JDA.	10% - Six Months from date of W/O	90%-Six Months from date of W/O
8	• After six months of satisfactory completion of work.	10% - One Year from date of W/O	100% - One Year from date of W/O

4. Indemnity

<BIDDER> shall indemnify JDA from any error or negligence in work including the professional services provided by the <BIDDER>. They will also bear the responsibility of clarifying issues that may crop up at alter stage upto a period of one year after the completion of contract and making corrections thereof without any additional charges.

5. Liquidated Damages (LD)

a If the Bidding Firm fails to complete the various jobs assigned to him as per the scope of the work in the given time, he is liable for compensation. He shall, without prejudice to any other right or remedy is liable for compensation @ 1% per week (of the unexecuted amount) or such smaller amount as may be fixed, by JDA on the contract value. When delay in completion of the work / part work amounts to less than a week the compensation payable shall be proportional to the number of days involved provided that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the contract value of the work. The amount of compensation may be adjusted or set off against any sum payable to the Bidding Firm under this or any other contract with the JDA, Jaipur.

The Engineer-In-charge shall keep a watch as to whether the actual progress of work is as per the time schedule and in case the bidding firm defaults in achieving progress on works at intermediate stage as per this schedule and continue to do so even after 15 days after a notice in writing from the Engineer-In-charge, the Bidding Firm will render himself liable to action as provided above.

6. Time Line

S. No.	Description of work	Time Period
1	• Establishment of control points (BM) and grid points as per technical specifications. Minimum three Bench Mark points for each sector. • Ground Checking/verification.	One Month from date of W/O
2	• Collection of Land records, khasra maps/ cadastral maps, JDA commitments and sector plans. • Mapping of Khasra maps/ cadastral maps, JDA commitmentsand sector plans with control points and grid points. • Vectorisation of cadastral maps, JDA commitments and sector plans • Ground Checking/verification.	One Month from date of W/O
3	• Superimposition of sector roads, commitments on khasra and Google. • Checking and verification. • Creation of KML/KMZ files	Two Monthsfrom date of W/O
4	• Compiling of Land Details for ROW and commercial strip. • Core GIS, Linking of data • Checking and verification. • Uploading these details on server.	Three Months from date of W/O
5	• Demarcation of center line, road boundary & commercial strip as per JDA specifications on ground. • Ground checking and verification.	Four Months from date of W/O
6	• Initiating and completion of complete process of notification of land details in accordance to JDA Act1982 for ROW as "No Construction Zone".	Five Months from date of W/O
7	• Planning work of commercial strips • Documentation Work • Establishment of Project Server	Six Months from date of W/O

	• Uploading complete work on server as per the directions of JDA.	

7. **Termination**

If it is found that work is not being executed according to Terms of Reference or work is being delayed without sufficient reasons, the work may be terminated by JDA at any point of time after giving due notice without any liability on the part of JDA.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as or" the day and year first above written.

FOR AND ON BEHALF OF
JAIPUR DEVELOPMENT AUTHORITY **Witness**

FOR AND ON BEHALF OF
NAME OF BIDDER **Witness**

SCHEDULE - IX

LETTER OF UNDERTAKING / DECLARATION

(ON THE LETTER HEAD OF THE BIDDER)

We, M/s _____, hereinafter called as ***"Bidder"***, complete address (_____) hereby declare in favour of Executive Engineer (Sector Roads) on behalf of Jaipur Development Authority, Jaipur, hereinafter called as the ***"Authority"*** and agree to abide the term of reference and complete the job as per agreed bid conditions.

Signature of bidder/Authorized representative

SCHEDULE – X

PRICE SCHEDULE

Details of Total Work Sector Wise

SECTOR	160 ft. ROAD (in Mtr.)	200 ft. ROAD (in Mtr.)	300 ft. ROAD (in Mtr.)
SECTOR 29	6990	15480	
SECTOR 30	8475	9430	
SECTOR 31		8860	
SECTOR 32,33,44,46		7500	
SECTOR 34	3120	1805	
SECTOR 35	23250	1650	2820
SECTOR 36	10190	3900	4040
SECTOR 37	8850	4280	6850
SECTOR 38 TO 42	24575	8470	
SECTOR 43		29340	
SECTOR 44		30085	
SECTOR 46	8450	7215	
SECTOR 47		18615	
SECTOR 56 A	1460	4325	
SECTOR 56 B		4055	
SECTOR 56	750	9565	
SECTOR 63	3930	2970	2420
SECTOR 66	2580	7340	
SECTOR 67	2415	5730	4790
SECTOR 70	11565	3605	2830
SECTOR 73		4725	
SECTOR 74	2240		2700
SECTOR 75			4680
SECTOR 78			2790
SECTOR 80		13000	1600
SECTOR 81	1160	3055	4480
Total Length (Mtr.)	**120000**	**205000**	**40000**
Total Length (Km.)	**120**	**205**	**40**

Name of Bidder: _____

We have read the Job Description, Terms and Conditions for the below mentioned work:

"Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads". (NIB No. 08) and we quote our lump sum price for the work inclusive of all taxes but excluding service tax applicable as:

Rate to be quoted on the basis of Area of Operation/Area of Interest (AOI).

Area shall be calculated as :**(ROW + Commercial Strip) X length of Road**

Example: For 48m Road (ROW) for I KM length

Area of AOI: (48 + 2x24) x 1000 = 96000 Sqmarea

Rate Per Sqmt Area of AOI:

In Figures: Rs._____

In Words: Rupees _____

_____

Note: Service tax will be paid as per applicable law.

Signature of bidder	
Name with full address and contact no.	
E-mail ID:	

Signature of bidder/Authorized representative

SCHEDULE – XI

OTHERS (SPECIFIC)

(Bidder may furnish any other specific detail in this sheet)

Signature of bidder/Authorized representative

SCHEDULE - XII

Technical Specifications

1. SCOPE

I. Collection of Records

a. Land records.
b. Cadastral Maps.
c. Sector Plans.
d. JDA Commitments.
e. Master Plan Tiles.
f. GT Sheets of Survey of India of minimum possible scale.

II. Computerization of land records, Cadastral Maps and Sector Plans

a) Data entry/re-entry/data conversion of all textual records including mutation records and other land attributes data
b) Scanning of Cadastral maps
c) Digitization of cadastral maps
d) Digitization of Sector maps (If Required)
e) Integration of textual and spatial data
f) Creation of KML/KM2 files

III. Control Points Establishment (as per Fig.5,6, 9 &11)

a. Geo referenced Control Points (GCPs) (Minimum three each Sector)
b. Reference Station in the Centre of the Study Area (Each Sector)
c. Primary Control Points in the Centre(16KmX16 Km)
d. Secondary Control Points (4KmX4 Km)
e. Tertiary Control Points
f. Auxiliary Control Points
g. Creation of KML/KMZ files

IV. JDA Commitments Incorporation

a. Details from each Zone has to be collected
b. Creation of Vector Layer
c. Geo referencing
d. Superimposition on Base Map
e. Linking of required Data

V. Core GIS

a) Village index base maps by geo-referencing cadastral maps with satellite imagery/Google/Yahoo/Bing Maps, for creating the core GIS.
b) Integration of three layers of data: Point, Line and Polygon

i Spatial data from aerial photography or high resolution satellite imagery/Google/Yahoo/Bing Maps;

ii Survey of India and Forest Survey of India maps (GT Sheets);

iii GIS-ready digitized cadastral maps from revenue records. Once the basic khasra wise data is created by the States/UTs, seamless integration would be possible for micro and macro-planning and other relevant applications.

iv GIS-ready digitized Sector maps; and

v GIS-ready Master Plan Tiles

vi GIS-ready JDA Commitments

VI. Demarcation Work (As Per Fig.1)
VII. Preparation of Land Detail Plans
VIII. Notification of "NO CONSTRUCTION ZONE" as per JDA Act 1982
IX. Quality Assurance
X. Documentation, establishment of Project Server and Uploading Data

1. **Data Entry, Updation & Data Verification/Validation Process**

Land records data are available as
(a) textual data, and
(b) spatial data (cadastral maps).
All textual data including the records of rights (RoRs), mutation data and other land attributes data shall be updated and computerized.

1.1 GIS-ready digitization of cadastral maps and their integration with RoRs involve the following steps:

1.1.1 Scanning of the village map or part of the village map and feeding this scanned map into the computer to create a computer image of the map which is known as a **raster map**.

1.1.2 The next step involves going over the outline of the village boundary on the computer image of the map with the mouse and marking the outlines of each khasra. This process, known as **vectorisation**, provides the coordinates of each point on the map.

1.1.3 The software used in the digitization process creates a number of files. Each of these files pertains to a GIS-based layer and each layer consists of three files.

The GIS data are organized in layers. Each layer contains a subset of information that would be present on a regular map, such as

(1) Geographic information (where something is located),

(2) Attributes information (what is located at a specific location), and

(3) Its interlinking information.

The GIS layers are of three types: point layers, line layers & area layers.

2. JOB DESCRIPTION

1. Accurate scanning of original paper-based maps (generation of raster image of the map).
2. Digitization of khasras (drawing digital line on each khasra boundary of the scanned map).
3. Topology creation and closed polygon generation in area layer.
4. Creation of khasra numbers in polygon area layer.

5. Creation of rendered khasra numbers (RPN) and centroid point of each polygon in point layer. The centroid, which is the geometric centre point of the polygon, is where the khasra number is indicated. When the size of the polygon is too small for the number to be written within it, then the last one or two digits are written to represent the original number. This khasra number is called **rendered khasra number**.
6. Creation of in-situ lines, i.e., geographically fixed lines and point symbol (line and point layers).
7. Halka lines of village (i.e., boundary lines of the other two neighbouring villages) and sheet control points (fixed points on earth used while preparing the maps which are also used for future references), tri-junction pillars (pillars fixed at the meeting point of three neighbouring villages), permanent features or marks, old control stations used in earlier surveys, roads, railway tracks, rivers or streams, relay lines of acquisition plans (i.e., demarcation lines of the land proposed to be acquired – relevant only in land acquisition cases), etc., in .shp format of line, point and area layers.
8. Creation of DBF files for point/area symbol and bata (sub-divided) khasras (point and area layers).
9. Creation of GIF files of non-map features (sheet heading, north direction, legends, list of conventional signs, contents of certificate block).
10. Creation of text files in point layer.

3. **Stringent accuracy requirement:**

The digitized map should exactly match the original map, like a contact print, since the dimensions and area of khasras, or the whole village, are to be extracted from the map itself. As such, a difference of 0.25 mm of sheet measurement in 1:3960 scale between the original map and its copy, whether conventional or digitized, gives rise to a difference of about 1 metre on the ground. So, an accuracy of 0.25 mm or higher is desirable and tolerance may be treated as nil to 0.25 mm per metre.

4. Outputs of digitization:

4.1 Vectorised map can be stored in any open GIS format without any loss of freedom, as the conversion from one format to another is built into the software for raster to vector conversion. One of the popular open formats is SHP format, which is essentially a bundle of three formats to store spatial objects in .shp, text data attached to spatial objects in .dbf, and the format for linkage of .dbf and .shp, i.e., .shx. Many popular raster to vector digitization software are available, which can be used, such as R2V, Arch Info or AutoCAD map or any other compatible software with GIS format. These GIS files are to be provided by the digitizing agency/vendor to the Revenue Department in CD media along with a printout of the digitized map.

4.2 About 35 files are generated for a typical GIS-ready village map, namely:

Serial No.	File Name	Description
1.	ViNo.shp	Shape file for Village Map Sheet

2.	ViNo.shx	Shx file for Village Map Sheet
3.	ViNo.dbf	Dbf file for Village Map Sheet
4.	Symb. shp	Shape for Symbol in line layer
5.	Symb. shx	Shx file for Symbol in line layer
6.	Symb.dbf	Dbf file for Symbol in line layer
7.	Symp.shp	Shape file for Symbol in Point layer
8.	Symp.shx	Shx file for Symbol in Point layer
9.	Symp.dbf	Dbf file for Symbol in Point layer
10.	Bnd.shp	Shape file for Sheet Boundary, it denotes the extent of the sheet.
11.	Bnd.shx	Shx file for Sheet Boundary
12.	Bnd.dbf	Dbf file for Sheet Boundary
13.	Centroid.shp	Shape file for the points where to place the Khasra Numbers
14.	Centroid.shx	Shx file for the points where to place the Khasra Numbers
15.	Centroid.dbf	Dbf file for the points where to place the Khasra Numbers
16.	Img.shp	Shape file for the points where to insert the GIF files
17.	Img.shx	Shx file for the points where to insert the GIF files
18.	Img.dbf	Dbf file for the points where to insert the GIF files
19.	Vbnd.shp	Shape file for Village Boundary
20.	Vbnd.shx	Shx file for Village Boundary
21.	Vbnd.dbf	Dbf file for Village Boundary
22.	Scale.shp	Shape file for Scale of the Village Sheet
23.	Scale.shx	Shx file for Scale of the Village Sheet
24.	Scale.dbf	Dbf file for Scale of the Village Sheet
25.	Text.shp	Shape file for Texts of the Village Sheet
26.	Text.shx	Shx file for Texts of the Village Sheet
27.	Text.dbf	Dbf file for Texts of the Village Sheet
28.	sign.gif	Gif file for Certificate book
29.	Sym_bata.dbf	Dbf file for conventional signs or symbol along with the reference of bata khasra no.

30.	missp.dbf	Dbf file for Missing Khasras in Village Sheet
31.	first_last.dbf	Dbf file for First & Last Khasra Number for Village Sheet
32.	lege.gif	Gif file for legends
33.	name.gif	Gif file for Map Heading, i.e. it contains the District name, Village name, Idn etc.
34.	bata.gif	Gif file for list of bata
35.	Idn.tif	TIF image file for Village Map Sheet(raster image)

Sometimes, the legend is broken into more than one file. These files are named lege1.gif, lege2.gif, lege3.gif and lege4.gif. Accordingly, the total number of files varies from 35 to 38.

5. Methodology for digitization:

5.1 **The process involves**

I. scanning of maps to produce raster data,
II. checking the dimensional accuracy of the raster data,
III. garbage cleaning in the raster data,
IV. vectorising the raster data,
V. cleaning the vector data,
VI. topology building, i.e., building each khasra polygon as a totally connected entity, to ensure that all the polygons are closed and connected;
VII. data integration,
VIII. map composition from different layers, and
IX. Integration of regional language script as label.

Sl. No.	JOB DESCRIPTION	Responsibility
1	Putting label of village code, whether RS or LR map and the sheet number sticker on the map sheet	Department Employees (DA)
2	Handing over the labeled map to the vendor for digitization	DA
3	Scanning of original paper based maps.	Agency (EA)
4	Study of original paper map for dimension extraction. This is to measure the dimensions of any two points in the horizontal and vertical directions in the original paper map	EA
5	Adjustment of scanned raster map with the measurement as available in Sl. No. 2.	EA

6	Digitization of khasras using R2V, Arch Info or AutoCAD map or any other compatible software with GIS format.	EA
7	Cleaning up of map, topology creation and closed polygon generation using AutoCAD map software	EA
8	Creation of khasra numbers and attaching text database with the spatial data	EA
9	Quality checking to account for all khasras and khasra numbers available in the map	EA
10	Printing for dimensional accuracy-checking of all khasras	EA
11	Comparison of print with original for accuracy checking	EA
12	Refinement of digitized map with respect to Sl. No. 9 and repeat of Sl. Nos. 9 and 10 till desired accuracy is achieved	EA
13	Quality checking for correctness of khasra numbers as attached	EA
14	Creation of rendered khasra numbers (RPNs) and centroid points	EA
15	Creation of in-situ lines and point symbol	EA
16	Quality checking to ensure that all symbol are considered and coded correctly	EA
17	Creation of DBF files for point/area symbol and bata khasras	EA
18	Creation of GIF files	EA
19	Handing over the print copy for checking correctness	EA
20	Checking of print copy with the original	DE
21	Handing over the soft copy	EA
22	Soft copy check (availability of files - 35-38 numbers)	DE
23	Generation of complete map from the files available and also digital RoR database using software developed by the NIC	DE
24	Printing of composed map in 120 GSM paper for preservation	DE
25	Software checking of areas extracted digitally with that available in the RoR for each khasra. This provides an error report showing khasras whose areas in the RoR do not match with the areas extracted digitally.	DE
26	Error report is sent to districts for review and correction	DE
27	Integration of RoR data with spatial data using the software developed by the NIC (explained in detail below)	DE
28	Map and record correction through the software	DE

	developed by the NIC (explained in detail below)	

5.2 **Scanning and dimensional accuracy**

5.2.1 The original map is scanned to produce the raster form. For cadastral map, scanning may be done in 400 dpi (dots per inch). Special attention should be given to see that the map is not deformed dimensionally. For this purpose, —X (cross) marks are placed at corners of the original map before scanning. In the next step, the lengths between the —X marks of the original map are compared with those of the scanned map to check whether any differences exist. Finally, raster editing is done for the elimination of unwanted patches in order to enhance vectorisation of the raster data.

5.2.2 Dimensional accuracy of the raster data implies total correspondence between the raster data and the original map. The following procedures are used to achieve dimensional accuracy:

I. Checking for expansion.
II. Checking for contraction.
III. Checking for translation.
IV. Checking for rotation.

5.3 **Vectorizing, topology building and data integration:**

5.3.1 The raster data may be converted to vector data using raster-to-vector converting software. The Semi-automated method is preferable, because traverse lines may have some breaks which can be corrected through this method during the process of vectorisation.

5.4 **Testing of correctness of the digitized map:**

5.4.1 **Map composition and query retrieval:**

Note: IMPORTANT

1. The —.shp , —.shx and the —.dbf files for the village containing the area and the line layer should be named as —<VINo>.shp , —VI.shx and —VI.dbf respectively. Thus, if the VI No. of a village is 100, then the three abovementioned files should be —100.shp , —100.shx and —100.dbf respectively. The files are to be placed in the —VI No. subdirectory under the corresponding —PS Code directory in the following format:

<PS Code> \ <VI No.> \ <VI No>.shp
<PS Code> \ <VI No.> \ <VI No>.shx
<PS Code> \ <VI No.> \ <VI No>.dbf

Thus, if for a particular village, the PS (Panchyat Samati) Code is 50 and the VI No. is 100, then the files corresponding to the layers of that village should be organized as follows:

50 \ 100 \ 100.shp
50 \ 100 \ 100.shx
50 \ 100 \ 100.dbf

2. If the village map comprises of more than 1 sheet, then the files for all the sheets are to be given the same names and as per the convention mentioned in point 1 above. However, in order to avoid controversy, the files must be kept in different subdirectories denoting the sheet number under the —VI No directory, which itself is kept under the —PS Code directory. Thus, if the village map with VI No. 100 (see the example in point 1) comprises of 2 sheets then the file should be organized as follows:

For sheet no. 1	For sheet no. 2
50 \ 100 \ 1 \ 100.shp	50 \ 100 \ 2 \ 100.shp
50 \ 100 \ 1 \ 100.shx	50 \ 100 \ 2 \ 100.shx
50 \ 100 \ 1 \ 100.dbf	50 \ 100 \ 2 \ 100.dbf

3. The layers for the images and the symbol need not be qualified with their corresponding VI Nos., but they must be kept in the same directory along with the layer files mentioned in the above two points. The files will be named as centroid.shp, Symp.shp, Symb.shp, scale.shp, bnd.shp, mbnd.shp, img.shp, Sym_bata.dbf, first_last.dbf, missp.dbf, name.gif, lege.gif, bata.gif, sign.gif, etc.
4. The attribute field giving the khasra number of each khasra of the village is a compulsory field. It must be a 5-character field and have the name —khasrano .
5. The list of conventional symbols for the symbol as followed by the department should be referred whenever required.
6. For symbols, which are not —in-situ , the points of insertion of the symbol are to be given at the approximate center of the symbol in the point layer for symbol.
7. The scale for each map should be digitized and provided as a separate line layer along with the other layers for the village. The base name of the files for the line layer for the symbol must be —scale , i.e., the —.shp file for the line layer must be —scale.shp . The names of other necessary files (.shx, etc.) for the same line layer must be given accordingly.
8. The values in the different attribute fields in the various layers should be left justified.

6. Integration of map with RoR

6.1 Each khasra of land is represented on the digital map as a closed polygon. Such polygons are identified by a unique 5 digit number, that is, its khasra number. In the RoR database, such khasra numbers are referenced. This provides a basis for integration of digital map with the digital RoR data.

6.2 The following is the general description of the scope of the work of digitization of the cadastral village maps, geo-coding and their integration with textural data (RoR):

I. The village cadastral maps will be traced on to tracing film/paper wherever required, scanned and grid-corrected.

II. These maps will then be vectorized and labeled, khasra-wise.

III. The khasra-wise information will then be attached uniquely to identify with the help of key identifier to obtain the details of each khasra.

IV. A grid-corrected map of the original sheets has to be provided in hard copy format.

V. The sheets will be edge-matched, mosaiced, and the topology created as per the conventions specified.

VI. The mosaiced digitized maps will then have to be converted to GIS format and transformed using ortho-rectified geo-coded High Resolution Image/Google/yahoo/Bing maps.

VII. The accuracy standards should be maintained as per the pre-specified spatial framework, projection system, co-ordinate units, tolerances, feature-coding scheme, etc.

VIII. The deliverables have to be provided in proper format, structure, precision and metadata, as specified, so that they are ready for use with other revenue-related activities.

7. STEPS FOR DIGITIZATION OF CADASTRAL VILLAGE MAPS

The process of digitization can be summarized in following steps :

1. Collection of analog cadastral village maps (sheet-wise)
2. DQC-1 (Input data evaluation)
3. Tracing or re-production of the analog map
4. Sheet indexing and scanning of the analog maps (converting analog to raster cadastral images)
5. DQC-2 (check DPI, format, quality, speckle removal and cleaning)
6. Grid correction of the scanned (raster) map
7. DQC-3 (grid overlay checking with scanned map)
8. Feature abstraction from the scanned map
9. DQC-4 (check for the accuracy of the type, location and attributes)
10. Layout and printing hard copy for evaluation by the JDA (EXPERT COMMITTEE)
11. DQC-5 (detailed checking of the digitized features by the EXPERT COMMITTEE)
12. Incorporation of the corrections suggested by the EXPERT COMMITTEE
13. Sheet mosaicing of a village
14. DQC-6 (feature continuity and attribute carry forward)
15. Conversion of the digitized data into topologically-correct GIS data format
16. DQC-7 (checking for GIS feature conversion, attributes, null and duplicate errors)
17. Final deliverables (hard copy print and GIS data for geo-coding)
18. Metadata preparation

7.1 Collection of the sheet-wise analog cadastral village maps

Before executing the project, availability of sheet-wise cadastral maps have to be ascertained. The maps should be up-to-date and in good condition. The condition should be such that it can be scanned through a contact (roller) scanner or a flat-bed scanner (prefer flat-bed scanner). The DQC-1 has to be performed at this stage before it is sent for scanning. The quality check procedure will include the condition of the map – it should not be a cloth mounted, nor be torn or ragged, and not have too many folds. The control points (tics) should be available. The features of the map should be clear and distinguishable. Khasra number (khasra no.) should be distinct and readable. All symbols (*symbol*) should be distinct and properly understandable. Once found acceptable on all the above-mentioned characteristics, the sheet is tagged suitable for scanning.

7.2 Tracing or re-production of the analog map

If the sheet is not suitable, then the sheet has to be sent for tracing (preferably on a 75-100 GSM mylar film) or reproduction of the sheet. The reproduced sheet has to be quality checked (DQC-1) and finally sent for scanning. The maps are to be traced using the following specification:

- Tracing to be done on 75 micron polyester film.
- Tracing should be done with 0.1 pen using black ink only.
- All the features should be traced.
- The labels should be placed neatly in the center of the feature with free hand drawing.
- In case the feature is too small to accommodate the label, it should be placed at a convenient location with a marker arrow.
- The heading and legend data should also be traced along with scale, north arrow, sheet no., etc. along with map border.

7.3 Sheet indexing and tics (tick-marks) high lighting

7.3.1 All sheets have to be indexed with appropriate index numbers. The index number is to be generated using the village metadata with respect to the various administrative codes (State, district, tehsil, and revenue inspector/patwari/thana/village and village code). The index number should be a unique number with information of the administrative hierarchy of the village. A typical example of index number may be 120501007035101 (DDTTRRHHHVVVVnn).

7.4 Scanning of the analog maps (converting analog to raster cadastral images)

7.4.1 The cadastral maps are scanned using AO size raster scanner. While scanning, the important parameter -- DPI (dots per inch) -- has to be precisely set. The DPI is based on drawing characteristics and information required. In general, the following minimum specifications should be adopted while scanning the cadastral sheets: Maps should be scanned at 100-200 DPI Black/White (8 bit gray tone) mode depending upon the density of the features. If all the details are not picked up during scanning, the scanning parameters should be changed to 400 DPI on 24-bit color. While scanning, the sheet has to be fed in straight upright position and smoothened so that any fold is not generated while scanning. In the flat-bed scanner, the map has to be laid flat on the glass, smoothened and scanned; and bulging should be avoided.

7.4.2 After successful scanning, the DQC-2 procedure has to be followed. The raster image of scanned map should be stored in TIFF format (*.tif or tagged image format). The scanned map orientation should be upright (north oriented). The scanned map should be cleaned and free from noise (i.e., unnecessary pixels or darkness in the image). To remove the noise, de-speckling should be applied. The measured length and width within the bounding box of the scanned map should be +/-0.1% of the map manuscript measurements. The scanned image should not be skewed or warped; if there are any, it should be de-skewed or necessary correction should be applied, or it should be re-scanned. The scanned image should not have any line dropouts or stretched pixels; otherwise, it will have to be re-scanned. The scanned file will take the name of map index name, such as **I120501007035101.tif**

7.5 Grid correction of scanned cadastral map

7.5.1 Even after appropriate quality checks during the scanning process, there can be few errors due to machine specification and scanning techniques. There can be also some distortion in the input manuscript (analog cadastral map). The scanned map may carry forward the errors due to differential scanning, wear and tear or differential shrinkage/expansion. The net result may be non-uniform scale at parts of the map, deflection in north orientation, etc. To make the map plani-metrically accurate, rectifying the map with the vector grid is suggested.

7.5.2 Prior to the correction, selection of the appropriate grid has to be made. The grid is scale-dependent. Generally, the grid found on 1:3960 (16 =1mile) will be placed at a distance of 10 zaribs (i.e., 50.8 cm or 2.00000008 inch); the maps with 1:4000 scale will have a metric system grid and will be placed at a distance of 25 cm.

Each sheet will have 10 X 14 grid blocks in 1:3690 scale, or 20 X 28 grid blocks in 1:4000 scale sheet. After ascertaining the scale of the maps under consideration, appropriate mathematical grid has to be generated.

7.5.3 After selecting the appropriate grid, the cadastral scanned maps have to be registered with the grid.

- **Gridlines and tics are available** - The highlighted tics in the scanned map have to be stitched/tagged with its appropriate intersections of the gridlines of the mathematical grid and then transformed.
- **Four corner tics available** – The highlighted four corner tics in the scanned map have to be stitched/tagged with its appropriate intersections of the gridlines of the mathematical grid and then transformed.
- **No gridlines and tics available**– This needs to be executed in two steps:

  (a)The transferred tics before scanning are to be stitched/tagged with its appropriate intersections of the gridlines of the mathematical grid which was used to transfer the tics. Then first transformation is made. This will remove the scanning distortion, if any.

  (b)Comparing the available graphical scale of the map with the mathematically generated graphic scale of the same type and then registering the scale and transform. This may correct the distortion of the map scale, if any.

7.5.4 The process should eliminate the possible warping effect of cadastral maps. High accuracy and low residual error are to be achieved in grid correction of cadastral images. The transformed rectified cadastral scanned image is termed as registered scanned cadastral map and can take the name such as R120501007035101.tif. The quality check DQC-3 is performed on the image to see whether the gridlines overlay with the tics of the map. If the errors are not within the acceptable limits, re-registration has to be performed.

7.6 Feature abstraction from the grid-corrected scanned cadastral images

7.6.1 Template creation: Before starting the vectorization, a standard template has to be created. In the template, the layer name, line type, color and thickness for each feature (e.g., khasra, roads, canals, river, etc.) present on the map is standardized. Different graphical representation (symbol-*symbol*) in the map is to be standardized as point features with proper layer name, symbol and colour. This maintains uniformity in all the map outputs. The template also holds various mathematical grids, graphical scales, and other map features like north arrow, boundary lines, headings and other permanent annotations. A symbol library is created, which contains the various symbols shown in a village map. The symbol library gets depicted in the legend of the template. The main intention behind this is to maintain the uniformity over all the village maps that are digitized. The template should also address the font type of the annotation in the maps. Generally, UNICODE system is adopted with proper font for depicting the local language script.

7.6.2 Feature abstraction is the process of capturing the point, line, and polygon features as vectors and text as annotation. The grid-registered scanned cadastral map sheet is displayed in the background, the required environment settings for digitization are set, and the required features are captured into different layers (based on the feature type). During digitization, attributions to the features will also be done. Only heads-up manual digitization should be carried out. Auto-vectorisation should not be attempted. Error should be within permissible limits for digitization, viz., weed tolerance, coordinate movement tolerance, sliver polygon tolerance, coordinate unit, planimetric errors, fuzzy tolerance, etc.

7.6.3 The uniformity in layers, line type, color, annotation, etc. during digitization will be maintained by using the template, as described above, to capture all the features in their respective layers. The final output of this process will be a digital map which will be a true copy of the paper map, along with necessary legends, scale bar, north arrow, borders, etc.

7.6.4 Once the digitization process is over, the DQC-4 is performed. This process assures the features abstracted from the scanned map sheets are true in its type (i.e. point, line or polygon), accurate in location and its attributes. Tag should be maintained wherever the feature/annotation could not

be read along with null and duplicate errors. The errors have to be reported in the draft output map, which will be sent to the EXPERT COMMITTEE for through checking.

8. Guidelines for feature digitization/abstraction

8.1 The general specifications for digitization are given below:

I. The data is to be digitized using heads-up digitization.
II. The features are to be captured such that the polygon features are put in one layer, the line features are in another layer while the points are in a different layer.
III. The lines are to be digitized as polylines only, coincident lines are to be digitized once and copied to appropriate layer.
IV. Feature specific codes are to be assigned uniquely as given in the format.
V. The data should be topologically correct for each of the layer.

8.2 The accuracy requirement and specifications for each of the type of features is indicated below:

8.2.1 Polygon feature specifications

- The khasra boundary should be digitized in such a manner that the resulting vector line falls in the center of the raster data image element being vectorized.
- The khasra boundaries are generally straight, hence should be digitized using 2 nodes/vertices in keeping with the shape of the polygon.
- The feature should be digitized in such a manner that there is no overshooting or undershooting of arcs, or duplicate arcs.
- The feature should be captured with specked symbol.
- The feature should be digitized with minimal number of vertices while, at the same time, maintaining the smoothness or angularly of the lines, as the case may be.
- The feature should be a closed polygon without any dangles or sliver.
- Each polygon should have a unique PIN as per the coding scheme indicated below.
- The tolerance values for arcs, node snapping and vertices should be such that the features snap within the pixels defining that feature and do not snap outside.
- All features like khasras, roads, rivers, etc., which form the polygons, are to be digitized and coded as per the coding scheme.
- The connectivity of the rivers/roads is to be maintained and should not be disjointed.
- The label (khasra no.) should be placed in the center of the feature.
- Nodes are to be added wherever symbols are depicted on the khasra boundaries.

8.2.2 Point feature specifications

The features shown on maps as points, like wells, temples, trees, etc., are to be digitized as point features, for which the digitizing rules and coding scheme are given below:

- The feature should be digitized as a point placed at the center of the raster image defining it.
- There should only be one point at one location.

- Each feature should have a unique ID.

8.2.3 Line feature specifications

The linear features shown as single line arcs on the map or linear double line features or symbols like rivers, roads, pipelines, etc. are to be digitized and compiled into the line layer for the village. The single line arc features, whether shown as continuous lines or broken lines, are to be captured from the map image. In addition to this, the double line roads, rivers, pipelines, etc. from the polygon coverage are also to be put into the line coverage. The feature coding guidelines are given below:

- The river/roads depicted on the image represent the outside edges in case of double line features and should be digitized as such. The resulting vector should not deviate from the pixels defining it. These features should be captured only once and copied into the appropriate layers before building the topological relationships.
- The feature should be vectorized in such a manner that the shape is captured and retained as it is.
- The feature should be vectorized using optimum member of nodes/vertices so that the shape is retained and does not appear jagged.
- The continuity of the features such as rivers, roads, etc. must be maintained across the map sheets.
- At crossings, the features should be digitized with or without intersection, as the case maybe.
- In case of single line features, they should be captured as a single continuous feature from one end of the feature to the other end without break.
- In case of double line features the centerline should not be digitized. This will be represented by appropriate symbol.
- There should not be any gap between two connecting features, nor any over-shoots; the features should be snapped to connecting features.
- The features should be coded as per the coding scheme.

8.2.4 Attribute data specifications

Attribute data for each khasra is attached in the text layer. The khasra number and khasra land use are the two main attributes that are linked to the village polygons. Khasra number is the primary key for linking of RoR details.

9. Layout and printing hard copy for evaluation

9.1 Hard copy color output would be generated using the template decided upon by the JDA concerned for the purpose, as described above. The first draft hard copy is generated at the original scale of input map for each sheet. Good quality paper is used for printing the digitized map. The color scheme and paper thickness should be according to the standards specified for printing and is to be decided by the JDA.

9.2 The officers from the concerned Zone dealing with land records/maps should carry out 100% validation of the hard copy color output (DQC-5). The output will be validated completely for physical

dimensions, khasra size, shape, numbering, feature location and coding, annotation, etc. The corrections are marked on the output and are to be incorporated in the digitized digital data.

9.2.1 Quality check guidelines on hardcopy output by JDA

Input:

- Khasra output at A0 size generates at the true scale A3 size output depicting zero fills and duplicate labels.

Process:

- The quality check is carried out on total population (100% data) and there is no sampling involved in this quality check.
- Check for the color scheme in the hardcopy output with reference to the template designed for this project
- Check for content, size and color of the various elements of the map Check for the logo details:
  - Group number
  - Village number
  - Bandobust number
  - Village name
  - Halka number
  - Halka name
  - Revenue Inspector (RI) circle name
  - RI circle number
  - Tehsil name
  - District name
  - Year
  - Scale
  - Sheet number
- Check for legend details
- Check for title disclaimer details
- Project name ○ Map title
- Generated for ____
- Generated by _____
- Check for sheet index
- Check for north arrow
- Check for the dimensions of the grid cells and the map with reference to the original map used for digitization
- Check for feature matching
- khasra boundaries

- khasra number
- khasra attributes – zero fills, duplicate labels
- part khasras, combined khasras, etc.

  The features to be checked are:

  - Permanent khasra boundaries, temporary khasra boundaries, paddy bund boundaries, village boundaries, etc.
  - Drainage and water body details
  - Road network, rail network, cross drainage details, etc.
  - Traverse lines and points details
  - Forest boundary details
  - Historical, religious places, etc.
  - Amenities details
  - Settlement locations, etc.

- After validation by the EXPERT COMMITTEE, check for the signature of the validation officer from EXPERT COMMITTEE for authenticating the quality check
- Check for the list of all khasra numbers provided on A3 size with reference to the details available from the EXPERT COMMITTEE

9.2.2 Incorporation of the corrections suggested by the EXPERT COMMITTEE

The draft hard copy color output, checked and corrected in all aspects by the JDA is compared with the digital data. The corrections suggested by the JDA/EXPERT COMMITTEE are incorporated in to-to. Special checks have to be performed to certify the incorporation of the error-corrections. After the correction of each sheet, the sheets pertaining to each village is mosaiced.

10. Sheet mosaicing of a village

Village-level mosaicing is done by joining the individual map sheets of the village to form a complete village map. Edge matching is done by bringing two different map sheets of the same village into the same file and matching their edges with reference to the grid and the features on the maps. Continuity should be maintained for all the features at the edges and its attributes. Care is taken to eliminate all dangles (undershoot/overshoot) and label errors. On-screen checking is done to check the common edge between the mosaicing maps. One has to ensure the completeness of the polygon features such as khasras, continuity in line features such as rivers, roads, etc. Duplicate features along the edge, especially symbols have to be removed. Finally, topologically correct features for the entire village have to be generated and quality checked. The DQC-6 quality check procedure is for ascertaining the feature continuity and attribute carry forward.

11. Conversion of the digitized data into topologically correct GIS data format

11.1 After mosaicing, the digital data is converted into topologically-corrected GIS data features. The GIS data will have separate point, line, polygon and annotation features. The strength of the GIS features is the establishment of the spatial relationships within and between the various features

with respect to position, containment, contiguity, proximity, adjacent and intersection. After establishing the topology, the attribute data in the standard structure should be filled up. The unique primary key and the foreign key are generated. The completeness and accuracy of the attributes are checked by both display and automatic S/W method.

11.2 Null and duplicate attributes lists are generated, both as text file and spatial data outputs. This forms part of the DQC-7 procedure. The error report is again evaluated and checked. Wherever possible, corrections are incorporated, or else tagged with appropriate error codes. The data, at this stage, is ready for the further process of overlaying on the satellite data and query.

12. Final deliverables (hard copy print and GIS data for geo-coding)

The final hard copy print is taken on a paper of specified thickness (preferably 150 GSM of A4/A3 & A1 size) of the actual sheet size for archival. The GIS data in prescribed format has to be stored in the central data center and server and used for further processing of linking with the RoR data.

13. Metadata preparation

13.1 The system and procedures of database generation should evolve a strong metadata, for which the metadata standard has to be designed. The objectives of the standard are to provide a common set of terminology and definitions for the documentation of digital geospatial data. The standard establishes the names of data elements and compound elements (groups of data elements) to be used for these purposes, the definitions of these compound elements and data elements, and information about the values that are to be provided for the data elements.

13.2 The major uses of metadata are:

- to maintain an organization's internal investment in geospatial data,
- to provide information about an organization's data holdings to data catalogues, clearinghouses, and brokerages, and
- to provide information needed to process and interpret data to be received through a transfer from an external source.

13.3 The information included in the standard are based on four roles that metadata play:

- Availability -- data needed to determine the sets of data that exist for a geographic location.
- Fitness for use -- data needed to determine if a set of data meets a specific need.
- Access -- data needed to acquire an identified set of data.
- Transfer -- data needed to process and use a set of data.

Finally, developed metadata will store information pertaining to the each cadastral village map layer and tabular data available from all sources. Future metadata should also describe the updation rate, time and history of the land transaction.

14. QUALITY ASSURANCE

14.1 A comprehensive quality control program for ensuring the quality of data has to be followed based on the criteria provided and permissible accuracy. The measure of accuracy derived based on the

allowable limits would fall under one of the following heads, viz., physical accuracy and logical accuracy.

14.2 Physical accuracy

In any data conversion, some amount of variations would creep into the data sets depending on the type of digitization procedures followed and the subsequent projection and transformation methods followed. Following tests would be made to ensure that all the features in a dataset are within the permissible limits:

Point features

- Location of a feature with reference to a standard layer would be the same or within the prescribed limits.
- A feature carries the same information after migration.

Line features

- Variation in length of a line segment selected based on an attribute or combination of attributes.

Polygon features

- Variation in the number of lines that makes the polygon, their length (perimeter) and subsequently amounting to area.

14.3 Logical accuracy

This accuracy corresponds to completeness and correctness of data when a data set is analyzed. Following tests would be performed to ensure the logical accuracy of the data sets:

An attribute query run on the datasets should give a consistent result in terms of

- Number of features selected;
- The content of the features selected.

Any data set resulting out of analysis of two or more datasets should be logical. Any spatial query run on the datasets should give the same result in terms of

- Number of features selected;
- The content of the features selected.

15. DATABASE DESIGN & STANDARDS

15.1 A data design provides a comprehensive architecture for the database to be viewed in it's entirely and evaluated as to how the various aspects of it need to interact. A good design results in a well-constructed, functionally- and operationally efficient database that –

- Satisfies the objectives and supports requirements.
- Contains only required data without redundancy.
- Organizes data so that different users access the same data.
- Accommodates different versions of the data (i.e., allows manipulation and updates).
- Distinguishes applications that maintain data from those that use it.

- Appropriately represents codes and organizes geographical features and their relationships (topology).
- Support interoperability.

15.2 Database standards are an important element of the database design. Standards enable applications and technology to work together, they encourage efficiency and effectiveness, help reduce costs, protect investments in data against technological change, and lead to availability of accurate, compete and current data. Tools, applications and data affect each other, and the standards are established with this condition.

15.3 Database construction guidelines

The digital database prepared under this work should form the base of any further activities, viz., revenue data management (RoR), spatial data management (geo data base), development and updation of land records, etc. Strong database standards, supported with the link to survey/resurvey procedures and future operational and maintenance procedures, are a must. This helps in backward and forward integration of the existing database with the ever-changing database management technology. Broadly, the database construction guidelines can be divided into four major categories under the present scope of digitization of cadastral maps, overlay on the satellite data/Google/Yahoo/Bing maps and integration with textual data:

1. Satellite image database preparation.
2. Digitization (analog to digital conversion) of cadastral village maps.
3. Geo-referencing of digitized GIS data with satellite image/Google/Yahoo/Bing maps data.
4. Metadata generation and achieving of the database for transactional use.

15.4 Procedures for building the database

The elements of the database are to be created as per the standards herein and the vendors/agency/service provider has to take care that digitization is as per the standards. The inputs are subject to validation at each stage and will include qualitative as well as quantitative checks for input and output accuracy.

15.4.1 The creation of a clean digital database (topologically-corrected and geocoded) is the most important and complex task upon which the usefulness of the database lies. Two aspects need to be considered here: one is the geographic data necessary to define where the khasra of land or, for that matter, any other feature is located, and second is its unique identification for associating attributes that link to the records. At every stage, there should be necessary and proper data verification to ensure that the resultant database is as free as possible from error. Errors would generally be of the following types:

- Spatial data are incomplete or double.
- Spatial data are in the wrong place.
- Spatial data are at the wrong scale.
- Spatial data are distorted.
- Spatial data are linked to wrong attributes.

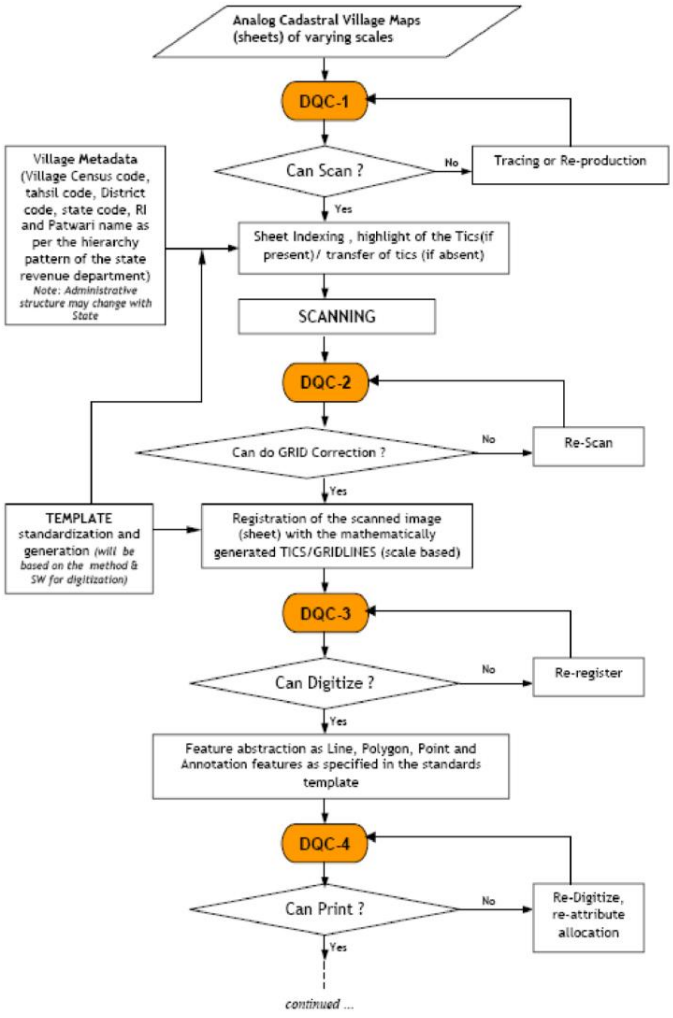
- Non-spatial data are incomplete.

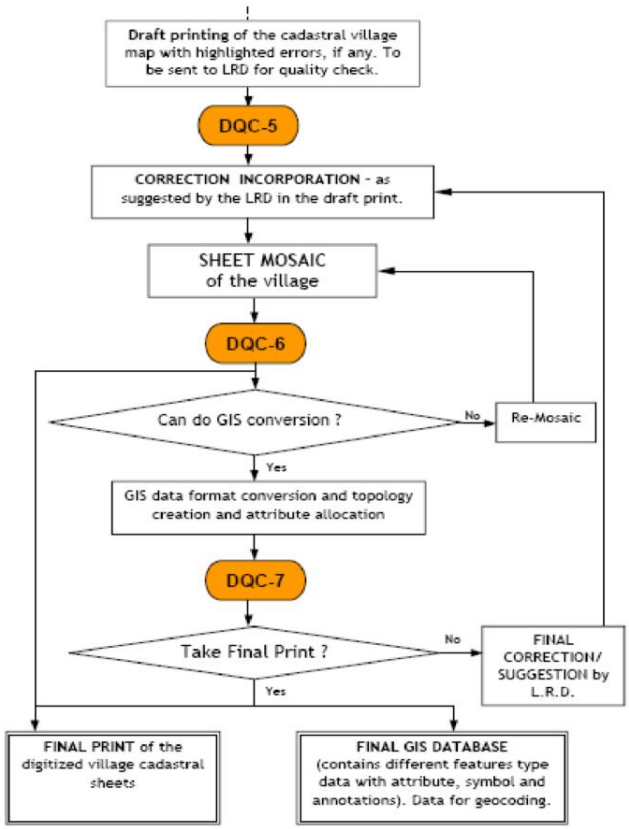
15.5 For evaluating the digital data, the following guidelines/parameters would be followed:

1. Assuring that appropriate digitization methods with proper template, accuracy, precision and quality check procedures are followed.
2. Verification of the co-ordinate system (in CAD); projection and datum (in geo data base).
3. Checks for digitization errors like silvers, dangles, and topology rules.
4. Attribute verification providing the correctness of feature coding by listing it out and comparing with the manuscript maps. Randomly checking a few khasras for shape and form listing of polygons with null and duplicate attributes.
5. Verification of edge-match with adjacent sheets and villages by displaying them side by side.
6. Comparison of the total area of the village by aggregating the khasras, etc. visà-vis the area reported in census handbooks or available with the Land Records Department in the RoRs.
7. Verification of geo-referenced control points (GCPs) and RMS (Root Mean Square) error for the transformation model.
8. Checks for mosaicing of maps and overlay on the satellite data.
9. Attachment of appropriate metadata at all stages of the database preparation.

Note: In case Satellite data is not available then Google/ Yahoo/ Bing Maps or any other WMS maps may be used.

Flow chart for work process:





Digitization Quality Check (DQC 1 to 7) :

DQC-1 : Visual quality check of the analog sheets for visibility, readability, folds/straightness and scan worthy.
DQC-2 : Checking of the digital scanned sheets for DPI, format, quality, speckle removal, scan lines dropout, feature clarity and GRID correction worthy.
DQC-3 : Final checking of the GRID corrected scanned image with overlaid mathematical grid (scale dependent) and approval for the final feature abstraction.
DQC-4 : Quality assurance of the features abstracted from the sheet for its type, location and attribute. Also checking has been done for the unread attributes, features, null attribute and duplicate errors, if any.
DQC-5 : Detail quality checking of the digitized sheet be the Land Record Department (LRD) with detail error reporting and suggestion, if any.
DQC-6 : Checking for the feature continuity and attribute carry forward or loss of features of attribute during the mosaic process.
DQC-7 : Checking for the topologically corrected GIS feature conversion, its attribute allocation, duplicate IDs and Null IDs.

16. Control Point Establishment (as per Fig.5,6,9 &11)

1. **Tertiary control point**

The **tertiary control point** should be used as the reference station for DGPS. The tertiary control point and auxiliary point should be used for TS survey.

The sequence of steps of the DGPS survey is given below:

- Identification of the reference station in the Centre of the study area
- GPS data collection, using dual frequency geodetic GPS receivers, for 72 hours
- Determining the reference station coordinates with reference to International Geodetic Survey (IGS) stations
- Identification of GCP locations in the satellite image
- Collection of GPS data at GCP locations for 3 hours
- Determining the GCP coordinates, with reference to the reference station, in DGPS mode
- Quality verification of GCP coordinates
- All the control points should be based on datums given below:

Horizontal Datum: WGS-84 (i.e., the latest version of the World Geodetic

System standard for use in cartography)

Vertical Datum: MSL, i.e., the Mean Sea Level.

2. **Primary Control Points**

2.1 Horizontal

The primary control points of the Survey of India (SoI), provided by static GPS observation (72 hours) with dual frequency GPS receivers, should be used. The primary control points of the SoI have been post-processed with precise ephemeris adjusted with the help of Bernese s/w to the ITRF co-ordinate system. All the secondary and tertiary control points should be connected to the primary control points of the SoI, to ensure connection to the National Framework.

2.2 **Vertical**

The precision Bench Marks of the SoI should be used as primary vertical control.

3. Secondary Control Points

3.1 Horizontal

The secondary control points of the SoI (Survey of India) should be used, wherever available. In areas where the requisite density of secondary control points (16 km) are not available from the SoI, these should be provided.

i. **Best places for affixation:** In protected areas like premises of government buildings including school buildings, veterinary hospitals, etc. and other protected structures, etc. The selected site should be open and clear to sky with a cut off angle of 15º. High-tension power lines, transformers, electric sub-stations, microwave towers, high-frequency dish antennas, radars, jammers, etc., which interfere with GPS signals, should be strictly avoided.

ii. **Densification:** 16 km average

iii. **Instrument to be used:** Dual-frequency GPS receivers.

iv. **Accuracy levels required:** 1 cm as determined by the residuals of the network adjustment with 95% confidence interval.

v. **GPS network design:** Secondary control points should be observed with a geometrically sound network plan, connected to primary control points of the SoI.

vi. **Schedule of observations:** Observations should be scheduled with proper mission planning, considering the optimum availability and geometric dilution of precision (GDOP) of satellites (i.e., geometric strength of satellite configuration on GPS accuracy). Minimum observation time should be 3 hours.

vii. **Monumentation of secondary control points**

a. Rock-stone or Sand-stone 23*23*75 cm or RCC.

b. The control point should be 15 cm above the ground and 60 cm inside the ground.

c. The control points should be fixed to the ground using at least 15 cm of cement block.

d. Monuments shall bear a triangle on top with a plummet hole in the middle and a 15 cm steel rod inserted (flush with concrete surface).

e. The control point number should be inscribed on the monument.

3.2 Vertical

All the secondary control points should be connected by spirit-leveled heights. The leveling lines for such connections should terminate at precision control points of the SoI and all errors adjusted within them.

Permissible error for leveling line: 0.025 $\sqrt{k}$ (in metres), where k is the length of leveling line in km.

4. Tertiary Control Points

i) **Distribution:**

These shall be governed by the photogrammetric requirements of the block of imagery/Google/Yahoo/Bing Maps for which photogrammetric survey is to be carried out. The distribution and location of horizontal, vertical and full control points should be decided after preparing the photo-index with the help of input images.

ii) **GCP selection criteria:**

The selection of location for a control point on the photograph will depend on the identification of the image point and the measurement characteristics of the image point. But, at the same time, they should also meet the horizon parameters (15º cut-off angle). Thus, the criteria for selection of such points should be:

i GCP should be precisely identifiable on aerial imagery/Google/Yahoo/Bing Maps as well as on the ground.

ii GCP should be a sharp point on image and ground.

iii The selected GCP shall be open and clear to the sky, without any obstruction to the sky.

iii) **Post-pointing:**

All tertiary control points should be post-pointed on imagery/Google/Yahoo/Bing Maps (i.e., the points should be identified on the image), preferably in softcopy. If post-pointing on hardcopy is to be done, the control point should be post-pointed at full resolution. In addition, a sketch magnifying the vicinity of control points and their detailed description should be prepared on the ground, to aid the photogrammetric operator.

iv) **Additional points:**

In addition, tertiary control points may be provided on structures like village boundary tri-junction or bi-junction, existing govt./non-govt. buildings like gram panchayat offices, school buildings, veterinary hospitals, etc., as per the field survey requirements.

v) **Instrument :**

Single/Double-frequency GPS, Total Station

vi) **Accuracy levels required:** 5 cm

vii) **Monumentation of tertiary control points**

Since the location of control points will be governed by photogrammetric requirements of the block of images and the selection criteria of the GCP, it will not be possible to construct a monument at most of the tertiary control. However, some additional control points provided with the objective of further survey by TS may be monumented. The specifications of monumentation are as given below:

a. Pillar should be of rock-stone or sand-stone 15*15*45 cm.
b. The pillar should be 10 cm above the ground and 35 cm inside the ground.
c. The pillar should be fixed to the ground using at least 15 cm of cement block.
d. Monuments shall bear a triangle on top with plummet hole in the middle and a 15 cm steel rod inserted (7.5 cm inside and 7.5 cm outside).
e. Provision of a strip of granite to put GPS reading on.
f. The control point number should be inscribed on the monument.
g. In case some modern technology develops later, the details will be circulated separately.

viii) **GPS network design:** Tertiary controls should preferably be observed as triangular offsets. Single offsets should generally be avoided.

ix) **Schedule of observations:** Observations should be carried out with proper mission planning. Minimum observation time should be 45 min to 1 hour.

x) **Vertical control:** Single GPS offset upto 5 km from secondary vertical control may be allowed for connection of GPS heights in WGS 84 datum to MSL heights.

However, such offsets should not be extended.

5. Auxiliary Control Points

i) **Best places for affixation**: Each secondary and monumented tertiary control point shall be paired with one auxiliary control point, which should be located on permanent structures like bridges, culverts, permanent building corners, etc. The auxiliary control points should be within the line of sight from the primary, secondary and tertiary control points.

ii) **Densification:** There shall be one auxiliary point for each secondary and tertiary control point, typically 200 m or more.

iii) **Instrument:** Dual/Single-frequency GPS Receiver (as used for main control).

iv) **Accuracy levels required:** same as their respective primary, secondary and tertiary control points.

Note:

1)The co-ordinate list and description of the location of all the control points shall be submitted to the JDA. The locations and IDs of all the control points should be maintained in GIS form.

2)The co-ordinate list should be supplied both for geodetic system (Lat/Long) and Projected System – Universal Traverse Mercator, i.e., the UTM projection of the respective zone.

3)In case a village tri-junction has not been marked and monumented by a primary, secondary or tertiary control point, the same should be monumented as per the parameters.

6. General Requirements

1. Village boundaries are to be marked.
2. The (X, Y, Z) coordinates for the control points should be given in spherical coordinates, i.e., geometric figures in three dimensions using three coordinates, as well as in Cartesian coordinates, i.e., each pointhttp://en.wikipedia.org/wiki/Point_(geometry)defined uniquely in a planehttp://en.wikipedia.org/wiki/Plane_(mathematics)through two numbers, called the *x-coordinate* or abscissa and the *y-coordinate* or ordinate of the point, separately.
3. The (X, Y) coordinates should be in WGS 84.
4. The survey agency should specify the specifications of the instruments used to achieve the required accuracy.
5. Some baselines for calibration of the monumentation should be maintained at selected locations.
6. A sketch for each category of the control points shall be submitted, showing the location of the control points along with their description for easy identification.
7. A map showing all the primary, secondary and tertiary control points along with their coordinates shall be submitted to the JDA.
8. The grid supplied by the JDA has to be superimposed on the geodetic network of the Survey of India to derive the control point numbering.
9. Control points should be on the boundaries of the khasras and not in between.
10. When located in govt. premises, the control point should be at a corner of the building or the premises.

17. JDA Commitment's Incorporation

17.1 Collection consultant has to collect relevant record from respective zone. Normally there are following four type of cases.

1. 90 B files

2. Single Patta/GH Patta

3. Land surrendered under section 44

4. JDA allotments

17.2 Verification

- Correct new of data collected is to be verified by the consultant.
- After verification data has to be geo-referenced
- After this it has to be superimposed on the base map
- Linking of attribute data
- Creation of KML/KMZ file

18. Demarcation Work (As per Fig.1)

18.1 Sector Road demarcation center line and both side edge of ROW is to be demarcation on site as per following specifications.

18.1.1 Center line

- **Center Line:**

  Demarcation of Center Line of the Sector Road will be done with the help of 200mm dia NP2 CC pipe @50 mt. c/c to c/c.

  Colour and lettering shall be as per the drawing shown in fig – 2.

  At curves and turning points interval will be @30mt c/c.

  On existing roads no center line will be demarcated.

18.1.2 Edge (Row)

- **ROW Line:**

  Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

  Colour and lettering shall be as per the drawing shown in fig – 3.

  At curves and turning points interval will be @30mt c/c.

  Extra stones will be required at junction/intersection points

18.1.3 Edge (Commercial strip)

- **Commercial strip:**

  Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

  Colour and lettering shall be as per the drawing shown in fig – 4.

  At curves and turning points interval will be @30mt c/c.

Extra stones will be required at junction/intersection points

19. **Preparation of land details plans**

20. **Notification of "No construction zone" as per JDA Act 1982**

21. **Quality Assurance**

22. **Documentation**

23. **Project server and Data uploading**

Some examples of the standards that can be used under this work are listed below:

i) Scanning process:

a) 300 dpi in black and white.

b) Image should be stored in .tiff (tagged image file format) or .gif (graphic interchange format) only.

c) The image orientation should be upright.

d) The image should be cleaned and free of noise.

e) Legibility features should be good.

f) Measured length and width with in bounding box of the maps.

g) The image should not be skewed or wrapped.

h) Quality printout of 100% matching (1:1) scanned map on 90-micron transparent sheet for verification with original sheet.

i) Final printout: One printout of verified scanned map on 75-micron matt polyester paper.

ii) Digitization of cadastral maps

a) Layers to be computerized

i Administrative boundaries of a revenue village with name of village, tehsil and district

ii Khasra boundaries with khasra numbers

iii Road network along with road code and type

iv Railway network

v Major water bodies and drainage network

b) File format

i) Shape file (.shp)

ii) 100% matching (1:1)

iii) Final printout – 75-micron matt polyester paper

c) Scale: 1:4000

d) Accuracy: 0.025%

iii) Registration Process

a) Database standards

SQL-92 (Relational Model) /SQL -1999 (Object Model) to be adopted as standard for relational database management systems (RDBMSs).

iv) Indian language computing

UNICODE – character encoding for each and every alphabet of all the languages. The most commonly used encodings are UTF-8 (Unicode transformation format) and UTF-16.

v) Survey

a) Scale: 1:2000

b) Format –Shape format or geo-database format

c) Projection System = UTM (Universal Transverse Mercator)

d) Datum: WGS 84 (World Geodetic System-1984)

e) Reference with survey stone details/bench mark point

f) Contour interval: 1 meter contour with height information

g) Village/taluk/district boundaries with annotation

h) Village boundaries with tri-junction pillars

i) District/tehsil/village codification as per Census 2001

j) Distances in meters

k) Area in hectares/sq meters

l) **Output:**

i) Accurate geo-referenced digital map using established control survey network around existing Survey of India permanent reference points

ii) Proper indexed map with proper sheet number

iii) Sheet-wise as well as complete mosaic map of village/ tehsil/ taluk/ district

iv) Open file format (.shp)

v) Spatial and non-spatial data dictionary with feature codes, feature type (point, line and polygon)

vi) Feature description and symbols

m) **Accuracy:** horizontal accuracy of 20 cm for rural areas, 10 cm for urban areas, or better.

n) **Preparation and distribution of draft land Detail map (LDM) and linking attributes**

i) The draft LDM should be prepared for each Sector Road, in duplicate. The draft LDM shall be given to the concerned Engineer, for checking, if any.

ii) The draft LDM shall contain:

i The LDM sketch at a suitable scale to fit to an A3 size paper. The scale should be rounded off to the next scale of 50 (e.g., if the scale is coming to 1:446, then it should be fitted to a scale of 1:450; in case the scale is coming as 1:421, then it should be fitted to a scale of 1:450).

ii The actual area of each khasra and details of the adjoining khasra should be indicated on the sketch.

iii ROW, Commercial Strip and Strip Planning should also be indicated on the map.

iv Northing and Easting should also be shown as grid on the plan

v The attributes of each Khata with khasra should also be printed in a tabular form, at the back of the sketch.

vi Any other details which deemed to be fit by the Engineering – in – charge should also be indicated on the map.

Note: Same specifications and procedure of Cadastral maps are to be followed for Sector Maps for the Geo referencing, digitization (if required) and superimposition.

The use of open standards is mandatory for data sharing and inter-operability among different systems.

STANDARD/FORMAT FOR MAP & GIS DATABASE GENERATION

Mapping Standard	1:2,000
Spatial Framework	NSF
Ortho rectification Accuracy (RMS)	0.1m
Projection	UTM
Datum	WGS 84
Map Frame Size	One sheet
Map (Planimetric) Accuracy Minimum Mappable Unit (MMU) Accuracy of Mapping	0.1 m 10x10 cm 100/99
Map format	Digital GIS Compliance
GIS Database standards	**1:2,000**
Spatial framework	Village
Tie Point Intervals for Spatial Framework	Meter grid
Projection	UTM
Datum	WGS 84
Minimum Frame size	One Sheets
Tic Registration Accuracy in meters	0.001
Planmetric Accuracy (1mm of scale) in m	0.02
Coordinate Movement Tolerance (CMT)	0.00001

Weed Tolerance (WT)	0.001
Silver Polygon Tolerance (SPT)	<0.001 sqm
Grid size (for image/Raster layers)	100x100 m

Output Standards	**1:2,000**
Output Formats	Digital GIS Compliance
Output Framework	Admin unit-Village
	User Defined region AOI
	Spatial Framework grids
Output Media	CD-ROM/DVD
Output Projection	UTM/User defined
Output Datum	WGS 84
Output Format	Goe Tiff, Shape File
Output Symbology	As per layer Legend/ DoLR Standards

Contract Agreement

Bid Document for "Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads."

This agreement made on xx day of xxxxxxx 2015 between Jaipur Development Authority ("JDA"), with its address at JawaharLalNehru Marg, Jaipur-302004 and <BIDDER>, with its address at …… **for "Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads.". JDA** and <BIDDER> agree as follows based on the offer given by <BIDDER> dated ……. addressed to JDA, Jaipur.

The contract price for this work is Rs. ---------- (Rupees ---------- Only). The Terms of Reference and all schedules of Bid Document shall be part of this Contract Agreement.

1. **Commencement and Completion dates:**
   a. The date of commencement shall be ……..
   b. The completion date for completing the work shall be 6 months from the date of commencement i.e. ……..

2. **Scope of work**

Objectives

JDA has planned to prepare the ownership details of the land falling within the sector roads and commercial strips under JDA jurisdiction. Detailed schedules for acquisition/notification of required land and properties and their demarcation on ground in consultation with the JDA authorities. Land Acquisition/notification Plan should include Kilometer-wise Land Details Plan (LDP) and schedule of ownership thereof and Costs of structures as per JDA Rules. Details of properties, such as buildings and structures falling within the right-of-way and on commercial strips and costs of compensation based on JDA rules. Land Details Reports should be prepared in consultation with affected persons based on latest land records available on "apna khata.com".

Main objective of the work is to prepare land details falling in ROW and commercial strips by opting following steps:

Order of Execution:

- Establishment and construction of control points (Bench Marks) on ground after due checking by traverse survey as per requirement and design of JDA. Minimum three points for each sector.

- Establishment and construction of Grid pointson ground after due checking by traverse survey as per requirement and design of JDA for each sector.
- Geo Referencing of ground points with the help of DGPS.
- Collection of all Land Record, Cadastral Maps, Master Plan tiles and GT Sheets
- Digitization (Vectorization) of these Cadastral Maps to prepare vector layer.
- Normalization of Cadastral Mapsvector layer by applying methods to remove errors due to distortion, vectorization and other errors.
- Geo referencing of Cadastral Maps vector layer.
- Mapping of khasra map with ground points. The related works required to carry out this task like collection of Khasra/land details and DLC rates from concerned departments have to be undertaken by the Consultant.
- Collection of Sector Plansand commitments from all concerned zones/different cells of JDA.
- Preparation of vector layer of sector plans and commitments.
- Geo referencing of Sector Plan & commitments vector layer.
- Integration and superimposition of sector plans and commitments on khasra maps.
- Verification of prepared map on ground by consultant and checking by JDA/third party.
- Freezing of final maps for all future use after all modifications based on ground condition and final checking.
- Linking of Master Plan Geo-referenced Raster as well as vector layer.
- Linking of available city road maps provided by Google, Yahoo, Bing and their maps as per directions of JDA.
- Linking of attributes of each entity (Khasra, and khata) with respective vector layer and shape file.
- Calculation of area of khasra for each khata of respective village in required format for sector road area and commercial strip along with cost details of structures.
- Preparing shape file for ROW area and commercial strip area for each sector road such that required report can be generated by fixing quarry on different parameters.
- All files of JDA commitments, cadastral maps and sector plans shall be collected by agency from respective Zone.

- These files should be scanned and linked with the respective shape file and database as per given quality assurance norms in technical specifications chapter.
- Complete inventory of all "Arakshan Patra"(Reservation letters) and pattas issued for the sector roads from time to time shall be updated by the agency.
- During this process if any discrepancy found same shall be listed by the agency and necessary modifications as per the directions of JDA have to be carried out.
- Preparation of complete scheme under respective section of JDA Act 1982 and its notification following due procedure for notification of Sector Road area as **"No Construction Zone".**
- The complete process of handling Objection/Suggestion during the process/scheme preparation and notification as per JDA Act 1982 is to be carried out by the agency as per requirement of JDA.
- Preparing KML/KMZ files of all layers.
- Documentation of Geo referenced Cadastral Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Geo referenced Sector Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Documentation of Land Detail Plan in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Documentation of complete list of all control points, grid points, and Bench Marks etc.
- Establishment of Project Server and uploading all data as per JDA requirement.
- All works as mentioned in Bid document are to be carried out by the consultant to the fullest satisfaction of JDA.
- There will be no additional payment of account of redo, corrections, modifications and checking or verification of work. Consultant has to deploy necessary staff for these tasks as and when required on the directions of Engineering – in – Charge.
- Detailed process, norms, quality checks and other details have been mentioned in Schedule X (Technical Specifications).
- Time duration of the work shall be **six months**. Contract period can be extended as per requirement of JDA for another one year on mutual consent. Amount of work can also be extended upto 50% in accordance with the provisions of the RTPPA-2012.
- If work is not completed in time there will be **penalty of Rs. 5000/- per day** for a period of 15 days and even then if work is not completed remaining work will be rescinded at the risk and

cost of the agency after forfeiting all deposited amount with JDA and black listing firm debarring for a minimum period of one year.

- No part of the work done shall be used by the agency; it will be the property of JDA. Agency has to submit affidavit in this regard.
- Work cannot be Sub-letted by the Agency.

Demarcation Work: (As per Fig.1)

➢ **Center Line:**

Demarcation of Center Line of the Sector Road will be done with the help of 200mm dia NP2 CC pipe @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig –2.

At curves and turning points interval will be @30mt c/c.

On existing roads no center line will be demarcated.

➢ **ROW Line:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig –3.

At curves and turning points interval will be @30mt c/c.

Extra stone will be required at junction/intersection points

➢ **Commercial strip:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig –4.

At curves and turning points interval will be @30mt c/c.

Extra stone will be required at junction/intersection points

Deliverables by JDA:

a) Land details, incase if it is not available with JDA same has to be obtained by the agency from RevenueDepartment. Necessary charges shall be deposited b JDA (If Any)
b) Cadastral maps, incase if it is not available with JDA same has to be obtained by the agency from RevenueDepartment. Necessary charges shall be deposited b JDA (If Any)
c) Sector Plans.
d) Master Plan Tiles.

e) All JDA commitments like reservation letters, approved schemes, JDA schemes, Group Housing Patta, and Land allotment etc. These details have to be collected by the agency from respective DC office or from other wings of JDA.
f) GT Sheet in Hard Copy.

Deliverables by Consultant:

- Geo referenced Cadastral Maps in bounded form in A4 & A3 size Refer Fig. 7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Geo referenced Sector Maps in bounded form in A4 & A3 size Refer Fig. 7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Land Detail Plans (LDP): Land Detail Plan of each road with complete details of each "khata". On the reverse side of the plan in bounded form in A4 & A3 size Refer Fig. 7 (5 copies) with different overlays and scale as suggested by JDA. For each Sector Road a separate volume is to be prepared.
- Processing of prescribed procedure for Notification of "No Construction Zone" in accordance with JDA Act 1982.
- Land Details : Land details in desired format for for road area and commercial strip for each road in tabular format in bounded form.
- Bench Mark Details Ref.Fig.8 & 10.
- Control Point Details.

3. TERMS OF PAYMENT:

The work has to be carried out to the satisfaction of the JDA. The bills for various stages of work will be presented by the Bidder to JDA. The payment will be made to the Bidder after examination and approval of the relevant work by JDA. The payment will be made in stages as stipulated below:

Payment Schedule (Each Sector-wise)

Based on Road length and AOI (ROW + Commercial Strip) Area.

S. No.	Description of work	% of stage wise Payment	Cumulative %
1	• Establishment of control points (BM) and grid points as per technical specifications. Minimum three Bench Mark points for each sector.	5% - One Month from date of W/O	5% - One Month from date of W/O

	• Ground Checking/verification.		
2	• Collection of Land records, khasra maps/ cadastral maps, JDA commitments and sector plans. • Mapping of Khasra maps/ cadastral maps, JDA commitmentsand sector plans with control points and grid points. • Vectorisation of cadastral maps, JDA commitments and sector plans • Ground Checking/verification.	5% - One Month from date of W/O	10% - One Month from date of W/O
3	• Superimposition of sector roads, commitments on khasra and Google. • Checking and verification. • Creation of KML/KMZ files	10% - Two Monthsfrom date of W/O	20% - Two Monthsfrom date of W/O
4	• Compiling of Land Details for ROW and commercial strip. • Core GIS, Linking of data • Checking and verification. • Uploading these details on server.	30% - Three Months from date of W/O	50% - Three Monthsfrom date of W/O
5	• Demarcation of center line, road boundary & commercial strip as per JDA specifications on ground. • Ground checking and verification.	20% - Four Months from date of W/O	70%- Four Months from date of W/O
6	• Initiating and completion of complete process of notification of land details in accordance to JDA Act1982 for ROW as "No Construction Zone".	10% - Five Months from date of W/O	80%- Five Months from date of W/O

7	• Planning work of commercial strips • Documentation Work • Establishment of Project Server • Uploading complete work on server as per the directions of JDA.	10% - Six Months from date of W/O	90%-Six Months from date of W/O
8	• After six months of satisfactory completion of work.	10% - One Year from date of W/O	100% - One Year from date of W/O

7. Indemnity

<BIDDER> shall indemnify JDA from any error or negligence in work including the professional services provided by the <BIDDER>. They will also bear the responsibility of clarifying issues that may crop up at alter stage upto a period of one year after the completion of contract and making corrections thereof without any additional charges.

8. Liquidated Damages (LD)

a If the Bidding Firm fails to complete the various jobs assigned to him as per the scope of the work in the given time, he is liable for compensation. He shall, without prejudice to any other right or remedy is liable for compensation @ 1% per week (of the unexecuted amount) or such smaller amount as may be fixed, by JDA on the contract value. When delay in completion of the work / part work amounts to less than a week the compensation payable shall be proportional to the number of days involved provided that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the contract value of the work. The amount of compensation may be adjusted or set off against any sum payable to the Bidding Firm under this or any other contract with the JDA, Jaipur.

The Engineer-In-charge shall keep a watch as to whether the actual progress of work is as per the time schedule and in case the bidding firm defaults in achieving progress on works at intermediate stage as per this schedule and continue to do so even after 15 days after a notice in writing from the Engineer-In-charge, the Bidding Firm will render himself liable to action as provided above.

9. Time Line

S. No.	Description of work	Time Period
1	• Establishment of control points (BM) and grid points as per technical specifications. Minimum three Bench Mark points for each sector. • Ground Checking/verification.	One Month from date of W/O

2	• Collection of Land records, khasra maps/ cadastral maps, JDA commitments and sector plans. • Mapping of Khasra maps/ cadastral maps, JDA commitmentsand sector plans with control points and grid points. • Vectorisation of cadastral maps, JDA commitments and sector plans • Ground Checking/verification.	One Month from date of W/O
3	• Superimposition of sector roads, commitments on khasra and Google. • Checking and verification. • Creation of KML/KMZ files	Two Monthsfrom date of W/O
4	• Compiling of Land Details for ROW and commercial strip. • Core GIS, Linking of data • Checking and verification. • Uploading these details on server.	Three Months from date of W/O
5	• Demarcation of center line, road boundary & commercial strip as per JDA specifications on ground. • Ground checking and verification.	Four Months from date of W/O
6	• Initiating and completion of complete process of notification of land details in accordance to JDA Act1982 for ROW as "No Construction Zone".	Five Months from date of W/O
7	• Planning work of commercial strips • Documentation Work • Establishment of Project Server • Uploading complete work on server as per the directions of JDA.	Six Months from date of W/O

8. **Termination**

- If it is found that work is not being executed according to Terms of Reference or work is being delayed without sufficient reasons, the work may be terminated by JDA at any point of time after giving due notice without any liability on the part of JDA.
- If work is not completed in time there will be a **penalty of Rs. 5000/- per day** for a period of 15 days and even then if work is not completed remaining work will be rescinded at the

risk and cost of the agency after forfeiting all deposited amount with JDA and black listing firm debarring for a minimum period of one year.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as or" the day and year first above written.

FOR AND ON BEHALF OF

JAIPUR DEVELOPMENT AUTHORITY **Witness**

FOR AND ON BEHALF OF

NAME OF BIDDER **Witness**

Annexure A : Compliance with the code of Integrity and No Conflict of Interest

Any person participating in a procurement process shall:-

(a) Not offer any bribe, reward or gift or any material benefit either directly or indirectly in exchange for an unfair advantage in procurement process or to otherwise influence the procurement process.

(b) Not misrepresent or omit that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation.

(c) Not indulge in any collusion, Bid rigging or anti- competitive behavior to impair the transparency, fairness and progress of the procurement process.

(d) Not misuse any information shared between the procuring entity and the bidders with intent to gain unfair advantage in the procurement process.

(e) Not indulge in any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process.

(f) Not obstruct any investigation or audit of a procurement process.

(g) Disclose conflict of interest, if any and.

(h) Disclose any previous transaction with any entity in India or any other country during the last three years or any debarment by any other procuring entity.

Conflict of Interest:-

The Bidder participating in bidding process must not have a Conflict of Interest.

A Conflict of Interest is considered to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.

i. A Bidder may be considered to be in conflict of interest with one or more parties in a bidding process of, including but not limited to :

Have controlling partners/ shareholders in common, or

Receive or have received any direct or indirect subsidy from any of them, or

Have the same legal representative for purposes of the Bid, or

have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder, or influence the decisions of the procuring entity regarding the bidding process. Or

The Bidder participates in more than one Bid in a bidding process. Participation by a Bidder in more than one bid will result in the disqualification of all bids in which the bidder is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one bid, or.

The Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Goods, works or services that are the subject of the Bid.

Bidder or any of its affiliates has been hired (or is proposed to be hired) by the procuring entity as engineer in charge/ Consultant for the contract.

Annexure B : Declaration by the Bidder regarding Qualifications :-

Declaration by the Bidder

In relation to my/ our Bid submitted to …… for procurement of …… In response to their Notice Inviting Bids No. …….. Dated …….. I/We hereby declare under section 7 of Rajasthan Transparency in Public Procurement Act. 2012, that:

1. I/we possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity :
2. I/ we have fulfilled my/our obligation to pay such of the taxes payable to the union and the State Government or any local authority as specified in the Bidding Document.
3. I/we are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and not the subject of legal proceeding for any of the foregoing reasons:
4. I/we do not have, and our directors and officers not have, been convicted of any criminal offence related to my/our professional conduct or the making of false statements or misrepresentations as to my/our qualifications to enter into a procurement contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings ;
5. I/we do not have a conflict of interest as specified in the Act, Rules and the Bidding Document, which materially affects fair competition;

Date:
Place :

Signature of bidder:
Name :
Designation:
Address:

Annexure C : Grievance Redressal during Procurement Process

The designation and address of the first Appellate Authority is **J.D.C**.The designation and address of the Second Appellate Authority is **E.C.(JDA)**

Filling 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 Appellate Authority, as specified in the Bidding Document with in a period of ten days from the date of such decision or action, omission, as the case may be, clearly giving the specific ground or grounds on which he feels aggrieved:

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

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

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

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

(4) Appeal not to lie in certain cases.

No appeal shall lie against any decision of the Procuring Entity relating to the following matters, namely:-

(a) Determination of need of Procurement;
(b) Provisions limiting participation of bidders in the Bid process;
(c) The decision of whether or not to enter into negotiations;
(d) Cancellation of a procurement process;
(e) Applicability of the provisions of confidentiality;

(5) Form of Appeal:

(a) An appeal under Para (1) or (3) above shall be in the annexed form along with as many copies as there are respondents in the appeal.

(b) Every appeal shall be accompanied by an order appealed against, if any affidavit verifying the facts stated in the appeal and proof of payment of fee.

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

(6) Fee for filing appeal:

(a) F

ee for first appeal shall be rupees two thousand five hundred and for second appeal shall be rupees ten thousand, which shall be non- refundable.

(b) The fee shall be paid in the form of Bank demand draft or banker's cheque of a Scheduled Bank in India payable in the name of Appellate Authority concerned.

(7) Procedure for disposal of appeal:

(a) The first Appellate Authority or Second Appellate Authority, as the case may be upon filing of appeal, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.

(b) On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be shall,

(i) Hear all the parties to appeal present before him and

(ii) Peruse or inspect documents, relevant records or copies there or relating to the matter.

(c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass an order in writing and provide the copy of order to the parties to appeal free of cost.

(d) The order passed under sub-clause (c) above shall also be placed on the state public Procurement Portal.

Annexure D: Additional Conditions of Contract

1.Correction of arithmetical errors

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

i If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected; ii If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

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

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

2.Procuring Entity's Right to Vary Quantities:

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

ii I

f the Procuring Entity does not procure any subject matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the bidder shall not be entitled for any claim or compensation except otherwise provided in the conditions of contract.

iii In case of procurement of Goods or services, additional quantity may be procured by placing a repeat order on the rates and conditions of the original order. However, the additional quantity shall not be more than 25 % of the value of Goods of the original contract and shall be within one month from the date of expiry of last supply. If the Supplier fails to do so, the Procuring Entity shall be free to arrange

for the balance supply by limited Bidding or other wise and the extra cost incurred shall be recovered from the supplier.

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

As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, looking to the quantum of work to be procured is very large and it may not be in the capacity of single Bidder, whose bid is accepted. So L1 will be awarded minimum 30% work, remaining quantity may be subdivided among participant bidders at the approved rate, in order of higher to lower QCBS score, as per the requirement.

Form No. 1[See rule 83]

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

Appeal No …… Of …… Before the …… (First/ Second Appellate Authority)

1. Particulars of appellant:

(i) Name of the appellant :

(ii) Official address, if any :

(iii) Residential address:

2. Name and address of the respondent (s): [1]

(i)

(ii)

(iii)

3. Number and date of the order appealed against and name and designation of the officer/authority that passed the order (enclose copy), or a statement of a decision, action or omission of the Procuring Entity in contravention to the provisions of the Act by which the appellant is aggrieved:

4. If the Appellant proposes to be represented by a representative, the name and postal address of the representative:

5. Number of affidavits and documents enclosed with the appeal:

6. Grounds of appeal:……
(Supported by an affidavit)

7. Prayer ……

Place ……

Date ……

Appellant's Signature

Annexure: 1

Template of NIB for Publication in News Paper

JAIPUR DEVELOPMENT AUTHORITY

Room No. 234, Main Building Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 e.mail : xxxxxxxx@jaipurjda.org

Dispatch Number Dated:02-07-2015

NOTICE INVITING BID

NIB No. : 08/2015-16

Online Bids are invited up-to 03.08.2015 at 06:00 PM for Consultancy for identification of land, demarcation, planning etc. of land for 160 feet & above Sector Roads. Details may be seen in the Bidding Document at our office or the website of State Public Procurement Portal website www.sppp.rajasthan.gov.in,www.eproc.rajasthan.gov.inand www.jaipurjda.org.

To participate in the bid, bidder has to be:

1. Registered on JDA website www.jaipurjda.org
   For participating in the Bid, the Bidder has to apply for the Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only.
2. Registered on e-Procurement Portal of Government of Rajasthan www.eproc.rajasthan.gov.in for online e-Bid submission.

Executive Engineer-SR
JDA, Jaipur

Annexure: 2

Template of Detail NIB for uploading on SPP Portal, e-Procurement, JDA Protal& as part of NIB Document

JAIPUR DEVELOPMENT AUTHORITY

Room No. 307, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 e.mail : eesr.jda@gmail.com

Dispatch Number-08 Dated:02-07-2015

NOTICE INVITING BID

NIB No. : 08

Name & Address of the Procuring Entity	➢ E.E. (SR), Jaipur Development Authority ➢ Room No. 307, CCC Building, III Floor, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 (Rajasthan) ➢ Email: e.mail : eesr.jda@gmail.com
Subject Matter of Procurement	➢ Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads.
Bid Procedure	Two Bid (eg. Single-stage Two part (envelope) open competitive) eBid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	➢ Least Cost Based Selection (LCBS)-L1
Websites for downloading Bidding Document, Corrigendum's, Addendums, etc.	➢ Websites: www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in , www.jaipurjda.org
Website for online Bid application and payment *	➢ Website: www.jaipurjda.org ➢ For participating in the Bid, the Bidder has to apply for this Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only. o Bidding document fee: Rs. 500.00 Rupees (Five Hundred only) o RISL Processing Fee: Rs. 1000 (Rupees One Thousand only) o Requisite Bid Security Deposit
Estimated Procurement Cost	➢ INR 75,00,000 (Rupees Seventy five Lakh only)
Bid Security Deposit	➢ Amount (INR) : 2% (1,50,000.00) of Estimated Procurement Cost, 0.5% (Rs.37500.00) of S.S.I. of Rajasthan, 0.5% (Rs. 37500.00) for Bidder registered as contractor in JDA, 1% (Rs. 7500.00) for Sick Industries, other than S.S.I., whose cases are pending with Board of Industrial & Financial Reconstruction
Pre-Bid	➢ 20.07.2015 at 16.00 PM ➢ Place : Manthan Hall II Floor, Main block JDA, JLN Marg, Jaipur-302014 (Rajasthan) ➢ Last date of submitting clarifications requests by the bidder 20.07.2015 by 06:00 PM addressed to the procurement entity at Room No. 307, Ram Kishore Vyas Bhavan, Indira Circle, Jawahar Lal Nehru Marg, Jaipur – 302 004 (Rajasthan). ➢ Response to clarifications by procuring entity : 21.07.2015 up to 3.00 PM
Start/ End Date for Bid Applying, Online Payment and Bid	➢ Start Date: 13.07.2015 at 9:30 AM onwards ➢ End Date: 03.08.2015 at 06:00 PM

Submission	
****Date/ Time/ Place of Technical Bid Opening**	➢ 07.08.2015 at 1:00 PM ➢ Room No. 309 Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 (Rajasthan)
Date/ Time/ Place of Financial Bid Opening	➢ Will be intimated later to the Technically qualified bidders
Bid Validity	➢ 120 days from the bid submission deadline

* The amount is to be deposited online by bidder. In case the amount exceeds the online payment limit the payment may be made through RTGS/NEFT in ICICI BANK LTD Bank Account Number 675401700586 IFSC Code ICIC0006754. After successful payment, update the UTR/Instrument number on JDA Tender portal against the tender you want to participate. The amount deposited will be confirmed by JDA and will be updated online.

** There should be a gap of 3 working days **BETWEEN** End Date for Bid Applying, Online Payment & Bid Submission **AND** Bid opening date.

Note:

1. Bidder (authorised signatory) shall submit their offer on-line in Electronic formats both for technical and financial proposal.
2. In case, any of the bidders fails to pay the Tender Fee, BSD, and RISL Processing Fee, online (subject to confirmation), its Bid shall not be accepted.
3. To participate in online bidding process, Bidders must procure a Digital Signature Certificate (Type III) as per Information Technology Act-2000 using which they can digitally sign their electronic bids. Bidders can procure the same from any CCA approved certifying agency, i.e. TCS, Safecrypt, Ncode etc. Bidders who already have a valid Digital Signature Certificate (DSC) need not procure a new DSC. Also, bidders must register on http://eproc.rajasthan.gov.in (bidders already registered on http://eproc.rajasthan.gov.in before 30-09-2011 must register again).
4. JDA 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.
5. Bidders are also advised to refer "Bidders Manual Kit" available at eProc website for further details about the e-Tendering process.
6. Training for the bidders on the usage of e-Tendering System (eProcurement) is also being arranged by DoIT&C, GoR on a regular basis. Bidders interested for training may contact e-Procurement Cell, DoIT&C for booking the training slot.
   Contact No: 0141-4022688 (Help desk 10 am to 6 pm on all working days) e-mail: eproc@rajasthan.gov.in
   Address : e-Procurement Cell, JDA, YojanaBhawan, Tilak Marg, C-Scheme, Jaipur
7. The procuring entity reserves the complete right to cancel the bid process and reject any or all of the Bids.
8. No contractual obligation whatsoever shall arise from the bidding document/ bidding process unless and until a formal contract is signed and executed between the procuring entity and the successful bidder.
9. 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.
10. The provisions of RTPPA Act 2012 and 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 Rules thereto, the later shall prevail.

Executive Engineer-SR
JDA, Jaipur

Annexure: 3
As part of NIB Document

Process for Participation & Depositing Payment Online

JAIPUR DEVELOPMENT AUTHORITY, has decided to receive Bidding document fee, RISL Processing Fee and Bid Security Deposit (BSD) through online mode only for which the bidder has to get registered himself on JDA portal www.jaipurjda.org.

To participate in the bid, bidder has to be:

1. Registered on JDA website www.jaipurjda.org (by depositing Rs. 500.00 online, the validity of which remains 3 (three) years).
   For participating in the Bid, the Bidder has to apply for this Bid and pay the Bid Document Fee, RISL Processing Fee and Bid Security Deposit, online only.
2. Registered on e-Procurement Portal of Government of Rajasthan www.eproc.rajasthan.gov.in for online e-Bid submission.

Methods for depositing on line amount

- Online through Internet Banking, Debit Card or Credit Card.
- In case the amount exceeds the online payment limit, the payment may be made through RTGS/NEFT/Transfer in Bank Account Number **675401700586** IFSC Code **ICIC0006754**of ICICI BANK Limited, JDA Campus Jaipur.

In case of RTGS / NEFT / Transfer the bidder is required to deposit the requisite amount in the dedicated bank account number as mentioned above and has to get the UTR / Reference number from the bank. This number requires to be updated whiling applying the bid on JDA portal.

While participation in the bid, a receipt will be generated through the system showing the submission details as per **Annexure-4**. The bidder is required to fill the instrument numbers for various heads on e-Procurement portal www.eproc.rajasthan.gov.in as mentioned in the receipt.

More details about Registration Process, Terms and Conditions and FAQ along with contact detail is available on JDA website www.jaipurjda.org under e-Services>>JDA Tender

Annexure: 4

Template of Online Receipt as part of NIB Document

Bidder has to submitted as proof of depositedamount against the Bid on e-ProcurementProtal

Jaipur Development Authority, Jaipur

Bid participation Receipt

Date & Time : 09/06/2015 05:13 PM

Bid Detail

Bid Id : 62151520001	Procurement Enitity :
Bid Time : Testing	
Bid Value : 300000	Bid Opening Place : In Chamber of EE-S.R, JDA, Jaipur .

Bidder Detail

Name of Entity :	Mobile :
Registration Type Individual	Instrument Amount :32500.00
Payment Mode : Online/UTR	Payment Channel : Payment Gateway/ICICI Branch-JDA
Instrument No.: 456123789	Instrument Date : 17-06-2015

Dates Detail

S.no.	Event Name	Event Date
1	Publishing Date	01/06/2015 01:00 PM
2	BID Opening Date	01/07/2015 03:00 PM

Specific Instrument Detail for eProc Rajasthan l

Instrument Type: DD			
Instrument Number	**Head Name**	**Amount**	**Date**
10000	Tender Fee	500.00	05/06/2015
10001	RISL Processing Fee	1000.00	05/06/2015
10002	BID Security Deposit	30,000.00	05/06/2015
Issuer Detail: Jaipur Development Authority		Challan Number:	

SPECIAL CONDITIONS

SCHEDULE 'H'

1 The contractor shall follow the contractor labour regulation and abolition Act 1970 & Rule1971.

2 The JDA shall have right to conduct an audit/technical examination of the work of the final bills of the contractor including all supporting vouchers, abstract etc. to be made within two years after payment of the final bills and if as a result such audit any amount is found to have been over paid / excess in respect of any work done by the contractor under the contract or any work claimed by him to have been done under this contract and found not to have been executed the contractor shall be liable to refund such amount and it shall be lawful for the JDA to recover such sum from him in the manner prescribed in special condition no. 5 or any other manner legally permissible and if it is found that the contractor was paid less then what was due to him under the contract in respect of work executed by him under it, the amount of such under payment shall be paid by the JDA to the contractor.

3. By submission of this tender the contractor agree to abide with all printed conditions provided in the PWD manual form 64 (Chapter 3-para 36)/ RTPPA act and subsequent modification thereafter.

4. The contractor shall not work after the sunset and before sunrise without specific permission of the authority Engineer.

5. Wherever any claim against the contractor for the payment of a sum of money arises out of under the contracts, the JDA shall be entitled to recover the sum by appropriating in part or whole of the Performance Security of the contractor, In the event of the security being insufficient or if no security has been taken from the contractor then the balance of the total sum recoverable as the case may shall be deducted from any sum then due or which at any time their contract with the JDA should this sum be sufficient to recover the full amount recoverable. The contractor shall pay to JDA on demand the balance remaining due. The JDA shall further have the right to affect such recoveries under P.D.R. Act.

6. The rate quoted by the contractor shall remain valid for a period of 4 (Four) months from the date of opening of the tenders.

7. The rates provided in tender documents are inclusive of all Taxes and royalty.

8. No conditions are to be added by the contractor and conditional tender is liable to be rejected.
9. All transaction in this execution of this work and this tender will be liable to Sale-Tax vide section. 2(B) read with sub-clause (4) Sale-tax Rule, 1954.
10. If any tender withdraws his tender prior to expiry of said validity period given at S.No. 6 or mutually extended prior or makes modifications in the rate, terms and conditions of the tender within the said period which are not acceptable to the department or fails to commence the work in the specified period, fails to execute the agreement the department shall without prejudice to any, other right or remedy, be at liberty to forfeit the amount of earnest money given in any form absolutely. If any contractor, who having submitted a tender does not execute the agreement or start the work or dose not complete the work and the work has to be put to retendering he will stand debarred for six months from participating of tendering in JDA in addition to forfeiture of Earnest Money / Performance Security and other action as mentioned under works agreement
13. **No additional document can be submitted by the contractor after submission of his bid accept as provided in order no. 169 dated 21.11.2014 or any embedment thereafter.**
14. Rules regarding enlistment of contractor provide that work up to the prescribed limit for which they are qualified for tendering can be allotted to them. Therefore, before tendering the contractor will keep this in mind, and submit the details of the work accordingly. Tenders with incomplete or incorrect information are liable to be rejected.
15. JDA has full right to reject any or all tenders without given any reasons.
16. As per Supreme Court decision "All contracts with Governments shall require registration of workers under the building and other construction workers (Regulation of Employment and Conditions of Service) Act, 1996 and extension of benefits to such workers under the etc."
17. The tenderer are required to submit copy of their enlistment as contractor in required category with respect cost of work.
18. Conditions of RPWA-100 will be mandatory & acceptable to the contractor.
19. Any tender received with unattested cutting/overwriting in rates shall be rejected and such bidder will be debarred from tendering for three months in JDA.
20. All the provision of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013 will be applicable. If there is any contradictions in existing special conditions and

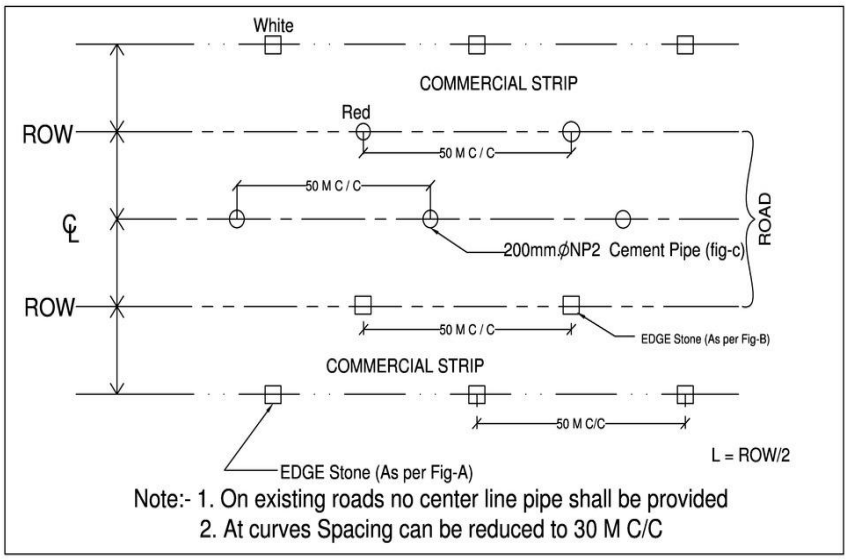
provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and rules 2013 provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules 2013 shall be applicable.

21. All fees/ payment shall be payable in the name of secretory JDA, Jaipur.

Signature of Contractor
With full Address

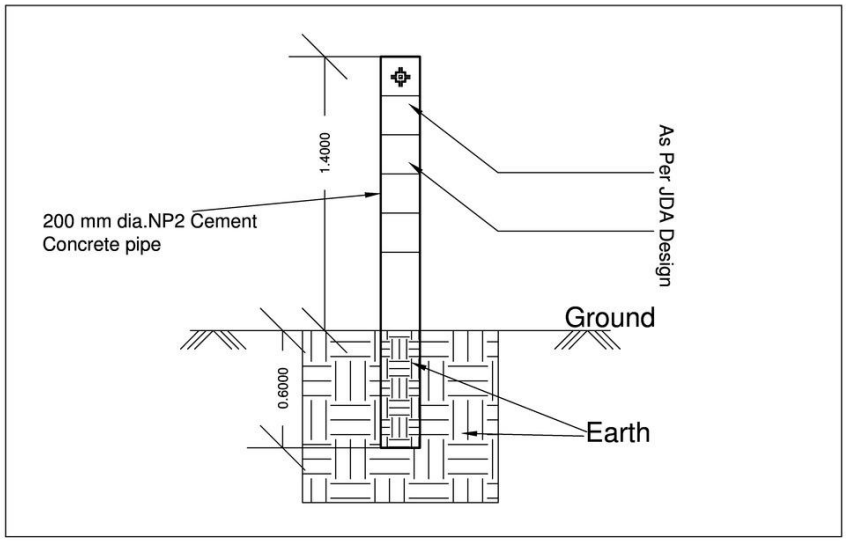
Executive Engineer-Sector Roads
JDA, Jaipur.

DEMARCATION WORK SPECIFICATIONS Fig.1



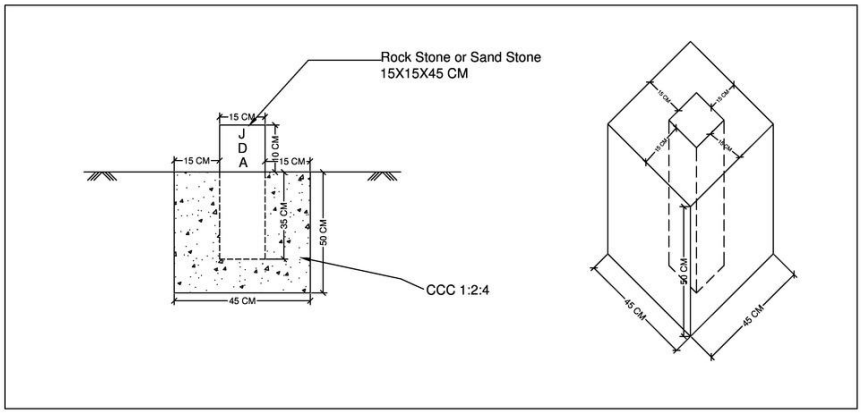
Note:- 1. On existing roads no center line pipe shall be provided
2. At curves Spacing can be reduced to 30 M C/C

Center Line White/Red Fig.2

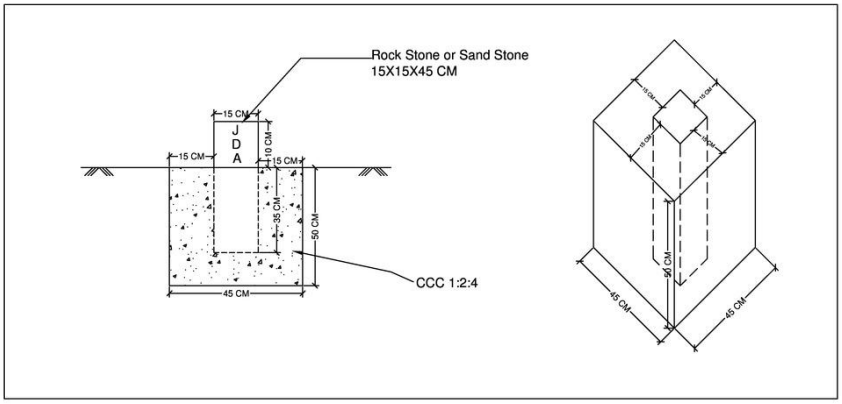


Edge Stone (Row) Red

Fig-3



Edge Stone (Commercial Strip) White Fig-4



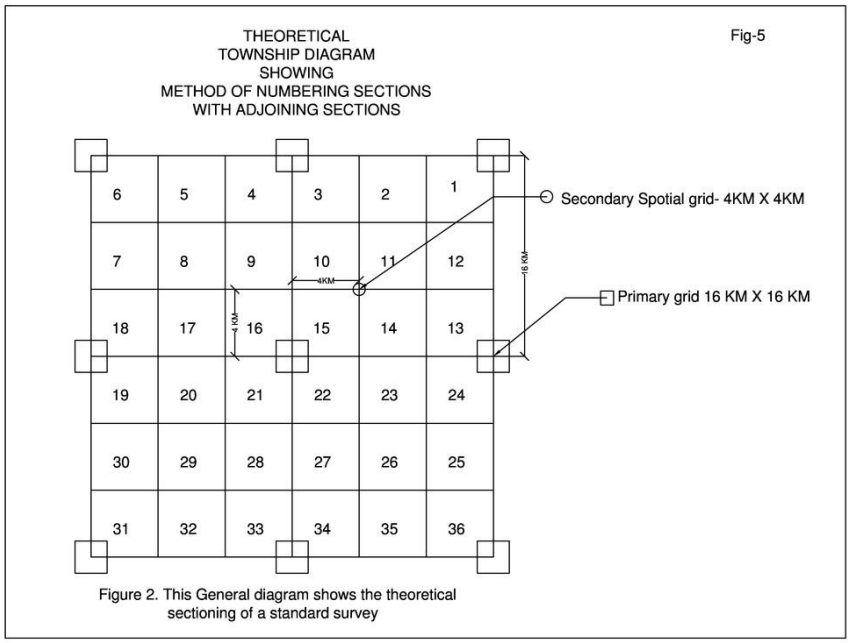
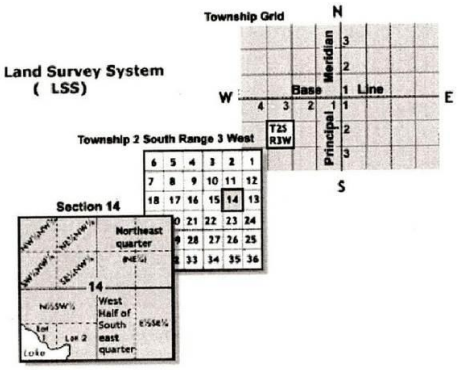


Figure 2. This General diagram shows the theoretical sectioning of a standard survey

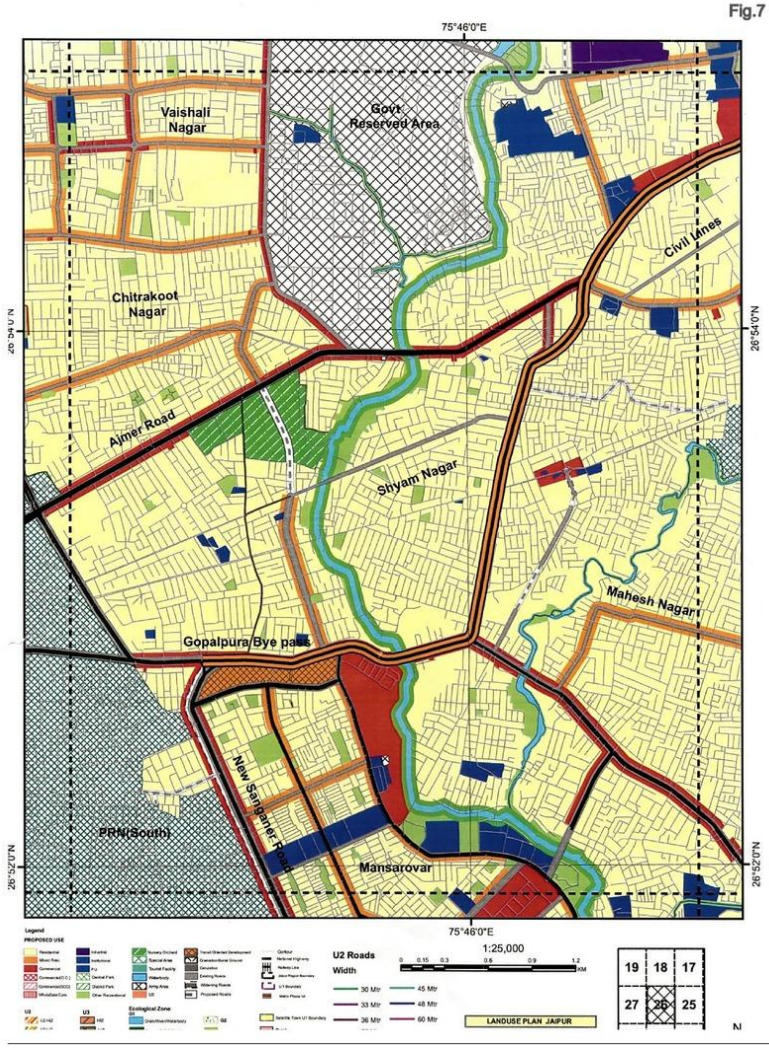
Fig-6



Illustraction of the Township Grid for Land Survey system

Ground Control Network
Primary 16 KM X 16KM
Secondary Spatial grid 4 KM X 4 KM
Tertiary Control Points - as per ground Condition.
DGPS observation of 4 hr.KM at primary Control Point and 1hr. at the Secondary Point

Fig.7


75°46'0"E
Vaishali Nagar
Govt Reserved Area
Civil Lines
Chitrakoot Nagar
26°54'0"N
Aimer Road
Shyam Nagar
Mahesh Nagar
Gopalpura Bye pass
New Sanganer Road
PRN(South)
Mansarovar
26°52'0"N
75°46'0"E
1:25,000
U2 Roads
Width
30 Mtr
33 Mtr
36 Mtr
45 Mtr
48 Mtr
60 Mtr
LANDUSE PLAN JAIPUR
19
18
17
27
26
25
N

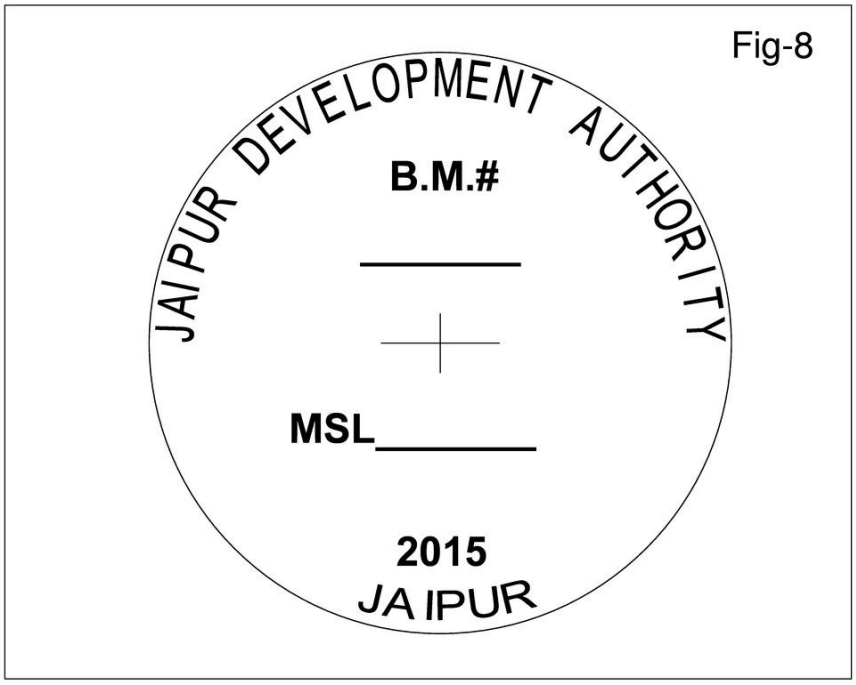


Fig-8

Monumentation of Secondary Control Points Fig-9

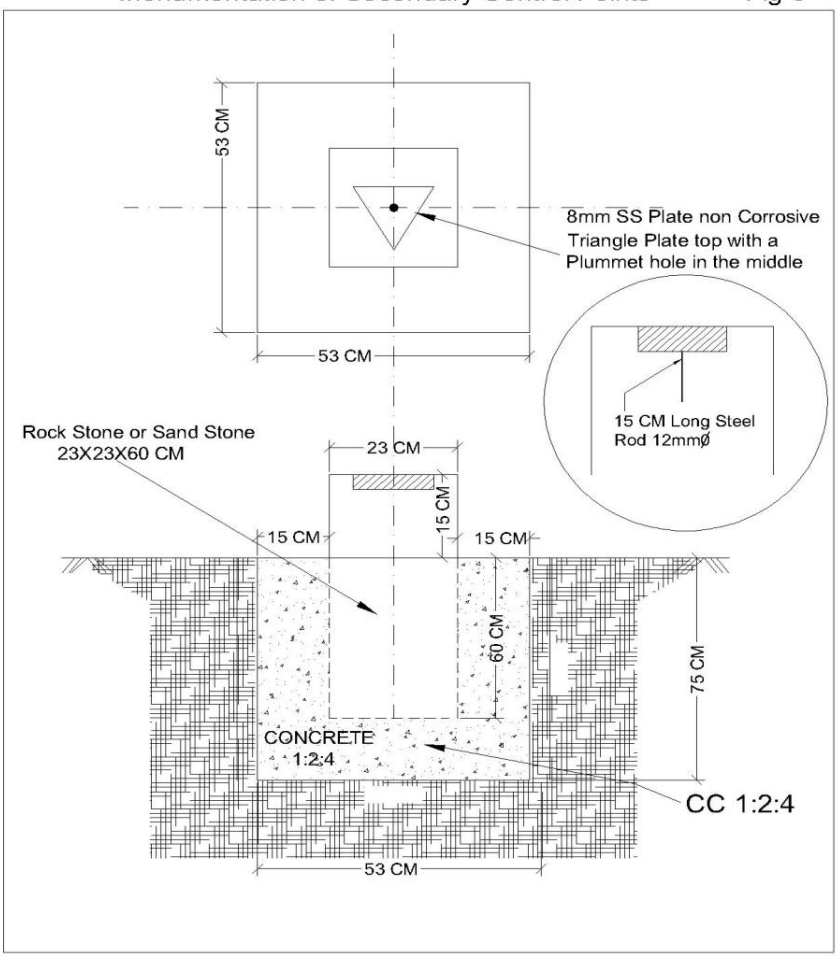
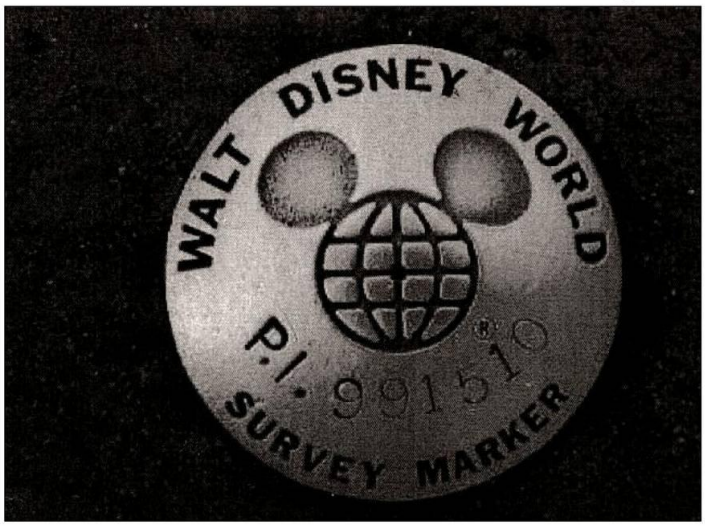


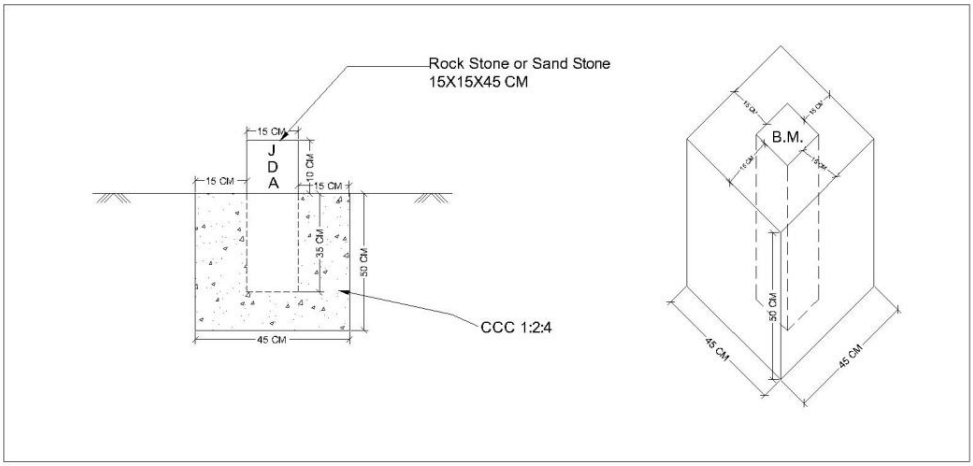
Fig-10



Example

Monumentation of Tertiary

Fig-11



JAIPUR DEVELOPMENT AUTHORITY, JAIPUR

BID DOCUMENT

FOR THE WORK OF

Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads,

JDA Region, Jaipur

2015

SCHEDULE- II

JAIPUR DEVELOPMENT AUTHORITY
Indira Circle, J.L.N. Marg, Jaipur-302004

No: JDA/EE/Sector Roads/2015-16/D- Date:

NOTICE FOR INVITATION OF BID

NIB NO.08/ EE-SECTOR ROADS/2015-16

1. Jaipur Development Authority (JDA) invites bids from experienced & eligible bidders in Two-Bid System for "**Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads.**" as per Terms of Reference. The details may be seen on the following websites: **www.jaipurjda.org**, **www.sppp.rajasthan.gov.in**, **https://eproc.rajasthan.gov.in/**

2. **GENERAL DETAIL OF WORKS:**

A.	NIB No.	NIB NO. 08/EE/ Sector Roads/2015-16
	Name of Work	**"Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads".**
B.	Work Description	Preparation of Land Details covers the following: JDA has planned to prepare the ownership details of the land falling within the sector roads and commercial strips under JDA jurisdiction. Detailed schedules for acquisition/ notification of required land and properties and their demarcation on ground in consultation with the JDA authorities. Land Acquisition/notification Plan should include Kilometer-wise Land Details Plan (LDP) and schedule of ownership thereof and Costs of structures as per JDA Rules. Details of properties, such as buildings and structures falling within the right-of-way and on commercial strips and costs of compensation based on JDA rules. Land Details Reports should be prepared in consultation with affected persons based on latest land records available on "**Apna khata.com**". Main objective of the work is to prepare land details falling in ROW and commercial strips by opting steps detailed in Terms of Reference (TOR).
C.	Approximate Cost of the Work	Rs. 75.00 Lacks
D.	Completion Period	**6 Months** from date of work order.

3. **ELIGIBILITY CRITERIA :**
   a) The firm shall have at least 3 year experience in core consultancy assignments for planning/ road/infrastructure sectors. In Govt. Sector copy of experience certificate should be submitted.
   b) Firm shall have experience in GIS application based assignments related to in Govt. sector planning/infrastructure development works; at least two works amounting Rs. 45.00Lacs or above, have been completed satisfactorily. Copy of completion certificate duly attested shall be required. This certificate should be issued by not less than Executive Engineer.
   c) The Firm should submit an affidavit that the firm has never been blacklisted by any central/state/any other government agency and that the firm has not left any work incomplete during the last three years in the Annexure IV given in the Bid Documents.

d) Turnover of the firm in any one financial year of last three years shall not be less than Rs 45.00 lacs

4. Bid Security @ 2% Rs. 1,50,000.00 (For A & AA class contractor registered in other department) and @ ½% Rs. 37,500.00 (For Contractor registered in JDA) through online payment after registering with JDA on www.jaipurjda.org/e-services/e-tender portal as per Annexure-1,2,3 & 4

5. The bidders are required to submit Bid Security, Cost of Bid documents, Bid processing fees through online payment after registering with JDA on www.jaipurjda.org/e-services/e-tender portal as per Annexure-1,2,3 & 4.In the absence of such fee the bid of respective bidder will be considered as non-responsive and shall be rejected.

6. All the provisions of **THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013** will be applicable. If there is any contradictions in existing special conditions and provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013, provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013 shall be applicable.

7. First of all the envelope of requisite fee, bid security, registration, etc. will be opened on E-Tendering system and only after checking its correctness the envelope of Eligibility Criteria and then Financial Bid document will be opened. Bidders may note that if such things are not found in order then considering the bid non responsive it will not be opened and rejected.

8. Bids are valid for 120 days from the date of receipt of bid.

9. Bids must be submitted under E-Tendering system only, on or before the due date and time, which will be opened on the date and time indicated as above in the presence of bidders who wish to attend.

10. Right to reject any or all bids without assigning any reason at any stage is reserved with the Jaipur Development Authority.

11. **No JV shall be permitted to participate in the bid.**

12. Competitive Bidding will be conducted for selection of the bidder on basis of quality of their experience and cost.

13. No conditional bids shall be accepted and can be rejected summarily.

14. Full details as required to be submitted as per the document, failing which the bid can be summarily rejected. No additional document shall be accepted after submission of bid.

15. The complete bid documents can be seen and downloaded from:

- JDA's web site **https://jaipurjda.org** or
- Rajasthan State Public Procurement Portal **https://sppp.rajasthan.gov.in/,** or
- E- Procurement Portal **https://eproc.rajasthan.gov.in/**

16. **IMPORTANT DATES:**

S. N.	Events	Date & Time	Location
a.	Date of issue of Bid document	13-07-2015 (9.30 AM) to 03-08-2015 (6 PM)	E-Procurement Portal **https://eproc.rajasthan.gov.in/.**
b.	Pre-bid Meeting	20-07-2015 at 16:00 Hrs	In the Chairmanship of Addl. Chief Engineer-II at Manthan Hall, IInd Floor, Main Block, Jaipur Development Authority, JLN Marg, Jaipur-302004
c.	Last date & time for submission of Bid document	03-08-2015 Up to 6.00 PM	E-Procurement Portal **https://eproc.rajasthan.gov.in/.**
d.	Date of opening of technical bid	07-08-2015 at 1.00 PM	Room No. 309,Third Floor, CCC Block, Jaipur Development Authority, JLN Marg, Jaipur-302004

Note: In case there is a holiday on the day of opening of bid, the activities assigned on that date shall be carried out on the next working day. Date & Time of opening of financial bids shall be intimated later.

17. GENERAL NOTES:

a) Work shall be done on Arc Info/GIS/QGIS/ESRI software as per the requirement of JDA. Required database/attributes have to be created as per the requirement of JDA by the consultant.

b) Consultant has to arrange at least one terminal (computer) in JDA office till work is completed.

c) No extra payment shall be made for verification or checking work.

d) Complete work shall be uploaded on server by the consultant as per JDA requirement.

e) **L1 will be awarded minimum 30% work. Remaining work can be subdivided among participant bidders at the approved rate, in order of higher to lower QCBS score, as per the requirement.**

f) **A pre-bid meeting** in the **Chairmanship of Addl. Chief Engineer-II will be held on 20.07.2015 at 16:00 PM** in the **MANTHAN HALL**, IInd floor, Main Building, JDA, Jaipur 302004 to clarify the issue and to answer queries on any matter related to bid document. All Bidders are encouraged to participate in this meeting and Bid document is studied thoroughly before this meeting.

g) For any other information, the contact person shall be:

i Mr. Arvind Arya, Additional Chief Engineer, JDA, Jaipur,
Mobile No: 7742222100.

ii Mr. P.K.Jain, Executive Engineer-Sector Roads, JDA, Jaipur ,
Mobile No: 9928026983.

Executive Engineer (Sector Roads)
Jaipur Development Authority, Jaipur

SCHEDULE – IV
GENERAL CONDITIONS OF CONTRACT

1 General Provisions

1.1 **Definitions**

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Law means the laws and any other instruments having the force of law in the Government's country as they may be issued and in force from time to time;

(b) "Agreement" means the Agreement signed by the Parties, to which these General Conditions of Contract are attached, together with all the documents listed in Clause 2 of such signed Contract;

(c) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GC 2.3;

(d) "Employer", "JDA" means Jaipur Development Authority, Jaipur.

(e) "GC" means these General Conditions of Contract;

(f) "Government" means the Government of India or the Government of Rajasthan as the case may be.

(g) "Local currency" means Indian Rupees;

(h) "Member", in case the Consultants consist of a joint venture of more than one entity, means any of these entities, and "Members" means all of these entities;

(i) "Personnel" means persons hired by the Consultants or by any Sub consultant as employees and assigned to the performance of the Services or any part thereof; "Local Personnel" means such persons who at the time of being so hired had their domicile inside India; and "Key Personnel" mean the personnel referred to in Clause 16 of TOR

(j) "Party" means the Employer or the Consultants, as the case may be, and Parties means both of them;

(k) "Commissioner/Superintending Engineer" means the Commissioner / Superintending Engineer, JDA or Employer.

(l) "Services" means the work to be performed by the Consultants pursuant to this Contract for the purposes of the Project, as described in Appendix A hereto;

(m) "Sub-Consultant" means any entity to which the Consultant subcontract any part of the Services in accordance with the provisions of Clause GC 3.7; and

(n) "Third Party" means any person or entity other than the Government, the Employer, the Consultant or a Sub-consultant.

(o) "Technical Proposal" means the technical proposal submitted by the consultant and accepted by the Employer.

1.2 Relation between the Parties

Nothing contained herein shall be construed as establishing a relation of master and servant or of agent and principal as between the Employer and the Consultant. The Consultant, subject to this Contract, have complete charge of Personnel performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

1.3 **Law Governing the Contract**
This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law of India and Rajasthan State.

1.4 **Language**
This Contract has been executed in the English, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

1.5 **Headings**
The headings shall not limit, alter or affect the meaning of this Contract.

1.6 **Notices**
Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram or facsimile to such Party at the address specified in the *SC*.

Employer: The Commissioner,
Jaipur Development Authority, Jaipur.
Tele No. 0141-2563234

1.6.1 Notice shall be deemed to be effective as follows:

(a) in the case of personal delivery or registered mail, on delivery;
(b) in the case of telexes/e-mail, 24 hours following confirmed transmission;
(c) in the case of telegrams, 24 hours following confirmed transmission; and
(d) in the case of facsimiles, 24 hours following confirmed transmission.

1.7 A party may change its address for notice hereunder by giving the other party notice of such change to the other party.

1.8 **Location**
The Services shall be performed at Jaipur (by establishing local office at Jaipur along with land line phone and Fax facility) and such locations as are specified by the Employer, where the location of a particular task is not so specified, at such locations, whether in India or elsewhere, as the Client may approve.

1.9 **Authority of Member in Charge**
In case the Consultants consist of a joint venture of more than one entity, the Member shall authorize one of the entities to act on their behalf in exercising all the consultants' rights and obligations towards the Employer under this Contract, including without limitation the receiving of instructions and payments from the Employer.

2 **Authorized Representatives**
Any action required or permitted to be taken, and document required or permitted to be executed, under this Contract by the Employer or the consultants may be taken or executed by the officials authorized by the JDA and the consultant.

2.1 **Taxes and Duties**
Unless otherwise specified, the Consultants shall pay such taxes, duties, fees and other impositions as may be levied under the Applicable Law.

2.1.1 The consultants and the personnel shall pay the taxes, duties, fees, levies and other Impositions levied under the existing, amended or enacted laws during life of this contract and the client shall perform such duties in regard to the deduction of such tax as may be lawfully imposed.

2.1.2 The rates quoted should be inclusive of all taxes payable for this Consultancy Services, which shall not be paid/ reimbursed by the Client separately.

2.2. **Commencement, Completion, Modification and Termination Of Contract**

2.3 **Effectiveness of Contract**
This Contract shall come into force and effect on the date (the "Effective Date") of the Employer's notice/Work order to the Consultant instructing the Consultant to begin carrying out the Services.

This notice shall confirm that the effectiveness conditions, if any, listed in the SC have been met.

2.4 **Termination of Contract for Failure to Become Effective**

If this Contract has not become effective within such time period after the date of the Contract signed by the Parties, either Party may, by not less than four (4) weeks' written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

2.5 **Commencement of Services**

The Consultants shall begin carrying out the Services at the end of Maximum 7 days period after the Effective Date/Acceptance letter date.

2.6 **Expiration of Contract**

Unless terminated earlier pursuant to General Conditions Clause 3 below hereof, this Contract shall expire when services have been completed and all payments have been made at the end of such time period after the Effective Date as shall be specified in the Contract.

2.7 **Entire Agreement**

This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

2.8 **Modification**

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services, may only be made by written agreement between the Parties. Pursuant to Clause GC 7.2 hereof, however, each party shall give due consideration to any proposals for modification made by the other Party.

2.9.1 **Suspension**

The Client may, by written notice of suspension to the Consultants, suspend all payments to the Consultants hereunder if the Consultants fail to perform any of their obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultants to remedy such failure within a period not exceeding fifteen (15) days after receipt by the Consultants of such notice of suspension.

2.9.2 **Extension of Time**

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of condition beyond control of consultant.

3 **Termination**

3.1 **By the Employer**

The Employer may, by not less than seven (07) days' written notice of termination to the Consultants (except in the event listed in paragraph (f) below, for which there shall be a written notice of not less than fifteen (15) days), such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (g) of this Clause, terminate this Contract:

(a) If the Consultants fail to remedy a failure in the performance of their obligations hereunder, as specified in a notice of suspension pursuant to Clause GC 2.9.1 hereinabove, within seven (07) days of receipt of such notice of suspension or within such further period as the Client may have subsequently approved in writing;

- If prorata progress is not maintained.
- Poor performance of technical staff.
- Poor quality work.
- Fail to follow instructions of Officer Incharge.

(b) If the Consultants become (or, if the Consultants consist of more than one entity, if any of their Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) If the Consultants fail to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GC 9.5 hereof;

(d) If the Consultants submit to the Employer a statement which has a material effect on the rights,

obligations or interests of the Employer and which the Consultants know to be false;

(e) If, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than fifteen (15) days; or

(f) If the Employer, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

(g) If the consultant, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. For the purpose of this clause:
"Corrupt practice" means the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the selection process or in contract execution.
"fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the borrower and includes collusive practice among Consultant (prior to or after submission of proposals) designed to establish prices at artificial, non-competitive levels and to deprive the borrower of the benefits of free and open competition.

3.2 **By the Consultants**

The Consultant, may by not less than seven (07) days written notice to the Employer, such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause, terminate this Contract.

a) If the Employer fails to pay any money due to the Consultants pursuant to this Contract and not subject to dispute pursuant to Clause 9.5.3 hereof within thirty(30) days after receiving written notice from the Consultants that such payment is overdue;

b) If the Employer is in material breach of its obligations pursuant to this Contract and has not remedied the same within thirty (30) days (or such longer period as the Consultants may have subsequently approved in writing) following the receipt by the Employer of the Consultants notice specifying such breach;

c) If, as the result of Force Majeure, the Consultant, are unable to perform a material portion of the Services for a period of not less than fifteen (15) days; or

d) If the Employer fails to comply with any final decision reached as a result of arbitration pursuant to Clause GC 8 hereof.

3.3 **Cessation of Rights and Obligations**

Upon termination of this Contract pursuant to Clauses 2.4 or 3 hereof, or upon expiration of this Contract pursuant to Clause 2.4 hereof, all rights and obligations of the Parties hereunder shall cease, except

(i) such rights and obligations as may have accrued on the date of termination or expiration,

(ii) the obligation of confidentiality set forth in Clause GC 3.9 hereof,

(iii) any right which a Party may have under the Applicable Law.

3.4 **Cessation of Services**

Upon termination of this Contract by notice of either Party to the other pursuant to Clauses 3.1 or 3.2 hereof, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Employer, the Consultant shall proceed as provided, respectively, by Clauses GC 5 or 6 hereof.

3.6 **Disputes about Events of Termination**

All the disputes shall be dealt as per RTPP Act 2012 and Rules 2013.

3.7. **Obligations of the Consultants**

3.7.1 **General**

3.7.2 **Standard of Performance**

The Consultants shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology

and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Employer, and shall at all times support and safeguard the Employer's legitimate interests in any dealings with Sub Consultant or Third Parties.

The detailed engineering drawings/fit for construction/working drawings shall be submitted to the engineer in charge/executive engineer for approval and comply with the comments/suggestions given without any additional cost. Not with standing any approvals of the client, the consultant shall remain fully responsible for quality and creativeness of his work.

3.7.3 **Law Governing Services**

The Consultants shall perform the Services in accordance with the Applicable Law and shall take all practicable steps to ensure that any Sub consultants, as well as the Personnel and agents of the Consultants and any Sub consultants, comply with the Applicable Law.

3.7.4 **Conflict of Interests**

The consultant shall abide by all the conditions laid down in the Rajasthan Transparency of Public Procurement Act 2012 (RTPP Act 2012) and rules 2013. The consultant has to sign and upload Annexure A & B given in the RTPP Act 2012.

3.8 **Confidentiality**

The Consultant, their Sub consultant and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relation to the Project, the Services, this Contract or the Employers business or operations without the prior written consent of the Employer.

4. **Liability of the Consultants**

Subject to additional provisions, if any, set forth in the SC, the Consultant liability under this Contract shall be as provided by the Applicable Law.

4.1 **Insurance to be taken out by the Consultant**

The Consultant shall take out and maintain, at their own cost, but on the terms and conditions approved by the client, insurance against the risks, and for the coverage and shall provide evidence to the client showing that all such insurance has been taken out and maintained and that the current premium have been paid off and shall also keep the insurance live by paying timely premium time to time, throughout the period of consultancy, for covering of:

i) Third party motor vehicle liability in respect of motor vehicles operated by the consultant or their personnel.

ii) Professional Liability Insurance (PLI) including deficiencies/inadequacies in the work and its related components for a period of Two Years beyond the consultancy period or as per Applicable Law, whichever is longer after the completion of consultancy services with a minimum coverage equal to the contract value for the assignment.

iii) Employer's liability and workers compensation insurance in respect of the personnel of consultants and any sub consultants, in accordance with the applicable law as well as, with respect to such personnel, any such life, health, accident, travel or other insurance as may be appropriate.

All the insurance and policies should start from the date of commencement of services and remain effective as per relevant requirements of contract agreement.

4.2 **Accounting, Inspection and Auditing**

The Consultant shall keep accurate and systematic accounts and records in respect of the Services hereunder, in accordance with internationally accepted accounting principles and shall permit the Employer or its designated representative to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the Employer.

4.3 **Consultant' Actions requiring Employer's prior Approval**

The Consultant shall obtain the Employers prior approval in writing before taking any of the following actions:

Entering into a subcontract for the performance of any part of the Services, it being understood

(i) That the selection of the Sub consultant and the terms and conditions of the Subcontract shall have been approved in writing by the Employers prior to the Execution of the subcontract, and

(ii) That the Consultant shall remain fully liable for the performance of the Services by the Sub consultant and its Personnel pursuant to this Contract; and

4.4 **Specific Responsibilities of the Consultant**

The consultant shall be fully responsible for collecting data and information from Government and other agencies. All information, data and reports obtained from the Government and other agencies in the execution of the services shall be properly reviewed and analyzed by the Consultant. The responsibility for the correctness of using such data shall rest with the Consultant. All such information, data and reports shall be treated as confidential.

The Consultant shall make his own arrangements for document reproduction, printing and reproduction of all study reports during the course of the study.

4.5 **Reporting obligations**

The Consultant shall submit to the Employer the reports and documents specified in Appendix A hereto. At the end of the project before the final payment the consultant shall submit a set of all working drawings / good for construction with a project completion report in soft and hard copy.

The Consultant is expected to provide suitable presentations of the project during the review meetings of the client / employer or as mentioned at relevant place.

All submission of the Consultant such as drawings, designs, estimates, reports, etc., shall be of five hard copies and three soft copies each. Drawings shall be of AO / A1 sizes. OR as specified in the specifications.

The Consultant / concerned expert of Consultant shall regularly visit the site during construction and certify in the site register that their drawings are being correctly interpreted at site and the finishing is of acceptable quality.

5. Documents prepared by the consultant to be the property of the employer

All plans, drawings, specifications, designs, reports and other documents prepared by the Consultant in performing the Services shall become and remain the property of the Employer, and the Consultant, shall not later than upon termination or expiration of this Contract, deliver all such documents to the Employer, together with a detailed inventory thereof. The Consultant may retain a copy of such documents. The Consultant shall however not use these documents for any purpose to any agency other than the client without prior written approval of the client.

6. Equipment and Materials furnished by the Employer.

Equipment and materials if made available to the Consultant by the Employer, or purchased by the Consultants with funds provided by the Employer, shall be the property of the Employer and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Employer an inventory of such equipment and materials and shall dispose of such equipment and materials in accordance with the Employer's instructions. While in possession of such equipment and materials, the Consultant, unless otherwise instructed by the Employer in writing, shall insure them at the expense of the Employer in an amount equal to their full replacement value.

7. **Consultants' Personnel**

7.1**General**

The Consultant shall employ and provide such qualified and experienced Personnel as are required to carry out the Services from time to time under intimation to the Engineer-in-Charge/Executive Engineer.

One terminal with required manpower and software till the contract is over shall be provided by the consultant in JDA office.

7.2**Resident Project Manager**

The Consultants shall ensure that at all times during the Consultant' performance of the Services, a Resident Engineer shall take charge of the performance of such Services.

8. Obligations of the Employer

8.1 Assistance and Exemptions

Employer shall use its best efforts to ensure that the Employer shall provide the Consultant, Sub-Consultant and Personnel with all requisite facilities pursuant to applicable law as shall be necessary to enable the Consultant, Sub- Consultant or Personnel to perform the Services;

8.2 Access to Land

The Employer warrants that the Consultant shall have, free of charge, unimpeded access to all land in respect of which access is required the performance of the services. The Employer will be responsible for any damage to such land or any property thereon resulting from such access and will indemnify the Contractor and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default or negligence of the Consultant or any sub- Consultant or the Personnel of either of them.

8.3 Change in the Applicable Law

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost or reimbursable expenses incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto.

9 Time Schedule:

9.1. Payments to the Consultant

Billing and payments in respect of the Contract shall be made as stated in schedule in 2 under TOR. All payments shall be made in Indian Rupees.

9.2 Mode of Billing and Payment

Billing and payments in respect of the Services shall be made as follows:

(a)The Client shall cause the payment of the Consultants periodically as given in schedule of payment above within thirty (30) days after the receipt by the Client of bills with supporting documents.

9.3. Fairness and good faith

9.3.1 **Good Faith**

The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

*9.3.*2 **Operation of the Contract**

The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with Clause 8 hereof.

9.4 Secrecy and Confidentiality

The consultant is expected to maintain utmost Secrecy and confidentiality on any proprietary information / data / reports that may be provided by us orally or in writing and collected by you during the course of this contract.

9.5. Settlement of Disputes

Settlement of disputed shall be done in accordance of the provisions made in the RTPP Act 2012 and Rules 2013.

10 Foreclosure

10.1 *The Employer may, by not less than fifteen (15) days* written notice of foreclosure (the expiry of the notice period whereof being the date of termination) to the Consultant, without assigning any reason whatsoever at any stage of the contract, terminate the contract.

*10.*2 Up on termination of this contract, the Consultant shall take necessary steps to bring the work to a close in a prompt orderly manner and shall handover all the documents/ reports prepared by the Consultant up to and including the date of termination to the Employer.

*10.*3 The Consultant shall be duly paid for the works carried out and services rendered till the date of termination. The Consultant shall not be reimbursed for any demobilization expenses, if the contract is terminated.

11. Jurisdiction of court

In the event of any dispute arising between the parties here to in respect of any of the matters comprised in this agreement, the same shall be settled by a competent court having jurisdiction over the place where agreement is executed at Jaipur and by no other court.

***

SCHEDULE-V

BIDDER'S INFORMATION SHEET

Bidder's Information	
Bidder's legal Name 1. Name	
2.Telephone numbers	
2. Fax numbers	
3. E-mail address	
Type of Firm (Individual/ Partnership /Private Ltd.)	
Address of the firm	
Bidder's country of constitution	
Bidder's year of constitution (certified copy to be enclosed)	
Bidder's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	

Signature of bidder/Authorized representative

SCHEDULE-VIII

TERMS OF REFERENCE (TOR)

1. Background Information:

Jaipur Development Authority (JDA) is the agency of the Rajasthan responsible for preparation and implementation of Master Plan for the Jaipur http://en.wikipedia.org/wiki/Jaipurcity in Rajasthan state in India. It is engaged in infrastructural and basic amenity development for Jaipur city and also environment conservation and development of rural areas around the city.

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR DESIRES TO OBTAIN **Consultancy for identification of land, demarcation, planning etc. of land for 160 feet & above Sector Roads JAIPUR.**

2.Objectives & Description of Assignment

JDA has planned to prepare the ownership details of the land falling within the sector roads and commercial strips under JDA jurisdiction. Detailed schedules for acquisition/notification of required land and properties and their demarcation on ground in consultation with the JDA authorities. Land Acquisition/notification Plan should include Kilometer-wise Land Details Plan (LDP) and schedule of ownership thereof and Costs of structures as per JDA Rules. Details of properties, such as buildings and structures falling within the right-of-way and on commercial strips and costs of compensation based on JDA rules. Land Details Reports should be prepared in consultation with affected persons based on latest land records available on "**Apna khata.com**" or collected from respective department.

Main objective of the work is to prepare land details falling in ROW and commercial strips and their demarcation on ground by opting following steps:

3. Order of Execution:

- Establishment and construction of control points (Bench Marks-Ref.Fig.8 & 10) on ground after due checking by traverse survey as per requirement and design of JDA. Minimum three points for each sector.
- Establishment and construction of Grid points on ground after due checking by traverse survey as per requirement and design of JDA for each sector.
- Geo Referencing of ground points with the help of DGPS.
- Collection of all Land Record, Cadastral Maps, Master Plan tiles and GT Sheets
- Digitization (Vectorization) of these Cadastral Maps to prepare vector layer.
- Normalization of Cadastral Maps vector layer by applying methods to remove errors due to distortion, vectorization and other errors.
- Geo referencing of Cadastral Maps vector layer.

Mapping of khasra map with ground points. The related works required to carry out this task like collection of Khasra/land details and DLC rates from concerned departments have to be undertaken by the Consultant.

- Collection of Sector Plans and commitments from all concerned zones/different cells of JDA.
- Preparation of vector layer of sector plans and commitments.
- Geo referencing of Sector Plan & commitments vector layer.
- Integration and superimposition of sector plans and commitments on khasra maps.
- Verification of prepared map on ground by consultant and checking by JDA/third party.
- Freezing of final maps for all future use after all modifications based on ground condition and final checking.
- Linking of Master Plan Geo-referenced Raster as well as vector layer.
- Linking of available city road maps provided by Google, Yahoo, Bing and their maps as per directions of JDA.
- Linking of attributes of each entity (Khasra, and khata) with respective vector layer and shape file.

- Calculation of area of khasra for each khata of respective village in required format for sector road area and commercial strip along with cost details of structures.
- Preparing shape file for ROW area and commercial strip area for each sector road such that required report can be generated by fixing quarry on different parameters.
- All files of JDA commitments, cadastral maps and sector plans shall be collected by agency from respective Zone.
- These files should be scanned and linked with the respective shape file and database as per given quality assurance norms in technical specifications chapter.
- C omplete inventory of all "Arakshan Patra"(Reservation letters) and pattas issued for the sector roads from time to time shall be updated by the agency.
- During this process if any discrepancy found same shall be listed by the agency and necessary modifications as per the directions of JDA have to be carried out.
- Preparation of complete scheme under respective section of JDA Act 1982 and its notification following due procedure for notification of Sector Road area as **"No Construction Zone".**
- The complete process of handling Objection/Suggestion during the process/scheme preparation and notification as per JDA Act 1982 is to be carried out by the agency as per requirement of JDA.
- Preparing KML/KMZ files of all layers.
- Documentation of Geo referenced Cadastral Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Geo referenced Sector Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Documentation of Land Detail Plan of each road with complete details of each "khata". On te reverse side of the plan in bounded form in A4 & A3 size Refer Fig .7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Documentation of complete list of all control points, grid points, and Bench Marks etc.
- Establishment of Project Server and uploading all data as per JDA requirement.
- All works as mentioned in Bid document are to be carried out by the consultant to the fullest satisfaction of JDA.
- There will be no additional payment of account of redo, corrections, modifications and checking or verification of work. Consultant has to deploy necessary staff for these tasks as and when required on the directions of Engineering – in – Charge.
- Detailed process, norms, quality checks and other details have been mentioned in Schedule X (Technical Specifications).
- Time duration of the work shall be **six months**. Contract period can be extended as per requirement of JDA for another one year on mutual consent. Amount of work can also be extended upto 50% in accordance with the provisions of the RTPPA-2012.
- No part of the work done shall be used by the agency; it will be the property of JDA. Agency has to submit affidavit in this regard.
- Work cannot be Sublette by the Agency.

Comment [AA1]:

Comment [AA2]:

Comment [AA3]:

Demarcation Work: (As per Fig.1)

➢ **Center Line:**

Demarcation of Center Line of the Sector Road will be done with the help of 200mm dia NP2 CC pipe @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig – 2.

At curves and turning points interval will be @30mt c/c.

On existing roads no center line will be demarcated.

➢ **ROW Line:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig – 3.

At curves and turning points interval will be @30mt c/c.

Extra stones will be required at junction/intersection points

- **Commercial strip:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig – 4.

At curves and turning points interval will be @30mt c/c.

Extra stones will be required at junction/intersection points

Eligibility Criteria and evaluation of Bid on QCBS:
Minimum Eligibility Criteria:

a. The firm shall have at least **3 year experience** in core consultancy assignments for planning/road/infrastructure sectors.

b. The Firm should submit an affidavit that the firm has never been blacklisted by any central/state/any other government agency and that the firm has not left any work incomplete during the last three years in the Annexure IV given in the Bid Documents.

c. Firm shall have experience in GIS application based assignments related to planning/infrastructure development works; at least **two works amounting Rs. 45.00Lacs** and above.

d. Turnover of the firm in any financial year of last three years shall not be less than Rs 45.00 **Lacs.**

e. No JV shall be permitted to participate in the bid.

Proposal of only those consulting firm which shall qualify in minimum eligibility criteria will be further scrutinized on QCBS as given under

S. No.	Description of Evaluation	Micro Marks	Maximum Marks
A	Establishment of firm (From date of Incorporation certificate)		10
I	More than 3 year	2	
Ii	>3 yrs but <6 yrs	4	
Iii	>6 yrs but <9 yrs	6	
Iv	>9 yrs	10	
B	Experience of preparation of GIS application based infrastructure/Engineering development work.		25
I	For single work	15	
II	For each additional work	5	
C	Experience of preparation of scheme layout plan with khasra map (Cadastral Map) digitization (Vectorization) and superimposition on total station survey approved by the competent authority not below the rank of executive Engineer/Secretary/commissioner/ Executive officer(At least for 10 hect area/ 10 km road with preparation of KMZ file. One Work	5	10
	For Additional work	5	
D	Resources with firm		15

i	• Original Arc- GIS software.	6	
	• 10 number computer, one Plotter, and one scanner	3	
	• Auto-cad /equivalent licensed certificate, One DGPS.	3	
	• Total Station Machines minimum 3	3	
ii	One number post graduate Planner and one civil engineer having more than 10 year experience on.	5	10
iii	Two number revenue staff not below the rank of revenue inspector on company pay-role with TDS certificate if applicable or CA certificate	5	
E	ISO certification with best practice recognition at department/state/national level (certificate is to be produced)		5
F	Experience of preparation of land acquisition proposal up to the stage of section 4 notification for any engineering project.	10	15
	For extra project	5	
G	Annual audited Turnover of the firm in any year of the last three years		10
i	More than 1 crore but less than 2 crore	4	
Ii	More than 2 crore but less than 3 crore	6	
iii	More than 3 crore	10	
		Total Marks	**100**

(i) If the bidder scored less than 50% than bid will technically be rejected.
(ii) All Bidders are requested to submit the notary certified documents with page numbering and signing on each and every page. The financial turnover and manpower on company payroll documents shall be certified by the C.A.
(iii) The Bidder who will score minimum 50 marks will be declared as eligible Bidder for opening of the financial bid.
(iv) No additional documents shall be procured after submission of bid. Any shortfall shall be liable for the rejection of the bid.
(v) That JDA can have negotiation as deemed appropriate for the reasonability of the consultancy fees to be paid.

Deliverables by JDA:

a) Land details, incase if it is not available with JDA same has to be obtained by the agency from Revenue Department. Necessary charges shall be deposited b JDA (If Any)

b) Cadastral maps, incase if it is not available with JDA same has to be obtained by the agency from Revenue Department. Necessary charges shall be deposited b JDA (If Any)

c) Sector Plans.

d) Master Plan Tiles.

e) All JDA commitments like reservation letters, approved schemes, JDA schemes, Group Housing Patta, and Land allotment etc. These details have to be collected by the agency from respective DC office or from other wings of JDA.

f) GT Sheet in Hard Copy.

Deliverables by Consultant:

- Geo referenced Cadastral Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Geo referenced Sector Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Land Detail Plans (LDP): Land Detail Plan of each road with complete details of each "khata". On the reverse side of the plan in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. For each Sector Road a separate volume is to be prepared.
- Processing of prescribed procedure for Notification of "No Construction Zone" in accordance with JDA Act 1982.
- Land Details: Land details in desired format for road area and commercial strip for each road in tabular format in bounded form.
  - Bench Mark Details-(Ref.Fig.8&10)
  - Control Point Details (as per Fig.5,6 and 9).
  - Demarcation of each road on ground.

As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, looking to the quantum of work to be procured is very large and it may not be in the capacity of single Bidder, whose bid is accepted. So L1 will be awarded minimum 30% work, remaining quantity may be subdivided among participant bidders at the approved rate, in order of higher to lower QCBS score, as per the requirement.

Executive Engineer-Sector Roads
JDA, Jaipur

Signature of bidder/Authorized representative

12.3 TERMS OF PAYMENT:

The work has to be carried out to the satisfaction of the JDA. The bills for various stages of work will be presented by the Bidder to JDA. The payment will be made to the Bidder after examination and approval of the relevant work by JDA. The payment will be made in stages as stipulated below:

Payment Schedule (Each Sector-wise)

Based on Road length and AOI (ROW+Commercial Strip) Area.

S. No.	Description of work	% of stage wise Payment	Cumulative %
1	• Establishment of control points (BM) and grid points as per technical specifications. Minimum threeBench Mark points for each sector. • Ground Checking/verification.	5% - One Month from date of W/O	5% - One Month from date of W/O
2	• Collection of Land records, khasra maps/ cadastral maps, JDA commitments and sector plans. • Mapping of Khasra maps/ cadastral maps, JDA commitments and sector plans with control points and grid points. • Vectorisation of cadastral maps, JDA commitments and sector plans • Ground Checking/verification.	5% - One Month from date of W/O	10% - One Month from date of W/O
3	• Superimposition of sector roads, commitments on khasra and Google. • Checking and verification. • Creation of KML/KMZ files	10% - Two Monthsfrom date of W/O	20% - Two Months from date of W/O
4	• Compiling of Land Details for ROW and commercial strip. • Core GIS, Linking of data • Checking and verification. • Uploading these details on server.	30% - Three Months from date of W/O	50% - Three Monthsfrom date of W/O
5	• Demarcation of center line, road boundary & commercial strip as per JDA specifications on ground. • Ground checking and verification.	20% - Four Months from date of W/O	70%- Four Months from date of W/O
6	• Initiating and completion of complete process of notification of land details in accordance to JDA Act1982 for ROW as "No Construction Zone".	10% - Five Months from date of W/O	80%- Five Months from date of W/O

7	• Planning work of commercial strips • Documentation Work • Establishment of Project Server • Uploadingcomplete work on server as per the directions of JDA.	10% - Six Months from date of W/O	90%-Six Months from date of W/O
8	• After six months of satisfactory completion of work.	10% - One Year from date of W/O	100% - One Year from date of W/O

4. Indemnity

<BIDDER> shall indemnify JDA from any error or negligence in work including the professional services provided by the <BIDDER>. They will also bear the responsibility of clarifying issues that may crop up at alter stage upto a period of one year after the completion of contract and making corrections thereof without any additional charges.

5. Liquidated Damages (LD)

a If the Bidding Firm fails to complete the various jobs assigned to him as per the scope of the work in the given time, he is liable for compensation. He shall, without prejudice to any other right or remedy is liable for compensation @ 1% per week (of the unexecuted amount) or such smaller amount as may be fixed, by JDA on the contract value. When delay in completion of the work / part work amounts to less than a week the compensation payable shall be proportional to the number of days involved provided that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the contract value of the work. The amount of compensation may be adjusted or set off against any sum payable to the Bidding Firm under this or any other contract with the JDA, Jaipur.

The Engineer-In-charge shall keep a watch as to whether the actual progress of work is as per the time schedule and in case the bidding firm defaults in achieving progress on works at intermediate stage as per this schedule and continue to do so even after 15 days after a notice in writing from the Engineer-In-charge, the Bidding Firm will render himself liable to action as provided above.

6. Time Line

S. No.	Description of work	Time Period
1	• Establishment of control points (BM) and grid points as per technical specifications. Minimum three Bench Mark points for each sector. • Ground Checking/verification.	One Month from date of W/O
2	• Collection of Land records, khasra maps/ cadastral maps, JDA commitments and sector plans. • Mapping of Khasra maps/ cadastral maps, JDA commitmentsand sector plans with control points and grid points. • Vectorisation of cadastral maps, JDA commitments and sector plans • Ground Checking/verification.	One Month from date of W/O
3	• Superimposition of sector roads, commitments on khasra and Google. • Checking and verification. • Creation of KML/KMZ files	Two Monthsfrom date of W/O
4	• Compiling of Land Details for ROW and commercial strip. • Core GIS, Linking of data • Checking and verification. • Uploading these details on server.	Three Months from date of W/O
5	• Demarcation of center line, road boundary & commercial strip as per JDA specifications on ground. • Ground checking and verification.	Four Months from date of W/O
6	• Initiating and completion of complete process of notification of land details in accordance to JDA Act1982 for ROW as "No Construction Zone".	Five Months from date of W/O
7	• Planning work of commercial strips • Documentation Work • Establishment of Project Server • Uploading complete work on server as per the directions of JDA.	Six Months from date of W/O

7. **Termination**

If it is found that work is not being executed according to Terms of Reference or work is being delayed without sufficient reasons, the work may be terminated by JDA at any point of time after giving due notice without any liability on the part of JDA.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as or" the day and year first above written.

FOR AND ON BEHALF OF

JAIPUR DEVELOPMENT AUTHORITY **Witness**

FOR AND ON BEHALF OF

NAME OF BIDDER **Witness**

SCHEDULE – X

PRICE SCHEDULE

Details of Total Work Sector Wise

SECTOR	160 ft. ROAD (in Mtr.)	200 ft. ROAD (in Mtr.)	300 ft. ROAD (in Mtr.)
SECTOR 29	6990	15480	
SECTOR 30	8475	9430	
SECTOR 31		8860	
SECTOR 32,33,44,46		7500	
SECTOR 34	3120	1805	
SECTOR 35	23250	1650	2820
SECTOR 36	10190	3900	4040
SECTOR 37	8850	4280	6850
SECTOR 38 TO 42	24575	8470	
SECTOR 43		29340	
SECTOR 44		30085	
SECTOR 46	8450	7215	
SECTOR 47		18615	
SECTOR 56 A	1460	4325	
SECTOR 56 B		4055	
SECTOR 56	750	9565	
SECTOR 63	3930	2970	2420
SECTOR 66	2580	7340	
SECTOR 67	2415	5730	4790
SECTOR 70	11565	3605	2830
SECTOR 73		4725	
SECTOR 74	2240		2700
SECTOR 75			4680
SECTOR 78			2790
SECTOR 80		13000	1600
SECTOR 81	1160	3055	4480
Total Length (Mtr.)	**120000**	**205000**	**40000**
Total Length (Km.)	**120**	**205**	**40**

Name of Bidder: _____

We have read the Job Description, Terms and Conditions for the below mentioned work:

"Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads". (NIB No. 08) and we quote our lump sum price for the work inclusive of all taxes but excluding service tax applicable as:

Rate to be quoted on the basis of Area of Operation/Area of Interest (AOI).

Area shall be calculated as **:(ROW + Commercial Strip) X length of Road**

Example: For 48m Road (ROW) for I KM length

Area of AOI: (48 + 2x24) x 1000 = 96000 Sqmarea

Rate Per Sqmt Area of AOI:

In Figures: Rs._____

In Words: Rupees _____

_____

Note: Service tax will be paid as per applicable law.

Signature of bidder	
Name with full address and contact no.	
E-mail ID:	

Signature of bidder/Authorized representative

SCHEDULE - XII

Technical Specifications

1. SCOPE

I. Collection of Records

a. Land records.
b. Cadastral Maps.
c. Sector Plans.
d. JDA Commitments.
e. Master Plan Tiles.
f. GT Sheets of Survey of India of minimum possible scale.

II. Computerization of land records, Cadastral Maps and Sector Plans

a) Data entry/re-entry/data conversion of all textual records including mutation records and other land attributes data
b) Scanning of Cadastral maps
c) Digitization of cadastral maps
d) Digitization of Sector maps (If Required)
e) Integration of textual and spatial data
f) Creation of KML/KM2 files

III. Control Points Establishment (as per Fig.5,6, 9 &11)

a. Geo referenced Control Points (GCPs) (Minimum three each Sector)
b. Reference Station in the Centre of the Study Area (Each Sector)
c. Primary Control Points in the Centre(16KmX16 Km)
d. Secondary Control Points (4KmX4 Km)
e. Tertiary Control Points
f. Auxiliary Control Points
g. Creation of KML/KMZ files

IV. JDA Commitments Incorporation

a. Details from each Zone has to be collected
b. Creation of Vector Layer
c. Geo referencing
d. Superimposition on Base Map
e. Linking of required Data

V. Core GIS

a) Village index base maps by geo-referencing cadastral maps with satellite imagery/Google/Yahoo/Bing Maps, for creating the core GIS.
b) Integration of three layers of data: Point, Line and Polygon
   i Spatial data from aerial photography or high resolution satellite imagery/Google/Yahoo/Bing Maps;
   ii Survey of India and Forest Survey of India maps (GT Sheets);
   iii GIS-ready digitized cadastral maps from revenue records. Once the basic khasra wise data is created by the States/UTs, seamless integration would be possible for micro and macro-planning and other relevant applications.
   iv GIS-ready digitized Sector maps; and
   v GIS-ready Master Plan Tiles

Vİ GIS-ready JDA Commitments

VI. Demarcation Work (As Per Fig.1)
VII. Preparation of Land Detail Plans
VIII. Notification of "NO CONSTRUCTION ZONE" as per JDA Act 1982
IX. Quality Assurance
X. Documentation, establishment of Project Server and Uploading Data

1. **Data Entry, Updation & Data Verification/Validation Process**

Land records data are available as
(a) textual data, and
(b) spatial data (cadastral maps).
All textual data including the records of rights (RoRs), mutation data and other land attributes data shall be updated and computerized.

1.1 GIS-ready digitization of cadastral maps and their integration with RoRs involve the following steps:

1.1.1 Scanning of the village map or part of the village map and feeding this scanned map into the computer to create a computer image of the map which is known as a **raster map**.

1.1.2 The next step involves going over the outline of the village boundary on the computer image of the map with the mouse and marking the outlines of each khasra. This process, known as **vectorisation**, provides the coordinates of each point on the map.

1.1.3 The software used in the digitization process creates a number of files. Each of these files pertains to a GIS-based layer and each layer consists of three files.

The GIS data are organized in layers. Each layer contains a subset of information that would be present on a regular map, such as

(1) Geographic information (where something is located),

(2) Attributes information (what is located at a specific location), and

(3) Its interlinking information.

The GIS layers are of three types: point layers, line layers & area layers.

2. JOB DESCRIPTION

1. Accurate scanning of original paper-based maps (generation of raster image of the map).
2. Digitization of khasras (drawing digital line on each khasra boundary of the scanned map).
3. Topology creation and closed polygon generation in area layer.
4. Creation of khasra numbers in polygon area layer.
5. Creation of rendered khasra numbers (RPN) and centroid point of each polygon in point layer. The centroid, which is the geometric centre point of the polygon, is where the khasra number is indicated. When the size of the polygon is too small for the number to be written within it, then the last one or two digits are written to represent the original number. This khasra number is called **rendered khasra number**.
6. Creation of in-situ lines, i.e., geographically fixed lines and point symbol (line and point layers).
7. Halka lines of village (i.e., boundary lines of the other two neighbouring villages) and sheet control points (fixed points on earth used while preparing the maps which are also used for future references), tri-junction pillars (pillars fixed at the meeting point of three neighbouring villages), permanent features or marks, old control stations used in earlier surveys, roads, railway tracks, rivers or streams, relay lines of acquisition plans (i.e., demarcation lines of the land proposed to be acquired – relevant only in land acquisition cases), etc., in .shp format of line, point and area layers.
8. Creation of DBF files for point/area symbol and bata (sub-divided) khasras (point and area layers).
9. Creation of GIF files of non-map features (sheet heading, north direction, legends, list of conventional signs, contents of certificate block).
10. Creation of text files in point layer.

3. **Stringent accuracy requirement:**

The digitized map should exactly match the original map, like a contact print, since the dimensions and area of khasras, or the whole village, are to be extracted from the map itself. As such, a difference of 0.25 mm of sheet measurement in 1:3960 scale between the original map and its copy, whether conventional or digitized, gives rise to a difference of about 1 metre on the ground. So, an accuracy of 0.25 mm or higher is desirable and tolerance may be treated as nil to 0.25 mm per metre.

4. Outputs of digitization:

4.1 Vectorised map can be stored in any open GIS format without any loss of freedom, as the conversion from one format to another is built into the software for raster to vector conversion. One of the popular open formats is SHP format, which is essentially a bundle of three formats to store spatial objects in .shp, text data attached to spatial objects in .dbf, and the format for linkage of .dbf and .shp, i.e., .shx. Many popular raster to vector digitization software are available, which can be used, such as R2V, Arch Info or AutoCAD map or any other compatible software with GIS format. These GIS files are to be provided by the digitizing agency/vendor to the Revenue Department in CD media along with a printout of the digitized map.

4.2 About 35 files are generated for a typical GIS-ready village map, namely:

Serial No.	File Name	Description
1.	ViNo.shp	Shape file for Village Map Sheet
2.	ViNo.shx	Shx file for Village Map Sheet
3.	ViNo.dbf	Dbf file for Village Map Sheet
4.	Symb. shp	Shape for Symbol in line layer
5.	Symb. shx	Shx file for Symbol in line layer
6.	Symb.dbf	Dbf file for Symbol in line layer
7.	Symp.shp	Shape file for Symbol in Point layer
8.	Symp.shx	Shx file for Symbol in Point layer
9.	Symp.dbf	Dbf file for Symbol in Point layer
10.	Bnd.shp	Shape file for Sheet Boundary, it denotes the extent of the sheet.
11.	Bnd.shx	Shx file for Sheet Boundary
12.	Bnd.dbf	Dbf file for Sheet Boundary
13.	Centroid.shp	Shape file for the points where to place the Khasra Numbers
14.	Centroid.shx	Shx file for the points where to place the Khasra Numbers
15.	Centroid.dbf	Dbf file for the points where to place the Khasra Numbers
16.	Img.shp	Shape file for the points where to insert the GIF files
17.	Img.shx	Shx file for the points where to insert the GIF files
18.	Img.dbf	Dbf file for the points where to insert the GIF files

19.	Vbnd.shp	Shape file for Village Boundary
20.	Vbnd.shx	Shx file for Village Boundary
21.	Vbnd.dbf	Dbf file for Village Boundary
22.	Scale.shp	Shape file for Scale of the Village Sheet
23.	Scale.shx	Shx file for Scale of the Village Sheet
24.	Scale.dbf	Dbf file for Scale of the Village Sheet
25.	Text.shp	Shape file for Texts of the Village Sheet
26.	Text.shx	Shx file for Texts of the Village Sheet
27.	Text.dbf	Dbf file for Texts of the Village Sheet
28.	sign.gif	Gif file for Certificate book
29.	Sym_bata.dbf	Dbf file for conventional signs or symbol along with the reference of bata khasra no.
30.	missp.dbf	Dbf file for Missing Khasras in Village Sheet
31.	first_last.dbf	Dbf file for First & Last Khasra Number for Village Sheet
32.	lege.gif	Gif file for legends
33.	name.gif	Gif file for Map Heading, i.e. it contains the District name, Village name, Idn etc.
34.	bata.gif	Gif file for list of bata
35.	Idn.tif	TIF image file for Village Map Sheet(raster image)

Sometimes, the legend is broken into more than one file. These files are named lege1.gif, lege2.gif, lege3.gif and lege4.gif. Accordingly, the total number of files varies from 35 to 38.

5. Methodology for digitization:

5.1 The process involves

I. scanning of maps to produce raster data,

II. checking the dimensional accuracy of the raster data,

III. garbage cleaning in the raster data,

IV. vectorising the raster data,

V. cleaning the vector data,

VI. topology building, i.e., building each khasra polygon as a totally connected entity, to ensure that all the polygons are closed and connected;

VII. data integration,

VIII. map composition from different layers, and

IX. Integration of regional language script as label.

Sl. No.	JOB DESCRIPTION	Responsibility
1	Putting label of village code, whether RS or LR map and the sheet number sticker on the map sheet	Department Employees (DA)
2	Handing over the labeled map to the vendor for digitization	DA
3	Scanning of original paper based maps.	Agency (EA)

4	Study of original paper map for dimension extraction. This is to measure the dimensions of any two points in the horizontal and vertical directions in the original paper map	EA
5	Adjustment of scanned raster map with the measurement as available in Sl. No. 2.	EA
6	Digitization of khasras using R2V, Arch Info or AutoCAD map or any other compatible software with GIS format.	EA
7	Cleaning up of map, topology creation and closed polygon generation using AutoCAD map software	EA
8	Creation of khasra numbers and attaching text database with the spatial data	EA
9	Quality checking to account for all khasras and khasra numbers available in the map	EA
10	Printing for dimensional accuracy-checking of all khasras	EA
11	Comparison of print with original for accuracy checking	EA
12	Refinement of digitized map with respect to Sl. No. 9 and repeat of Sl. Nos. 9 and 10 till desired accuracy is achieved	EA
13	Quality checking for correctness of khasra numbers as attached	EA
14	Creation of rendered khasra numbers (RPNs) and centroid points	EA
15	Creation of in-situ lines and point symbol	EA
16	Quality checking to ensure that all symbol are considered and coded correctly	EA
17	Creation of DBF files for point/area symbol and bata khasras	EA
18	Creation of GIF files	EA
19	Handing over the print copy for checking correctness	EA
20	Checking of print copy with the original	DE
21	Handing over the soft copy	EA
22	Soft copy check (availability of files - 35-38 numbers)	DE
23	Generation of complete map from the files available and also digital RoR database using software developed by the NIC	DE
24	Printing of composed map in 120 GSM paper for preservation	DE
25	Software checking of areas extracted digitally with that available in the RoR for each khasra. This provides an error report showing khasras whose areas in the RoR do not match with the areas extracted digitally.	DE
26	Error report is sent to districts for review and correction	DE
27	Integration of RoR data with spatial data using the software developed by the NIC (explained in detail below)	DE
28	Map and record correction through the software developed by the NIC (explained in detail below)	DE

5.2 **Scanning and dimensional accuracy**

5.2.1 The original map is scanned to produce the raster form. For cadastral map, scanning may be done in 400 dpi (dots per inch). Special attention should be given to see that the map is not deformed dimensionally. For this purpose, —X (cross) marks are placed at corners of the original map before scanning. In the next step, the lengths between the —X marks of the original map are compared with those of the scanned map to check whether any differences exist. Finally, raster

editing is done for the elimination of unwanted patches in order to enhance vectorisation of the raster data.

5.2.2 Dimensional accuracy of the raster data implies total correspondence between the raster data and the original map. The following procedures are used to achieve dimensional accuracy:

I. Checking for expansion.

II. Checking for contraction.

III. Checking for translation.

IV. Checking for rotation.

5.3 **Vectorizing, topology building and data integration:**

5.3.1 The raster data may be converted to vector data using raster-to-vector converting software. The Semi-automated method is preferable, because traverse lines may have some breaks which can be corrected through this method during the process of vectorisation.

5.4 **Testing of correctness of the digitized map:**

5.4.1 **Map composition and query retrieval:**

Note: IMPORTANT

1. The —.shp , —.shx and the —.dbf files for the village containing the area and the line layer should be named as —<VINo>.shp , —VI.shx and —VI.dbf respectively. Thus, if the VI No. of a village is 100, then the three abovementioned files should be —100.shp , —100.shx and —100.dbf respectively. The files are to be placed in the —VI No. subdirectory under the corresponding —PS Code directory in the following format:

<PS Code> \ <VI No.> \ <VI No>.shp
<PS Code> \ <VI No.> \ <VI No>.shx
<PS Code> \ <VI No.> \ <VI No>.dbf

Thus, if for a particular village, the PS (Panchyat Samati) Code is 50 and the VI No. is 100, then the files corresponding to the layers of that village should be organized as follows:

50 \ 100 \ 100.shp
50 \ 100 \ 100.shx
50 \ 100 \ 100.dbf

2. If the village map comprises of more than 1 sheet, then the files for all the sheets are to be given the same names and as per the convention mentioned in point 1 above. However, in order to avoid controversy, the files must be kept in different subdirectories denoting the sheet number under the —VI No directory, which itself is kept under the —PS Code directory. Thus, if the village map with VI No. 100 (see the example in point 1) comprises of 2 sheets then the file should be organized as follows:

For sheet no. 1	For sheet no. 2
50 \ 100 \ 1 \ 100.shp	50 \ 100 \ 2 \ 100.shp
50 \ 100 \ 1 \ 100.shx	50 \ 100 \ 2 \ 100.shx
50 \ 100 \ 1 \ 100.dbf	50 \ 100 \ 2 \ 100.dbf

3. The layers for the images and the symbol need not be qualified with their corresponding VI Nos., but they must be kept in the same directory along with the layer files mentioned in the above two points. The files will be named as centroid.shp, Symp.shp, Symb.shp, scale.shp, bnd.shp, mbnd.shp, img.shp, Sym_bata.dbf, first_last.dbf, missp.dbf, name.gif, lege.gif, bata.gif, sign.gif, etc.

4. The attribute field giving the khasra number of each khasra of the village is a compulsory field. It must be a 5-character field and have the name —khasrano .

5. The list of conventional symbols for the symbol as followed by the department should be referred whenever required.

6. For symbols, which are not —in-situ , the points of insertion of the symbol are to be given at the approximate center of the symbol in the point layer for symbol.

7. The scale for each map should be digitized and provided as a separate line layer along with the other layers for the village. The base name of the files for the line layer for the symbol must be —scale , i.e., the —.shp file for the line layer must be —scale.shp . The names of other necessary files (.shx, etc.) for the same line layer must be given accordingly.

8. The values in the different attribute fields in the various layers should be left justified.

6. Integration of map with RoR

6.1 Each khasra of land is represented on the digital map as a closed polygon. Such polygons are identified by a unique 5 digit number, that is, its khasra number. In the RoR database, such khasra numbers are referenced. This provides a basis for integration of digital map with the digital RoR data.

6.2 The following is the general description of the scope of the work of digitization of the cadastral village maps, geo-coding and their integration with textural data (RoR):

I. The village cadastral maps will be traced on to tracing film/paper wherever required, scanned and grid-corrected.

II. These maps will then be vectorized and labeled, khasra-wise.

III. The khasra-wise information will then be attached uniquely to identify with the help of key identifier to obtain the details of each khasra.

IV. A grid-corrected map of the original sheets has to be provided in hard copy format.

V. The sheets will be edge-matched, mosaiced, and the topology created as per the conventions specified.

VI. The mosaiced digitized maps will then have to be converted to GIS format and transformed using ortho-rectified geo-coded High Resolution Image/Google/yahoo/Bing maps.

VII. The accuracy standards should be maintained as per the pre-specified spatial framework, projection system, co-ordinate units, tolerances, feature-coding scheme, etc.

VIII. The deliverables have to be provided in proper format, structure, precision and metadata, as specified, so that they are ready for use with other revenue-related activities.

7. STEPS FOR DIGITIZATION OF CADASTRAL VILLAGE MAPS

The process of digitization can be summarized in following steps :

1. Collection of analog cadastral village maps (sheet-wise)
2. DQC-1 (Input data evaluation)
3. Tracing or re-production of the analog map
4. Sheet indexing and scanning of the analog maps (converting analog to raster cadastral images)
5. DQC-2 (check DPI, format, quality, speckle removal and cleaning)
6. Grid correction of the scanned (raster) map
7. DQC-3 (grid overlay checking with scanned map)
8. Feature abstraction from the scanned map

9. DQC-4 (check for the accuracy of the type, location and attributes)
10. Layout and printing hard copy for evaluation by the JDA (EXPERT COMMITTEE)
11. DQC-5 (detailed checking of the digitized features by the EXPERT COMMITTEE)
12. Incorporation of the corrections suggested by the EXPERT COMMITTEE
13. Sheet mosaicing of a village
14. DQC-6 (feature continuity and attribute carry forward)
15. Conversion of the digitized data into topologically-correct GIS data format
16. DQC-7 (checking for GIS feature conversion, attributes, null and duplicate errors)
17. Final deliverables (hard copy print and GIS data for geo-coding)
18. Metadata preparation

7.1 Collection of the sheet-wise analog cadastral village maps

Before executing the project, availability of sheet-wise cadastral maps have to be ascertained. The maps should be up-to-date and in good condition. The condition should be such that it can be scanned through a contact (roller) scanner or a flat-bed scanner (prefer flat-bed scanner). The DQC-1 has to be performed at this stage before it is sent for scanning. The quality check procedure will include the condition of the map – it should not be a cloth mounted, nor be torn or ragged, and not have too many folds. The control points (tics) should be available. The features of the map should be clear and distinguishable. Khasra number (khasra no.) should be distinct and readable. All symbols (*symbol*) should be distinct and properly understandable. Once found acceptable on all the above-mentioned characteristics, the sheet is tagged suitable for scanning.

7.2 Tracing or re-production of the analog map

If the sheet is not suitable, then the sheet has to be sent for tracing (preferably on a 75-100 GSM mylar film) or reproduction of the sheet. The reproduced sheet has to be quality checked (DQC-1) and finally sent for scanning. The maps are to be traced using the following specification:

- Tracing to be done on 75 micron polyester film.
- Tracing should be done with 0.1 pen using black ink only.
- All the features should be traced.
- The labels should be placed neatly in the center of the feature with free hand drawing.
- In case the feature is too small to accommodate the label, it should be placed at a convenient location with a marker arrow.
- The heading and legend data should also be traced along with scale, north arrow, sheet no., etc. along with map border.

7.3 Sheet indexing and tics (tick-marks) high lighting

7.3.1 All sheets have to be indexed with appropriate index numbers. The index number is to be generated using the village metadata with respect to the various administrative codes (State, district, tehsil, and revenue inspector/patwari/thana/village and village code). The index number should be a unique number with information of the administrative hierarchy of the village. A typical example of index number may be 120501007035101 (DDTTRRHHHVVVVnn).

7.4 Scanning of the analog maps (converting analog to raster cadastral images)

7.4.1 The cadastral maps are scanned using AO size raster scanner. While scanning, the important parameter -- DPI (dots per inch) -- has to be precisely set. The DPI is based on drawing characteristics and information required. In general, the following minimum specifications should be adopted while scanning the cadastral sheets: Maps should be scanned at 100-200 DPI Black/White (8 bit gray tone) mode depending upon the density of the features. If all the details are not picked up during scanning, the scanning parameters should be changed to 400 DPI on 24-bit color. While scanning, the sheet has to be fed in straight upright position and smoothened so that any fold is not generated while scanning. In the flat-bed scanner, the map has to be laid flat on the glass, smoothened and scanned; and bulging should be avoided.

7.4.2 After successful scanning, the DQC-2 procedure has to be followed. The raster image of scanned map should be stored in TIFF format (*.tif or tagged image format). The scanned map orientation should be upright (north oriented). The scanned map should be cleaned and free from noise (i.e., unnecessary pixels or darkness in the image). To remove the noise, de-speckling should be applied. The measured length and width within the bounding box of the scanned map should be +/-0.1% of the map manuscript measurements. The scanned image should not be skewed or warped; if there are any, it should be de-skewed or necessary correction should be applied, or it should be re-scanned. The scanned image should not have any line dropouts or stretched pixels; otherwise, it will have to be re-scanned. The scanned file will take the name of map index name, such as **I120501007035101.tif**

7.5 Grid correction of scanned cadastral map

7.5.1 Even after appropriate quality checks during the scanning process, there can be few errors due to machine specification and scanning techniques. There can be also some distortion in the input manuscript (analog cadastral map). The scanned map may carry forward the errors due to differential scanning, wear and tear or differential shrinkage/expansion. The net result may be non-uniform scale at parts of the map, deflection in north orientation, etc. To make the map plani-metrically accurate, rectifying the map with the vector grid is suggested.

7.5.2 Prior to the correction, selection of the appropriate grid has to be made. The grid is scale-dependent. Generally, the grid found on 1:3960 (16 =1mile) will be placed at a distance of 10 zaribs (i.e., 50.8 cm or 2.00000008 inch); the maps with 1:4000 scale will have a metric system grid and will be placed at a distance of 25 cm.

Each sheet will have 10 X 14 grid blocks in 1:3690 scale, or 20 X 28 grid blocks in 1:4000 scale sheet. After ascertaining the scale of the maps under consideration, appropriate mathematical grid has to be generated.

7.5.3 After selecting the appropriate grid, the cadastral scanned maps have to be registered with the grid.

- **Gridlines and tics are available** - The highlighted tics in the scanned map have to be stitched/tagged with its appropriate intersections of the gridlines of the mathematical grid and then transformed.

- **Four corner tics available** – The highlighted four corner tics in the scanned map have to be stitched/tagged with its appropriate intersections of the gridlines of the mathematical grid and then transformed.

- **No gridlines and tics available**– This needs to be executed in two steps:

  (a)The transferred tics before scanning are to be stitched/tagged with its appropriate intersections of the gridlines of the mathematical grid which was used to transfer the tics. Then first transformation is made. This will remove the scanning distortion, if any.

  (b)Comparing the available graphical scale of the map with the mathematically generated graphic scale of the same type and then registering the scale and transform. This may correct the distortion of the map scale, if any.

7.5.4 The process should eliminate the possible warping effect of cadastral maps. High accuracy and low residual error are to be achieved in grid correction of cadastral images. The transformed rectified cadastral scanned image is termed as registered scanned cadastral map and can take the name such as R120501007035101.tif. The quality check DQC-3 is performed on the image to see whether the gridlines overlay with the tics of the map. If the errors are not within the acceptable limits, re-registration has to be performed.

7.6 Feature abstraction from the grid-corrected scanned cadastral images

7.6.1 Template creation: Before starting the vectorization, a standard template has to be created. In the template, the layer name, line type, color and thickness for each feature (e.g., khasra, roads, canals, river, etc.) present on the map is standardized. Different graphical representation (symbol-*symbol*) in the map is to be standardized as point features with proper layer name, symbol and colour. This maintains uniformity in all the map outputs. The template also holds various mathematical grids, graphical scales, and other map features like north arrow, boundary lines, headings and other permanent annotations. A symbol library is created, which contains the various symbols shown in a village map. The symbol library gets depicted in the legend of the template. The main intention behind this is to maintain the uniformity over all the village maps that are digitized. The template should also address the font type of the annotation in the maps. Generally, UNICODE system is adopted with proper font for depicting the local language script.

7.6.2 Feature abstraction is the process of capturing the point, line, and polygon features as vectors and text as annotation. The grid-registered scanned cadastral map sheet is displayed in the background, the required environment settings for digitization are set, and the required features are captured into different layers (based on the feature type). During digitization, attributions to the features will also be done. Only heads-up manual digitization should be carried out. Auto-vectorisation should not be attempted. Error should be within permissible limits for digitization, viz., weed tolerance, coordinate movement tolerance, sliver polygon tolerance, coordinate unit, planimetric errors, fuzzy tolerance, etc.

7.6.3 The uniformity in layers, line type, color, annotation, etc. during digitization will be maintained by using the template, as described above, to capture all the features in their respective layers. The final output of this process will be a digital map which will be a true copy of the paper map, along with necessary legends, scale bar, north arrow, borders, etc.

7.6.4 Once the digitization process is over, the DQC-4 is performed. This process assures the features abstracted from the scanned map sheets are true in its type (i.e. point, line or polygon), accurate in location and its attributes. Tag should be maintained wherever the feature/annotation could not be read along with null and duplicate errors. The errors have to be reported in the draft output map, which will be sent to the EXPERT COMMITTEE for through checking.

8. Guidelines for feature digitization/abstraction

8.1 The general specifications for digitization are given below:

I. The data is to be digitized using heads-up digitization.
II. The features are to be captured such that the polygon features are put in one layer, the line features are in another layer while the points are in a different layer.

III. The lines are to be digitized as polylines only, coincident lines are to be digitized once and copied to appropriate layer.
IV. Feature specific codes are to be assigned uniquely as given in the format.
V. The data should be topologically correct for each of the layer.

8.2 The accuracy requirement and specifications for each of the type of features is indicated below:

8.2.1 Polygon feature specifications

- The khasra boundary should be digitized in such a manner that the resulting vector line falls in the center of the raster data image element being vectorized.
- The khasra boundaries are generally straight, hence should be digitized using 2 nodes/vertices in keeping with the shape of the polygon.
- The feature should be digitized in such a manner that there is no overshooting or undershooting of arcs, or duplicate arcs.
- The feature should be captured with specked symbol.
- The feature should be digitized with minimal number of vertices while, at the same time, maintaining the smoothness or angularly of the lines, as the case may be.
- The feature should be a closed polygon without any dangles or sliver.
- Each polygon should have a unique PIN as per the coding scheme indicated below.
- The tolerance values for arcs, node snapping and vertices should be such that the features snap within the pixels defining that feature and do not snap outside.
- All features like khasras, roads, rivers, etc., which form the polygons, are to be digitized and coded as per the coding scheme.
- The connectivity of the rivers/roads is to be maintained and should not be disjointed.
- The label (khasra no.) should be placed in the center of the feature.
- Nodes are to be added wherever symbols are depicted on the khasra boundaries.

8.2.2 Point feature specifications

The features shown on maps as points, like wells, temples, trees, etc., are to be digitized as point features, for which the digitizing rules and coding scheme are given below:

- The feature should be digitized as a point placed at the center of the raster image defining it.
- There should only be one point at one location.
- Each feature should have a unique ID.

8.2.3 Line feature specifications

The linear features shown as single line arcs on the map or linear double line features or symbols like rivers, roads, pipelines, etc. are to be digitized and compiled into the line layer for the village. The single line arc features, whether shown as continuous lines or broken lines, are to be captured from the map image. In addition to this, the double line roads, rivers, pipelines, etc. from the polygon coverage are also to be put into the line coverage. The feature coding guidelines are given below:

- The river/roads depicted on the image represent the outside edges in case of double line features and should be digitized as such. The resulting vector should not deviate from the pixels defining it. These features should be captured only once and copied into the appropriate layers before building the topological relationships.
- The feature should be vectorized in such a manner that the shape is captured and retained as it is.
- The feature should be vectorized using optimum member of nodes/vertices so that the shape is retained and does not appear jagged.

- The continuity of the features such as rivers, roads, etc. must be maintained across the map sheets.
- At crossings, the features should be digitized with or without intersection, as the case maybe.
- In case of single line features, they should be captured as a single continuous feature from one end of the feature to the other end without break.
- In case of double line features the centerline should not be digitized. This will be represented by appropriate symbol.
- There should not be any gap between two connecting features, nor any over-shoots; the features should be snapped to connecting features.
- The features should be coded as per the coding scheme.

8.2.4 Attribute data specifications

Attribute data for each khasra is attached in the text layer. The khasra number and khasra land use are the two main attributes that are linked to the village polygons. Khasra number is the primary key for linking of RoR details.

9. Layout and printing hard copy for evaluation

9.1 Hard copy color output would be generated using the template decided upon by the JDA concerned for the purpose, as described above. The first draft hard copy is generated at the original scale of input map for each sheet. Good quality paper is used for printing the digitized map. The color scheme and paper thickness should be according to the standards specified for printing and is to be decided by the JDA.

9.2 The officers from the concerned Zone dealing with land records/maps should carry out 100% validation of the hard copy color output (DQC-5). The output will be validated completely for physical dimensions, khasra size, shape, numbering, feature location and coding, annotation, etc. The corrections are marked on the output and are to be incorporated in the digitized digital data.

9.2.1 Quality check guidelines on hardcopy output by JDA

Input:

- Khasra output at A0 size generates at the true scale A3 size output depicting zero fills and duplicate labels.

Process:

- The quality check is carried out on total population (100% data) and there is no sampling involved in this quality check.
- Check for the color scheme in the hardcopy output with reference to the template designed for this project
- Check for content, size and color of the various elements of the map Check for the logo details:
  - Group number
  - Village number
  - Bandobust number
  - Village name
  - Halka number
  - Halka name
  - Revenue Inspector (RI) circle name

- RI circle number
- Tehsil name
- District name
- Year
- Scale
- Sheet number

- Check for legend details
- Check for title disclaimer details
- Project name ○ Map title
- Generated for ____
- Generated by _____
- Check for sheet index
- Check for north arrow
- Check for the dimensions of the grid cells and the map with reference to the original map used for digitization
- Check for feature matching
- khasra boundaries
- khasra number
- khasra attributes – zero fills, duplicate labels
- part khasras, combined khasras, etc.

  The features to be checked are:

  - Permanent khasra boundaries, temporary khasra boundaries, paddy bund boundaries, village boundaries, etc.
  - Drainage and water body details
  - Road network, rail network, cross drainage details, etc.
  - Traverse lines and points details
  - Forest boundary details
  - Historical, religious places, etc.
  - Amenities details
  - Settlement locations, etc.

- After validation by the EXPERT COMMITTEE, check for the signature of the validation officer from EXPERT COMMITTEE for authenticating the quality check
- Check for the list of all khasra numbers provided on A3 size with reference to the details available from the EXPERT COMMITTEE

9.2.2 Incorporation of the corrections suggested by the EXPERT COMMITTEE

The draft hard copy color output, checked and corrected in all aspects by the JDA is compared with the digital data. The corrections suggested by the JDA/EXPERT COMMITTEE are incorporated in to-to. Special checks have to be performed to certify the incorporation of the error-corrections. After the correction of each sheet, the sheets pertaining to each village is mosaiced.

10. Sheet mosaicing of a village

Village-level mosaicing is done by joining the individual map sheets of the village to form a complete village map. Edge matching is done by bringing two different map sheets of the same village into the same file and matching their edges with reference to the grid and the features on

the maps. Continuity should be maintained for all the features at the edges and its attributes. Care is taken to eliminate all dangles (undershoot/overshoot) and label errors. On-screen checking is done to check the common edge between the mosaicing maps. One has to ensure the completeness of the polygon features such as khasras, continuity in line features such as rivers, roads, etc. Duplicate features along the edge, especially symbols have to be removed. Finally, topologically correct features for the entire village have to be generated and quality checked. The DQC-6 quality check procedure is for ascertaining the feature continuity and attribute carry forward.

11. Conversion of the digitized data into topologically correct GIS data format

11.1 After mosaicing, the digital data is converted into topologically-corrected GIS data features. The GIS data will have separate point, line, polygon and annotation features. The strength of the GIS features is the establishment of the spatial relationships within and between the various features with respect to position, containment, contiguity, proximity, adjacent and intersection. After establishing the topology, the attribute data in the standard structure should be filled up. The unique primary key and the foreign key are generated. The completeness and accuracy of the attributes are checked by both display and automatic S/W method.

11.2 Null and duplicate attributes lists are generated, both as text file and spatial data outputs. This forms part of the DQC-7 procedure. The error report is again evaluated and checked. Wherever possible, corrections are incorporated, or else tagged with appropriate error codes. The data, at this stage, is ready for the further process of overlaying on the satellite data and query.

12. Final deliverables (hard copy print and GIS data for geo-coding)

The final hard copy print is taken on a paper of specified thickness (preferably 150 GSM of A4/A3 & A1 size) of the actual sheet size for archival. The GIS data in prescribed format has to be stored in the central data center and server and used for further processing of linking with the RoR data.

13. Metadata preparation

13.1 The system and procedures of database generation should evolve a strong metadata, for which the metadata standard has to be designed. The objectives of the standard are to provide a common set of terminology and definitions for the documentation of digital geospatial data. The standard establishes the names of data elements and compound elements (groups of data elements) to be used for these purposes, the definitions of these compound elements and data elements, and information about the values that are to be provided for the data elements.

13.2 The major uses of metadata are:

- to maintain an organization's internal investment in geospatial data,
- to provide information about an organization's data holdings to data catalogues, clearinghouses, and brokerages, and
- to provide information needed to process and interpret data to be received through a transfer from an external source.

13.3 The information included in the standard are based on four roles that metadata play:

- Availability -- data needed to determine the sets of data that exist for a geographic location.
- Fitness for use -- data needed to determine if a set of data meets a specific need.
- Access -- data needed to acquire an identified set of data.
- Transfer -- data needed to process and use a set of data.

Finally, developed metadata will store information pertaining to the each cadastral village map layer and tabular data available from all sources. Future metadata should also describe the updation rate, time and history of the land transaction.

14. QUALITY ASSURANCE

14.1 A comprehensive quality control program for ensuring the quality of data has to be followed based on the criteria provided and permissible accuracy. The measure of accuracy derived based on the allowable limits would fall under one of the following heads, viz., physical accuracy and logical accuracy.

14.2 Physical accuracy

In any data conversion, some amount of variations would creep into the data sets depending on the type of digitization procedures followed and the subsequent projection and transformation methods followed. Following tests would be made to ensure that all the features in a dataset are within the permissible limits:

Point features

- Location of a feature with reference to a standard layer would be the same or within the prescribed limits.
- A feature carries the same information after migration.

Line features

- Variation in length of a line segment selected based on an attribute or combination of attributes.

Polygon features

- Variation in the number of lines that makes the polygon, their length (perimeter) and subsequently amounting to area.

14.3 Logical accuracy

This accuracy corresponds to completeness and correctness of data when a data set is analyzed. Following tests would be performed to ensure the logical accuracy of the data sets:

An attribute query run on the datasets should give a consistent result in terms of

- Number of features selected;
- The content of the features selected.

Any data set resulting out of analysis of two or more datasets should be logical. Any spatial query run on the datasets should give the same result in terms of

- Number of features selected;
- The content of the features selected.

15. DATABASE DESIGN & STANDARDS

15.1 A data design provides a comprehensive architecture for the database to be viewed in it's entirely and evaluated as to how the various aspects of it need to interact. A good design results in a well-constructed, functionally- and operationally efficient database that –

- Satisfies the objectives and supports requirements.
- Contains only required data without redundancy.
- Organizes data so that different users access the same data.
- Accommodates different versions of the data (i.e., allows manipulation and updates).
- Distinguishes applications that maintain data from those that use it.

- Appropriately represents codes and organizes geographical features and their relationships (topology).
- Support interoperability.

15.2 Database standards are an important element of the database design. Standards enable applications and technology to work together, they encourage efficiency and effectiveness, help reduce costs, protect investments in data against technological change, and lead to availability of accurate, compete and current data. Tools, applications and data affect each other, and the standards are established with this condition.

15.3 Database construction guidelines

The digital database prepared under this work should form the base of any further activities, viz., revenue data management (RoR), spatial data management (geo data base), development and updation of land records, etc. Strong database standards, supported with the link to survey/resurvey procedures and future operational and maintenance procedures, are a must. This helps in backward and forward integration of the existing database with the ever-changing database management technology. Broadly, the database construction guidelines can be divided into four major categories under the present scope of digitization of cadastral maps, overlay on the satellite data/Google/Yahoo/Bing maps and integration with textual data:

1. Satellite image database preparation.
2. Digitization (analog to digital conversion) of cadastral village maps.
3. Geo-referencing of digitized GIS data with satellite image/Google/Yahoo/Bing maps data.
4. Metadata generation and achieving of the database for transactional use.

15.4 Procedures for building the database

The elements of the database are to be created as per the standards herein and the vendors/agency/service provider has to take care that digitization is as per the standards. The inputs are subject to validation at each stage and will include qualitative as well as quantitative checks for input and output accuracy.

15.4.1 The creation of a clean digital database (topologically-corrected and geocoded) is the most important and complex task upon which the usefulness of the database lies. Two aspects need to be considered here: one is the geographic data necessary to define where the khasra of land or, for that matter, any other feature is located, and second is its unique identification for associating attributes that link to the records. At every stage, there should be necessary and proper data verification to ensure that the resultant database is as free as possible from error. Errors would generally be of the following types:

- Spatial data are incomplete or double.
- Spatial data are in the wrong place.
- Spatial data are at the wrong scale.
- Spatial data are distorted.
- Spatial data are linked to wrong attributes.
- Non-spatial data are incomplete.

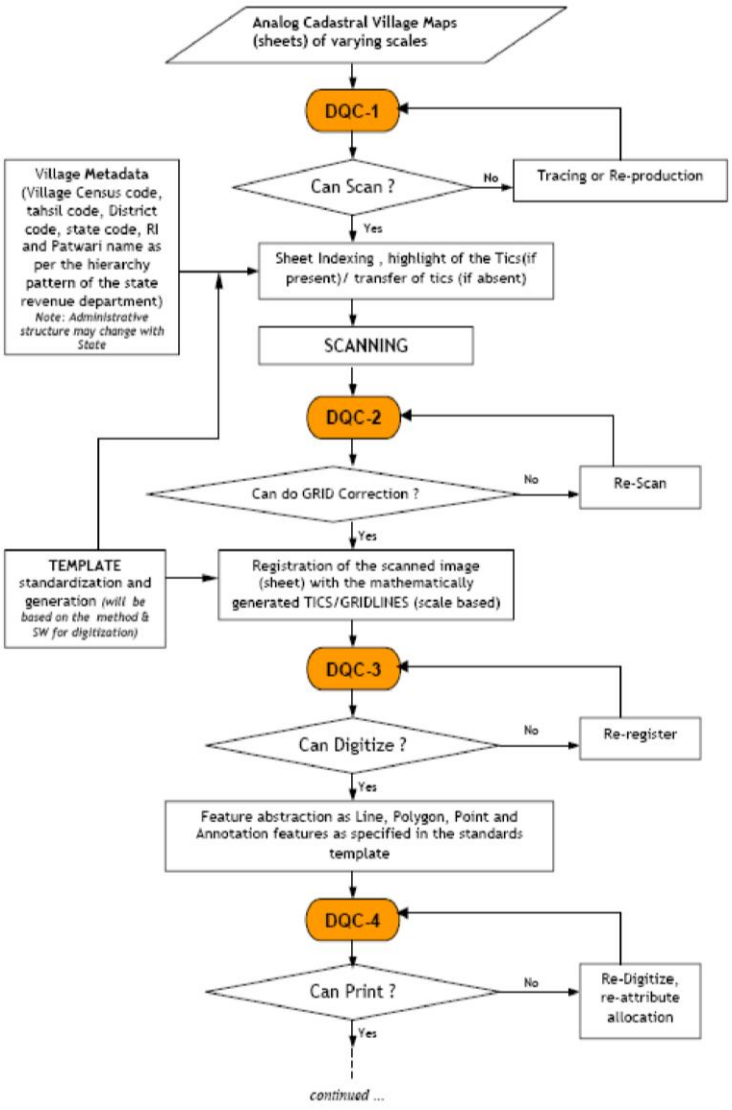
15.5 For evaluating the digital data, the following guidelines/parameters would be followed:

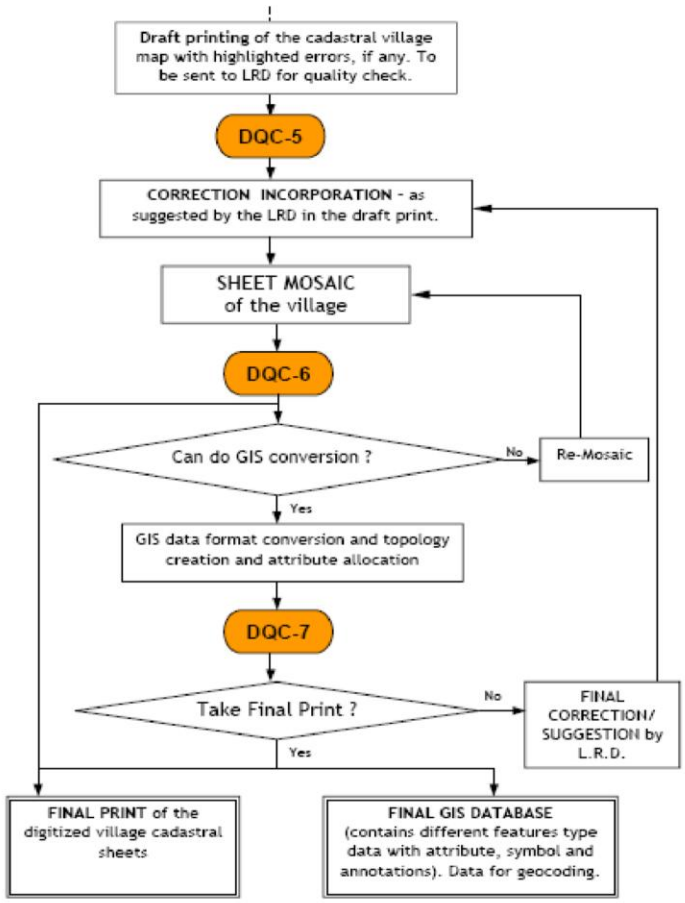
1. Assuring that appropriate digitization methods with proper template, accuracy, precision and quality check procedures are followed.
2. Verification of the co-ordinate system (in CAD); projection and datum (in geo data base).
3. Checks for digitization errors like silvers, dangles, and topology rules.

4. Attribute verification providing the correctness of feature coding by listing it out and comparing with the manuscript maps. Randomly checking a few khasras for shape and form listing of polygons with null and duplicate attributes.
5. Verification of edge-match with adjacent sheets and villages by displaying them side by side.
6. Comparison of the total area of the village by aggregating the khasras, etc. visà-vis the area reported in census handbooks or available with the Land Records Department in the RoRs.
7. Verification of geo-referenced control points (GCPs) and RMS (Root Mean Square) error for the transformation model.
8. Checks for mosaicing of maps and overlay on the satellite data.
9. Attachment of appropriate metadata at all stages of the database preparation.

Note: In case Satellite data is not available then Google/ Yahoo/ Bing Maps or any other WMS maps may be used.

Flow chart for work process:





Digitization Quality Check (DQC 1 to 7) :

DQC-1 : Visual quality check of the analog sheets for visibility, readability, folds/straightness and scan worthy.
DQC-2 : Checking of the digital scanned sheets for DPI, format, quality, speckle removal, scan lines dropout, feature clarity and GRID correction worthy.
DQC-3 : Final checking of the GRID corrected scanned image with overlaid mathematical grid (scale dependent) and approval for the final feature abstraction.
DQC-4 : Quality assurance of the features abstracted from the sheet for its type, location and attribute. Also checking has been done for the unread attributes, features, null attribute and duplicate errors, if any.
DQC-5 : Detail quality checking of the digitized sheet be the Land Record Department (LRD) with detail error reporting and suggestion, if any.
DQC-6 : Checking for the feature continuity and attribute carry forward or loss of features of attribute during the mosaic process.
DQC-7 : Checking for the topologically corrected GIS feature conversion, its attribute allocation, duplicate IDs and Null IDs.

16. Control Point Establishment (as per Fig.5,6,9 &11)

1. **Tertiary control point**

The **tertiary control point** should be used as the reference station for DGPS. The tertiary control point and auxiliary point should be used for TS survey.

The sequence of steps of the DGPS survey is given below:

- Identification of the reference station in the Centre of the study area
- GPS data collection, using dual frequency geodetic GPS receivers, for 72 hours
- Determining the reference station coordinates with reference to International Geodetic Survey (IGS) stations
- Identification of GCP locations in the satellite image
- Collection of GPS data at GCP locations for 3 hours
- Determining the GCP coordinates, with reference to the reference station, in DGPS mode
- Quality verification of GCP coordinates
- All the control points should be based on datums given below:

  Horizontal Datum: WGS-84 (i.e., the latest version of the World Geodetic

  System standard for use in cartography)

  Vertical Datum: MSL, i.e., the Mean Sea Level.

2. **Primary Control Points**

2.1 Horizontal

The primary control points of the Survey of India (SoI), provided by static GPS observation (72 hours) with dual frequency GPS receivers, should be used. The primary control points of the SoI have been post-processed with precise ephemeris adjusted with the help of Bernese s/w to the ITRF co-ordinate system. All the secondary and tertiary control points should be connected to the primary control points of the SoI, to ensure connection to the National Framework.

2.2 **Vertical**

The precision Bench Marks of the SoI should be used as primary vertical control.

3. Secondary Control Points

3.1 Horizontal

The secondary control points of the SoI (Survey of India) should be used, wherever available. In areas where the requisite density of secondary control points (16 km) are not available from the SoI, these should be provided.

i. **Best places for affixation:** In protected areas like premises of government buildings including school buildings, veterinary hospitals, etc. and other protected structures, etc. The selected site should be open and clear to sky with a cut off angle of 15º. High-tension power lines, transformers, electric sub-stations, microwave towers, high-frequency dish antennas, radars, jammers, etc., which interfere with GPS signals, should be strictly avoided.

ii. **Densification:** 16 km average

iii. **Instrument to be used:** Dual-frequency GPS receivers.

iv. **Accuracy levels required:** 1 cm as determined by the residuals of the network adjustment with 95% confidence interval.

v. **GPS network design:** Secondary control points should be observed with a geometrically sound network plan, connected to primary control points of the SoI.

vi. **Schedule of observations:** Observations should be scheduled with proper mission planning, considering the optimum availability and geometric dilution of precision (GDOP) of satellites (i.e., geometric strength of satellite configuration on GPS accuracy). Minimum observation time should be 3 hours.

vii. **Monumentation of secondary control points**

a. Rock-stone or Sand-stone 23*23*75 cm or RCC.

b. The control point should be 15 cm above the ground and 60 cm inside the ground.

c. The control points should be fixed to the ground using at least 15 cm of cement block.

d. Monuments shall bear a triangle on top with a plummet hole in the middle and a 15 cm steel rod inserted (flush with concrete surface).

e. The control point number should be inscribed on the monument.

3.2 Vertical

All the secondary control points should be connected by spirit-leveled heights. The leveling lines for such connections should terminate at precision control points of the SoI and all errors adjusted within them.

Permissible error for leveling line: 0.025 ♪k (in metres), where k is the length of leveling line in km.

4. Tertiary Control Points

i) **Distribution:**

These shall be governed by the photogrammetric requirements of the block of imagery/Google/Yahoo/Bing Maps for which photogrammetric survey is to be carried out. The distribution and location of horizontal, vertical and full control points should be decided after preparing the photo-index with the help of input images.

ii) **GCP selection criteria:**

The selection of location for a control point on the photograph will depend on the identification of the image point and the measurement characteristics of the image point. But, at the same time, they should also meet the horizon parameters (15º cut-off angle). Thus, the criteria for selection of such points should be:

i GCP should be precisely identifiable on aerial imagery/Google/Yahoo/Bing Maps as well as on the ground.

ii GCP should be a sharp point on image and ground.

iii The selected GCP shall be open and clear to the sky, without any obstruction to the sky.

iii) **Post-pointing:**

All tertiary control points should be post-pointed on imagery/Google/Yahoo/Bing Maps (i.e., the points should be identified on the image), preferably in softcopy. If post-pointing on hardcopy is to be done, the control point should be post-pointed at full resolution. In addition, a sketch magnifying the vicinity of control points and their detailed description should be prepared on the ground, to aid the photogrammetric operator.

iv) **Additional points:**

In addition, tertiary control points may be provided on structures like village boundary tri-junction or bi-junction, existing govt./non-govt. buildings like gram panchayat offices, school buildings, veterinary hospitals, etc., as per the field survey requirements.

v) **Instrument :**

Single/Double-frequency GPS, Total Station

vi) **Accuracy levels required:** 5 cm

vii) **Monumentation of tertiary control points**

Since the location of control points will be governed by photogrammetric requirements of the block of images and the selection criteria of the GCP, it will not be possible to construct a monument at most of the tertiary control. However, some additional control points provided with the objective of further survey by TS may be monumented. The specifications of monumentation are as given below:

a. Pillar should be of rock-stone or sand-stone 15*15*45 cm.

b. The pillar should be 10 cm above the ground and 35 cm inside the ground.

c. The pillar should be fixed to the ground using at least 15 cm of cement block.

d. Monuments shall bear a triangle on top with plummet hole in the middle and a 15 cm steel rod inserted (7.5 cm inside and 7.5 cm outside).

e. Provision of a strip of granite to put GPS reading on.

f. The control point number should be inscribed on the monument.

g. In case some modern technology develops later, the details will be circulated separately.

viii) **GPS network design:** Tertiary controls should preferably be observed as triangular offsets. Single offsets should generally be avoided.

ix) **Schedule of observations:** Observations should be carried out with proper mission planning. Minimum observation time should be 45 min to 1 hour.

x) **Vertical control:** Single GPS offset upto 5 km from secondary vertical control may be allowed for connection of GPS heights in WGS 84 datum to MSL heights.

However, such offsets should not be extended.

5. Auxiliary Control Points

i) **Best places for affixation**: Each secondary and monumented tertiary control point shall be paired with one auxiliary control point, which should be located on permanent structures like bridges, culverts, permanent building corners, etc. The auxiliary control points should be within the line of sight from the primary, secondary and tertiary control points.

ii) **Densification:** There shall be one auxiliary point for each secondary and tertiary control point, typically 200 m or more.

iii) **Instrument:** Dual/Single-frequency GPS Receiver (as used for main control).

iv) **Accuracy levels required:** same as their respective primary, secondary and tertiary control points.

Note:

1) The co-ordinate list and description of the location of all the control points shall be submitted to the JDA. The locations and IDs of all the control points should be maintained in GIS form.

2) The co-ordinate list should be supplied both for geodetic system (Lat/Long) and Projected System – Universal Traverse Mercator, i.e., the UTM projection of the respective zone.

3) In case a village tri-junction has not been marked and monumented by a primary, secondary or tertiary control point, the same should be monumented as per the parameters.

6. General Requirements

1. Village boundaries are to be marked.
2. The (X, Y, Z) coordinates for the control points should be given in spherical coordinates, i.e., geometric figures in three dimensions using three coordinates, as well as in Cartesian coordinates, i.e., each pointhttp://en.wikipedia.org/wiki/Point_(geometry)defined uniquely in a planehttp://en.wikipedia.org/wiki/Plane_(mathematics)through two numbers, called the *x-coordinate* or abscissa and the *y-coordinate* or ordinate of the point, separately.
3. The (X, Y) coordinates should be in WGS 84.
4. The survey agency should specify the specifications of the instruments used to achieve the required accuracy.
5. Some baselines for calibration of the monumentation should be maintained at selected locations.
6. A sketch for each category of the control points shall be submitted, showing the location of the control points along with their description for easy identification.

7. A map showing all the primary, secondary and tertiary control points along with their coordinates shall be submitted to the JDA.
8. The grid supplied by the JDA has to be superimposed on the geodetic network of the Survey of India to derive the control point numbering.
9. Control points should be on the boundaries of the khasras and not in between.
10. When located in govt. premises, the control point should be at a corner of the building or the premises.

17. JDA Commitment's Incorporation

17.1 Collection consultant has to collect relevant record from respective zone. Normally there are following four type of cases.

1. 90 B files
2. Single Patta/GH Patta
3. Land surrendered under section 44
4. JDA allotments

17.2 Verification

- Correct new of data collected is to be verified by the consultant.
- After verification data has to be geo-referenced
- After this it has to be superimposed on the base map
- Linking of attribute data
- Creation of KML/KMZ file

18. Demarcation Work (As per Fig.1)

18.1 Sector Road demarcation center line and both side edge of ROW is to be demarcation on site as per following specifications.

18.1.1 Center line

- **Center Line:**

  Demarcation of Center Line of the Sector Road will be done with the help of 200mm dia NP2 CC pipe @50 mt. c/c to c/c.

  Colour and lettering shall be as per the drawing shown in fig – 2.

  At curves and turning points interval will be @30mt c/c.

  On existing roads no center line will be demarcated.

18.1.2 Edge (Row)

- **ROW Line:**

  Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

  Colour and lettering shall be as per the drawing shown in fig – 3.

  At curves and turning points interval will be @30mt c/c.

  Extra stones will be required at junction/intersection points

18.1.3 Edge (Commercial strip)

- **Commercial strip:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig – 4.

At curves and turning points interval will be @30mt c/c.

Extra stones will be required at junction/intersection points

19. Preparation of land details plans

20. Notification of "No construction zone" as per JDA Act 1982

21. Quality Assurance

22. Documentation

23. Project server and Data uploading

Some examples of the standards that can be used under this work are listed below:

i) Scanning process:

a) 300 dpi in black and white.

b) Image should be stored in .tiff (tagged image file format) or .gif (graphic interchange format) only.

c) The image orientation should be upright.

d) The image should be cleaned and free of noise.

e) Legibility features should be good.

f) Measured length and width with in bounding box of the maps.

g) The image should not be skewed or wrapped.

h) Quality printout of 100% matching (1:1) scanned map on 90-micron transparent sheet for verification with original sheet.

i) Final printout: One printout of verified scanned map on 75-micron matt polyester paper.

ii) Digitization of cadastral maps

a) Layers to be computerized

i Administrative boundaries of a revenue village with name of village, tehsil and district

ii Khasra boundaries with khasra numbers

iii Road network along with road code and type

iv Railway network

v Major water bodies and drainage network

b) File format

i) Shape file (.shp)

ii) 100% matching (1:1)

iii) Final printout – 75-micron matt polyester paper

c) Scale: 1:4000

d) Accuracy: 0.025%

iii) Registration Process

a) Database standards

SQL-92 (Relational Model) /SQL -1999 (Object Model) to be adopted as standard for relational database management systems (RDBMSs).

iv) Indian language computing

UNICODE – character encoding for each and every alphabet of all the languages. The most commonly used encodings are UTF-8 (Unicode transformation format) and UTF-16.

v) Survey

a) Scale: 1:2000

b) Format –Shape format or geo-database format

c) Projection System = UTM (Universal Transverse Mercator)

d) Datum: WGS 84 (World Geodetic System-1984)

e) Reference with survey stone details/bench mark point

f) Contour interval: 1 meter contour with height information

g) Village/taluk/district boundaries with annotation

h) Village boundaries with tri-junction pillars

i) District/tehsil/village codification as per Census 2001

j) Distances in meters

k) Area in hectares/sq meters

l) **Output:**

i) Accurate geo-referenced digital map using established control survey network around existing Survey of India permanent reference points

ii) Proper indexed map with proper sheet number

iii) Sheet-wise as well as complete mosaic map of village/ tehsil/ taluk/ district

iv) Open file format (.shp)

v) Spatial and non-spatial data dictionary with feature codes, feature type (point, line and polygon)

vi) Feature description and symbols

m) **Accuracy:** horizontal accuracy of 20 cm for rural areas, 10 cm for urban areas, or better.

n) **Preparation and distribution of draft land Detail map (LDM) and linking attributes**

i) The draft LDM should be prepared for each Sector Road, in duplicate. The draft LDM shall be given to the concerned Engineer, for checking, if any.

ii) The draft LDM shall contain:

i The LDM sketch at a suitable scale to fit to an A3 size paper. The scale should be rounded off to the next scale of 50 (e.g., if the scale is coming to 1:446, then it should be fitted to a scale of 1:450; in case the scale is coming as 1:421, then it should be fitted to a scale of 1:450).

ii The actual area of each khasra and details of the adjoining khasra should be indicated on the sketch.

iii ROW, Commercial Strip and Strip Planning should also be indicated on the map.

iv Northing and Easting should also be shown as grid on the plan

v The attributes of each Khata with khasra should also be printed in a tabular form, at the back of the sketch.

vi Any other details which deemed to be fit by the Engineering – in – charge should also be indicated on the map.

Note: Same specifications and procedure of Cadastral maps are to be followed for Sector Maps for the Geo referencing, digitization (if required) and superimposition.

The use of open standards is mandatory for data sharing and inter-operability among different systems.

STANDARD/FORMAT FOR MAP & GIS DATABASE GENERATION

Mapping Standard	1:2,000
Spatial Framework	NSF
Ortho rectification Accuracy (RMS)	0.1m
Projection	UTM
Datum	WGS 84
Map Frame Size	One sheet
Map (Planimetric) Accuracy Minimum Mappable Unit (MMU) Accuracy of Mapping	0.1m 10x10 cm 100/99
Map format	Digital GIS Compliance
GIS Database standards	**1:2,000**
Spatial framework	Village
Tie Point Intervals for Spatial Framework	Meter grid
Projection	UTM
Datum	WGS 84
Minimum Frame size	One Sheets
Tic Registration Accuracy in meters	0.001
Planmetric Accuracy (1mm of scale) in m	0.02
Coordinate Movement Tolerance (CMT) Weed Tolerance (WT)	0.00001 0.001
Silver Polygon Tolerance (SPT)	<0.001 sqm
Grid size (for image/Raster layers)	100x100 m

Output Standards	**1:2,000**
Output Formats	Digital GIS Compliance
Output Framework	Admin unit-Village
	User Defined region AOI
	Spatial Framework grids
Output Media	CD-ROM/DVD
Output Projection	UTM/User defined
Output Datum	WGS 84
Output Format	Goe Tiff, Shape File
Output Symbology	As per layer Legend/ DoLR Standards

Contract Agreement

Bid Document for "Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads."

This agreement made on xx day of xxxxxxx 2015 between Jaipur Development Authority ("JDA"), with its address at JawaharLalNehru Marg, Jaipur-302004 and <BIDDER>, with its address at …… **for "Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads.". JDA** and <BIDDER> agree as follows based on the offer given by <BIDDER> dated ……. addressed to JDA, Jaipur.

The contract price for this work is Rs. ---------- (Rupees ---------- Only). The Terms of Reference and all schedules of Bid Document shall be part of this Contract Agreement.

1. **Commencement and Completion dates:**
   a. The date of commencement shall be ……..
   b. The completion date for completing the work shall be 6 months from the date of commencement i.e. ……..

2. **Scope of work**

Objectives

JDA has planned to prepare the ownership details of the land falling within the sector roads and commercial strips under JDA jurisdiction. Detailed schedules for acquisition/notification of required land and properties and their demarcation on ground in consultation with the JDA authorities. Land Acquisition/notification Plan should include Kilometer-wise Land Details Plan (LDP) and schedule of ownership thereof and Costs of structures as per JDA Rules. Details of properties, such as buildings and structures falling within the right-of-way and on commercial strips and costs of compensation based on JDA rules. Land Details Reports should be prepared in consultation with affected persons based on latest land records available on "apna khata.com".

Main objective of the work is to prepare land details falling in ROW and commercial strips by opting following steps:

Order of Execution:

- Establishment and construction of control points (Bench Marks) on ground after due checking by traverse survey as per requirement and design of JDA. Minimum three points for each sector.
- Establishment and construction of Grid pointson ground after due checking by traverse survey as per requirement and design of JDA for each sector.
- Geo Referencing of ground points with the help of DGPS.
- Collection of all Land Record, Cadastral Maps, Master Plan tiles and GT Sheets
- Digitization (Vectorization) of these Cadastral Maps to prepare vector layer.
- Normalization of Cadastral Mapsvector layer by applying methods to remove errors due to distortion, vectorization and other errors.

- Geo referencing of Cadastral Maps vector layer.
- Mapping of khasra map with ground points. The related works required to carry out this task like collection of Khasra/land details and DLC rates from concerned departments have to be undertaken by the Consultant.
- Collection of Sector Plansand commitments from all concerned zones/different cells of JDA.
- Preparation of vector layer of sector plans and commitments.
- Geo referencing of Sector Plan & commitments vector layer.
- Integration and superimposition of sector plans and commitments on khasra maps.
- Verification of prepared map on ground by consultant and checking by JDA/third party.
- Freezing of final maps for all future use after all modifications based on ground condition and final checking.
- Linking of Master Plan Geo-referenced Raster as well as vector layer.
- Linking of available city road maps provided by Google, Yahoo, Bing and their maps as per directions of JDA.
- Linking of attributes of each entity (Khasra, and khata) with respective vector layer and shape file.
- Calculation of area of khasra for each khata of respective village in required format for sector road area and commercial strip along with cost details of structures.
- Preparing shape file for ROW area and commercial strip area for each sector road such that required report can be generated by fixing quarry on different parameters.
- All files of JDA commitments, cadastral maps and sector plans shall be collected by agency from respective Zone.
- These files should be scanned and linked with the respective shape file and database as per given quality assurance norms in technical specifications chapter.
- Complete inventory of all "Arakshan Patra"(Reservation letters) and pattas issued for the sector roads from time to time shall be updated by the agency.
- During this process if any discrepancy found same shall be listed by the agency and necessary modifications as per the directions of JDA have to be carried out.
- Preparation of complete scheme under respective section of JDA Act 1982 and its notification following due procedure for notification of Sector Road area as **"No Construction Zone".**
- The complete process of handling Objection/Suggestion during the process/scheme preparation and notification as per JDA Act 1982 is to be carried out by the agency as per requirement of JDA.
- Preparing KML/KMZ files of all layers.
- Documentation of Geo referenced Cadastral Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Geo referenced Sector Maps in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.

- Documentation of Land Detail Plan in bounded form in A4 & A3 size Refer Fig.7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Documentation of complete list of all control points, grid points, and Bench Marks etc.
- Establishment of Project Server and uploading all data as per JDA requirement.
- All works as mentioned in Bid document are to be carried out by the consultant to the fullest satisfaction of JDA.
- There will be no additional payment of account of redo, corrections, modifications and checking or verification of work. Consultant has to deploy necessary staff for these tasks as and when required on the directions of Engineering – in – Charge.
- Detailed process, norms, quality checks and other details have been mentioned in Schedule X (Technical Specifications).
- Time duration of the work shall be **six months**. Contract period can be extended as per requirement of JDA for another one year on mutual consent. Amount of work can also be extended upto 50% in accordance with the provisions of the RTPPA-2012.
- If work is not completed in time there will be **penalty of Rs. 5000/- per day** for a period of 15 days and even then if work is not completed remaining work will be rescinded at the risk and cost of the agency after forfeiting all deposited amount with JDA and black listing firm debarring for a minimum period of one year.
- No part of the work done shall be used by the agency; it will be the property of JDA. Agency has to submit affidavit in this regard.
- Work cannot be Sub-letted by the Agency.

Demarcation Work: (As per Fig.1)

➢ **Center Line:**

Demarcation of Center Line of the Sector Road will be done with the help of 200mm dia NP2 CC pipe @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig –2.

At curves and turning points interval will be @30mt c/c.

On existing roads no center line will be demarcated.

➢ **ROW Line:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig –3.

At curves and turning points interval will be @30mt c/c.

Extra stone will be required at junction/intersection points

➢ **Commercial strip:**

Demarcation of ROW Line of the Sector Road will be done with the help of Sand stone 15cmX15cmX45 cm pedestal @50 mt. c/c to c/c.

Colour and lettering shall be as per the drawing shown in fig –4.

At curves and turning points interval will be @30mt c/c.

Extra stone will be required at junction/intersection points

Deliverables by JDA:

a) Land details, incase if it is not available with JDA same has to be obtained by the agency from RevenueDepartment. Necessary charges shall be deposited b JDA (If Any)
b) Cadastral maps, incase if it is not available with JDA same has to be obtained by the agency from RevenueDepartment. Necessary charges shall be deposited b JDA (If Any)
c) Sector Plans.
d) Master Plan Tiles.
e) All JDA commitments like reservation letters, approved schemes, JDA schemes, Group Housing Patta, and Land allotment etc. These details have to be collected by the agency from respective DC office or from other wings of JDA.
f) GT Sheet in Hard Copy.

Deliverables by Consultant:

- Geo referenced Cadastral Maps in bounded form in A4 & A3 size Refer Fig. 7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Geo referenced Sector Maps in bounded form in A4 & A3 size Refer Fig. 7 (5 copies) with different overlays and scale as suggested by JDA. Soft copy in proper storage media is also to be provided.
- Land Detail Plans (LDP): Land Detail Plan of each road with complete details of each "khata". On the reverse side of the plan in bounded form in A4 & A3 size Refer Fig. 7 (5 copies) with different overlays and scale as suggested by JDA. For each Sector Road a separate volume is to be prepared.
- Processing of prescribed procedure for Notification of "No Construction Zone" in accordance with JDA Act 1982.
- Land Details : Land details in desired format for for road area and commercial strip for each road in tabular format in bounded form.
- Bench Mark Details Ref.Fig.8 & 10.
- Control Point Details.

3. TERMS OF PAYMENT:

The work has to be carried out to the satisfaction of the JDA. The bills for various stages of work will be presented by the Bidder to JDA. The payment will be made to the Bidder after examination and approval of the relevant work by JDA. The payment will be made in stages as stipulated below:

Payment Schedule (Each Sector-wise)

Based on Road length and AOI (ROW + Commercial Strip) Area.

S. No.	Description of work	% of stage wise Payment	Cumulative %
1	• Establishment of control points (BM) and grid points as per technical specifications. Minimum three Bench Mark points for each sector. • Ground Checking/verification.	5% - One Month from date of W/O	5% - One Month from date of W/O
2	• Collection of Land records, khasra maps/ cadastral maps, JDA commitments and sector plans. • Mapping of Khasra maps/ cadastral maps, JDA commitmentsand sector plans with control points and grid points. • Vectorisation of cadastral maps, JDA commitments and sector plans • Ground Checking/verification.	5% - One Month from date of W/O	10% - One Month from date of W/O
3	• Superimposition of sector roads, commitments on khasra and Google. • Checking and verification. • Creation of KML/KMZ files	10% - Two Monthsfrom date of W/O	20% - Two Monthsfrom date of W/O
4	• Compiling of Land Details for ROW and commercial strip. • Core GIS, Linking of data • Checking and verification. • Uploading these details on server.	30% - Three Months from date of W/O	50% - Three Monthsfrom date of W/O
5	• Demarcation of center line, road boundary & commercial strip as per JDA specifications on ground. • Ground checking and verification.	20% - Four Months from date of W/O	70%- Four Months from date of W/O
6	• Initiating and completion of complete process of notification of land details in accordance to JDA Act1982 for ROW as "No Construction Zone".	10% - Five Months from date of W/O	80%- Five Months from date of W/O
7	• Planning work of commercial strips • Documentation Work • Establishment of Project Server • Uploading complete work on server as per the directions of JDA.	10% - Six Months from date of W/O	90%-Six Months from date of W/O

8	• After six months of satisfactory completion of work.	10% - One Year from date of W/O	100% - One Year from date of W/O

7. Indemnity

<BIDDER> shall indemnify JDA from any error or negligence in work including the professional services provided by the <BIDDER>. They will also bear the responsibility of clarifying issues that may crop up at alter stage upto a period of one year after the completion of contract and making corrections thereof without any additional charges.

8. Liquidated Damages (LD)

a If the Bidding Firm fails to complete the various jobs assigned to him as per the scope of the work in the given time, he is liable for compensation. He shall, without prejudice to any other right or remedy is liable for compensation @ 1% per week (of the unexecuted amount) or such smaller amount as may be fixed, by JDA on the contract value. When delay in completion of the work / part work amounts to less than a week the compensation payable shall be proportional to the number of days involved provided that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the contract value of the work. The amount of compensation may be adjusted or set off against any sum payable to the Bidding Firm under this or any other contract with the JDA, Jaipur.

The Engineer-In-charge shall keep a watch as to whether the actual progress of work is as per the time schedule and in case the bidding firm defaults in achieving progress on works at intermediate stage as per this schedule and continue to do so even after 15 days after a notice in writing from the Engineer-In-charge, the Bidding Firm will render himself liable to action as provided above.

9. Time Line

S. No.	Description of work	Time Period
1	• Establishment of control points (BM) and grid points as per technical specifications. Minimum three Bench Mark points for each sector. • Ground Checking/verification.	One Month from date of W/O
2	• Collection of Land records, khasra maps/ cadastral maps, JDA commitments and sector plans. • Mapping of Khasra maps/ cadastral maps, JDA commitmentsand sector plans with control points and grid points. • Vectorisation of cadastral maps, JDA commitments and sector plans • Ground Checking/verification.	One Month from date of W/O
3	• Superimposition of sector roads, commitments on khasra and Google. • Checking and verification. • Creation of KML/KMZ files	Two Monthsfrom date of W/O
4	• Compiling of Land Details for ROW and commercial strip. • Core GIS, Linking of data	Three Months from date of W/O

	• Checking and verification. • Uploading these details on server.	
5	• Demarcation of center line, road boundary & commercial strip as per JDA specifications on ground. • Ground checking and verification.	Four Months from date of W/O
6	• Initiating and completion of complete process of notification of land details in accordance to JDA Act1982 for ROW as "No Construction Zone".	Five Months from date of W/O
7	• Planning work of commercial strips • Documentation Work • Establishment of Project Server • Uploading complete work on server as per the directions of JDA.	Six Months from date of W/O

8. **Termination**

- If it is found that work is not being executed according to Terms of Reference or work is being delayed without sufficient reasons, the work may be terminated by JDA at any point of time after giving due notice without any liability on the part of JDA.
- If work is not completed in time there will be a **penalty of Rs. 5000/- per day** for a period of 15 days and even then if work is not completed remaining work will be rescinded at the risk and cost of the agency after forfeiting all deposited amount with JDA and black listing firm debarring for a minimum period of one year.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as or" the day and year first above written.

FOR AND ON BEHALF OF

JAIPUR DEVELOPMENT AUTHORITY **Witness**

FOR AND ON BEHALF OF

NAME OF BIDDER **Witness**

Annexure A : Compliance with the code of Integrity and No Conflict of Interest

Any person participating in a procurement process shall:-

(a) Not offer any bribe, reward or gift or any material benefit either directly or indirectly in exchange for an unfair advantage in procurement process or to otherwise influence the procurement process.

(b) Not misrepresent or omit that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation.

(c) Not indulge in any collusion, Bid rigging or anti- competitive behavior to impair the transparency, fairness and progress of the procurement process.

(d) Not misuse any information shared between the procuring entity and the bidders with intent to gain unfair advantage in the procurement process.

(e) Not indulge in any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process.

(f) Not obstruct any investigation or audit of a procurement process.

(g) Disclose conflict of interest, if any and.

(h) Disclose any previous transaction with any entity in India or any other country during the last three years or any debarment by any other procuring entity.

Conflict of Interest:-

The Bidder participating in bidding process must not have a Conflict of Interest.

A Conflict of Interest is considered to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.

i. A Bidder may be considered to be in conflict of interest with one or more parties in a bidding process of, including but not limited to :

Have controlling partners/ shareholders in common, or

Receive or have received any direct or indirect subsidy from any of them, or

Have the same legal representative for purposes of the Bid, or

have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder, or influence the decisions of the procuring entity regarding the bidding process. Or

The Bidder participates in more than one Bid in a bidding process. Participation by a Bidder in more than one bid will result in the disqualification of all bids in which the bidder is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one bid, or.

The Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Goods, works or services that are the subject of the Bid.

Bidder or any of its affiliates has been hired (or is proposed to be hired) by the procuring entity as engineer in charge/ Consultant for the contract.

Annexure B : Declaration by the Bidder regarding Qualifications :-

Declaration by the Bidder

In relation to my/ our Bid submitted to …… for procurement of …… In response to their Notice Inviting Bids No. …..... Dated …….. I/We hereby declare under section 7 of Rajasthan Transparency in Public Procurement Act. 2012, that:

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

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

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

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

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

Date:
Place :

Signature of bidder:
Name :
Designation:
Address:

Annexure C : Grievance Redressal during Procurement Process

The designation and address of the first Appellate Authority is **J.D.C**.The designation and address of the Second Appellate Authority is **E.C.(JDA)**

Filling 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 Appellate Authority, as specified in the Bidding Document with in a period of ten days from the date of such decision or action, omission, as the case may be, clearly giving the specific ground or grounds on which he feels aggrieved:

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

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

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

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

(4) Appeal not to lie in certain cases.

No appeal shall lie against any decision of the Procuring Entity relating to the following matters, namely:-

(a) Determination of need of Procurement;
(b) Provisions limiting participation of bidders in the Bid process;
(c) The decision of whether or not to enter into negotiations;
(d) Cancellation of a procurement process;
(e) Applicability of the provisions of confidentiality;

(5) Form of Appeal:

(a) An appeal under Para (1) or (3) above shall be in the annexed form along with as many copies as there are respondents in the appeal.

(b) Every appeal shall be accompanied by an order appealed against, if any affidavit verifying the facts stated in the appeal and proof of payment of fee.

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

(6) Fee for filing appeal:

(a)

ee for first appeal shall be rupees two thousand five hundred and for second appeal shall be rupees ten thousand, which shall be non- refundable.

(b) The fee shall be paid in the form of Bank demand draft or banker's cheque of a Scheduled Bank in India payable in the name of Appellate Authority concerned.

(7) Procedure for disposal of appeal:

(a) The first Appellate Authority or Second Appellate Authority, as the case may be upon filing of appeal, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.

(b) On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be shall,

(i) Hear all the parties to appeal present before him and

(ii) Peruse or inspect documents, relevant records or copies there or relating to the matter.

(c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass an order in writing and provide the copy of order to the parties to appeal free of cost.

(d) The order passed under sub-clause (c) above shall also be placed on the state public Procurement Portal.

F

Annexure D: Additional Conditions of Contract

1.Correction of arithmetical errors

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

i If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected; ii If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

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

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

2.Procuring Entity's Right to Vary Quantities:

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

ii f the Procuring Entity does not procure any subject matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the bidder shall not be entitled for any claim or compensation except otherwise provided in the conditions of contract.

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

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

As a general rule all the quantities of the subject matter of procurement shall

be procured from the Bidder, whose Bid is accepted. However, looking to the quantum of work to be procured is very large and it may not be in the capacity of single Bidder, whose bid is accepted. So L1 will be awarded minimum 30% work, remaining quantity may be subdivided among participant bidders at the approved rate, in order of higher to lower QCBS score, as per the requirement.

Form No. 1[See rule 83]

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

Appeal No …….. Of …….. Before the …….. (First/ Second Appellate Authority)

1. Particulars of appellant:

(i) Name of the appellant :

(ii) Official address, if any : (iii) Residential address:

2. Name and address of the respondent (s): [1]

(i)

(ii)

(iii)

3. Number and date of the order appealed against and name and designation of the officer/authority that passed the order (enclose copy), or a statement of a decision, action or omission of the Procuring Entity in contravention to the provisions of the Act by which the appellant is aggrieved:

4. If the Appellant proposes to be represented by a representative, the name and postal address of the representative:

5. Number of affidavits and documents enclosed with the appeal:

6. Grounds of appeal:……
(Supported by an affidavit)

7. Prayer ……

Place ……

Date ……

Appellant's Signature

Annexure: 1

Template of NIB for Publication in News Paper

JAIPUR DEVELOPMENT AUTHORITY

Room No. 234, Main Building Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 e.mail : xxxxxxxx@jaipurjda.org

Dispatch Number Dated:02-07-2015

NOTICE INVITING BID

NIB No. : 08/2015-16

Online Bids are invited up-to 03.08.2015 at 06:00 PM for Consultancy for identification of land, demarcation, planning etc. of land for 160 feet & above Sector Roads. Details may be seen in the Bidding Document at our office or the website of State Public Procurement Portal website www.sppp.rajasthan.gov.in,www.eproc.rajasthan.gov.inand www.jaipurjda.org.

To participate in the bid, bidder has to be:

1. Registered on JDA website www.jaipurjda.org
   For participating in the Bid, the Bidder has to apply for the Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only.
2. Registered on e-Procurement Portal of Government of Rajasthan www.eproc.rajasthan.gov.in for online e-Bid submission.

Executive Engineer-SR
JDA, Jaipur

Annexure: 2

Template of Detail NIB for uploading on SPP Portal, e-Procurement, JDA Protal& as part of NIB Document

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JAIPUR DEVELOPMENT AUTHORITY

Room No. 307, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 e.mail : eesr.jda@gmail.com

Dispatch Number-08 Dated:02-07-2015

NOTICE INVITING BID

NIB No. : 08

Name & Address of the Procuring Entity	➢ E.E. (SR), Jaipur Development Authority ➢ Room No. 307, CCC Building, III Floor, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 (Rajasthan) ➢ Email: e.mail : eesr.jda@gmail.com
Subject Matter of Procurement	➢ Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads.
Bid Procedure	Two Bid (eg. Single-stage Two part (envelope) open competitive) eBid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	➢ Least Cost Based Selection (LCBS)-L1
Websites for downloading Bidding Document, Corrigendum's, Addendums, etc.	➢ Websites: www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in , www.jaipurjda.org
Website for online Bid application and payment *	➢ Website: www.jaipurjda.org ➢ For participating in the Bid, the Bidder has to apply for this Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only. o Bidding document fee: Rs. 500.00 Rupees (Five Hundred only) o RISL Processing Fee: Rs. 1000 (Rupees One Thousand only) o Requisite Bid Security Deposit
Estimated Procurement Cost	➢ INR 75,00,000 (Rupees Seventy five Lakh only)
Bid Security Deposit	➢ Amount (INR) : 2% (1,50,000.00) of Estimated Procurement Cost, 0.5% (Rs.37500.00) of S.S.I. of Rajasthan, 0.5% (Rs. 37500.00) for Bidder registered as contractor in JDA, 1% (Rs. 7500.00) for Sick Industries, other than S.S.I., whose cases are pending with Board of Industrial & Financial Reconstruction
Pre-Bid	➢ 20.07.2015 at 16.00 PM ➢ Place : Manthan Hall II Floor, Main block JDA, JLN Marg, Jaipur-302014 (Rajasthan) ➢ Last date of submitting clarifications requests by the bidder 20.07.2015 by 06:00 PM addressed to the procurement entity at Room No. 307, Ram Kishore Vyas Bhavan, Indira Circle, Jawahar Lal Nehru Marg, Jaipur – 302 004 (Rajasthan). ➢ Response to clarifications by procuring entity : 21.07.2015 up to 3.00 PM
Start/ End Date for Bid Applying, Online Payment and Bid Submission	➢ Start Date: 13.07.2015 at 9:30 AM onwards ➢ End Date: 03.08.2015 at 06:00 PM
****Date/ Time/ Place of Technical Bid Opening**	➢ 07.08.2015 at 1:00 PM ➢ Room No. 309 Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 (Rajasthan)
Date/ Time/ Place of Financial Bid Opening	➢ Will be intimated later to the Technically qualified bidders
Bid Validity	➢ 120 days from the bid submission deadline

* The amount is to be deposited online by bidder. In case the amount exceeds the online payment limit the payment may be made through RTGS/NEFT in ICICI BANK LTD Bank Account Number 675401700586 IFSC Code ICIC0006754. After successful payment, update the UTR/Instrument number on JDA Tender portal against the tender you want to participate. The amount deposited will be confirmed by JDA and will be updated online.

** There should be a gap of 3 working days **BETWEEN** End Date for Bid Applying, Online Payment & Bid Submission **AND** Bid opening date.

Note:

1. Bidder (authorised signatory) shall submit their offer on-line in Electronic formats both for technical and financial proposal.

2. In case, any of the bidders fails to pay the Tender Fee, BSD, and RISL Processing Fee, online (subject to confirmation), its Bid shall not be accepted.
3. To participate in online bidding process, Bidders must procure a Digital Signature Certificate (Type III) as per Information Technology Act-2000 using which they can digitally sign their electronic bids. Bidders can procure the same from any CCA approved certifying agency, i.e. TCS, Safecrypt, Ncode etc. Bidders who already have a valid Digital Signature Certificate (DSC) need not procure a new DSC. Also, bidders must register on http://eproc.rajasthan.gov.in (bidders already registered on http://eproc.rajasthan.gov.in before 30-09-2011 must register again).
4. JDA 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.
5. Bidders are also advised to refer "Bidders Manual Kit" available at eProc website for further details about the e-Tendering process.
6. Training for the bidders on the usage of e-Tendering System (eProcurement) is also being arranged by DoIT&C, GoR on a regular basis. Bidders interested for training may contact e-Procurement Cell, DoIT&C for booking the training slot.
   Contact No: 0141-4022688 (Help desk 10 am to 6 pm on all working days) e-mail: eproc@rajasthan.gov.in
   Address : e-Procurement Cell, JDA, YojanaBhawan, Tilak Marg, C-Scheme, Jaipur
7. The procuring entity reserves the complete right to cancel the bid process and reject any or all of the Bids.
8. No contractual obligation whatsoever shall arise from the bidding document/ bidding process unless and until a formal contract is signed and executed between the procuring entity and the successful bidder.
9. 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.
10. The provisions of RTPPA Act 2012 and 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 Rules thereto, the later shall prevail.

Executive Engineer-SR
JDA, Jaipur

Annexure: 3
As part of NIB Document

Process for Participation & Depositing Payment Online

JAIPUR DEVELOPMENT AUTHORITY, has decided to receive Bidding document fee, RISL Processing Fee and Bid Security Deposit (BSD) through online mode only for which the bidder has to get registered himself on JDA portal www.jaipurjda.org.

To participate in the bid, bidder has to be:

1. Registered on JDA website www.jaipurjda.org (by depositing Rs. 500.00 online, the validity of which remains 3 (three) years).
   For participating in the Bid, the Bidder has to apply for this Bid and pay the Bid Document Fee, RISL Processing Fee and Bid Security Deposit, online only.
2. Registered on e-Procurement Portal of Government of Rajasthan www.eproc.rajasthan.gov.in for online e-Bid submission.

Methods for depositing on line amount

- Online through Internet Banking, Debit Card or Credit Card.
- In case the amount exceeds the online payment limit, the payment may be made through RTGS/NEFT/Transfer in Bank Account Number **675401700586** IFSC Code **ICIC0006754**of ICICI BANK Limited, JDA Campus Jaipur.

In case of RTGS / NEFT / Transfer the bidder is required to deposit the requisite amount in the dedicated bank account number as mentioned above and has to get the UTR / Reference number from the bank. This number requires to be updated whiling applying the bid on JDA portal.

While participation in the bid, a receipt will be generated through the system showing the submission details as per **Annexure-4**. The bidder is required to fill the instrument numbers for various heads on e-Procurement portal www.eproc.rajasthan.gov.in as mentioned in the receipt.

More details about Registration Process, Terms and Conditions and FAQ along with contact detail is available on JDA website www.jaipurjda.org under e-Services>>JDA Tender

Annexure: 4

Template of Online Receipt as part of NIB Document

Bidder has to submitted as proof of depositedamount against the Bid on e-ProcurementProtal

Jaipur Development Authority, Jaipur

Bid participation Receipt

Date & Time : 09/06/2015 05:13 PM

Bid Detail

Bid Id : 62151520001	Procurement Enitity :
Bid Time : Testing	
Bid Value : 300000	Bid Opening Place : In Chamber of EE-S.R, JDA, Jaipur .

Bidder Detail

Name of Entity :	Mobile :
Registration Type Individual	Instrument Amount :32500.00
Payment Mode : Online/UTR	Payment Channel : Payment Gateway/ICICI Branch-JDA
Instrument No.: 456123789	Instrument Date : 17-06-2015

Dates Detail

S.no.	Event Name	Event Date
1	Publishing Date	01/06/2015 01:00 PM
2	BID Opening Date	01/07/2015 03:00 PM

Specific Instrument Detail for eProc Rajasthan l

Instrument Type: DD			
Instrument Number	**Head Name**	**Amount**	**Date**
10000	Tender Fee	500.00	05/06/2015
10001	RISL Processing Fee	1000.00	05/06/2015
10002	BID Security Deposit	30,000.00	05/06/2015
Issuer Detail: Jaipur Development Authority		Challan Number:	

SPECIAL CONDITIONS

SCHEDULE 'H'

1 The contractor shall follow the contractor labour regulation and abolition Act 1970 & Rule1971.

2 The JDA shall have right to conduct an audit/technical examination of the work of the final bills of the contractor including all supporting vouchers, abstract etc. to be made within two years after payment of the final bills and if as a result such audit any amount is found to have been over paid / excess in respect of any work done by the contractor under the contract or any work claimed by him to have been done under this contract and found not to have been executed the contractor shall be liable to refund such amount and it shall be lawful for the JDA to recover such sum from him in the manner prescribed in special condition no. 5 or any other manner legally permissible and if it is found that the contractor was paid less then what was due to him under the contract in respect of work executed by him under it, the amount of such under payment shall be paid by the JDA to the contractor.

3. By submission of this tender the contractor agree to abide with all printed conditions provided in the PWD manual form 64 (Chapter 3-para 36)/ RTPPA act and subsequent modification thereafter.

4. The contractor shall not work after the sunset and before sunrise without specific permission of the authority Engineer.

5. Wherever any claim against the contractor for the payment of a sum of money arises out of under the contracts, the JDA shall be entitled to recover the sum by appropriating in part or whole of the Performance Security of the contractor, In the event of the security being insufficient or if no security has been taken from the contractor then the balance of the total sum recoverable as the case may shall be deducted from any sum then due or which at any time their contract with the JDA should this sum be sufficient to recover the full amount recoverable. The contractor shall pay to JDA on demand the balance remaining due. The JDA shall further have the right to affect such recoveries under P.D.R. Act.

6. The rate quoted by the contractor shall remain valid for a period of 4 (Four) months from the date of opening of the tenders.

7. The rates provided in tender documents are inclusive of all Taxes and royalty.

8. No conditions are to be added by the contractor and conditional tender is liable to be rejected.

9. All transaction in this execution of this work and this tender will be liable to Sale-Tax vide section. 2(B) read with sub-clause (4) Sale-tax Rule, 1954.

10. If any tender withdraws his tender prior to expiry of said validity period given at S.No. 6 or mutually extended prior or makes modifications in the rate, terms and conditions of the tender within the said period which are not acceptable to the department or fails to

commence the work in the specified period, fails to execute the agreement the department shall without prejudice to any, other right or remedy, be at liberty to forfeit the amount of earnest money given in any form absolutely. If any contractor, who having submitted a tender does not execute the agreement or start the work or dose not complete the work and the work has to be put to retendering he will stand debarred for six months from participating of tendering in JDA in addition to forfeiture of Earnest Money / Performance Security and other action as mentioned under works agreement

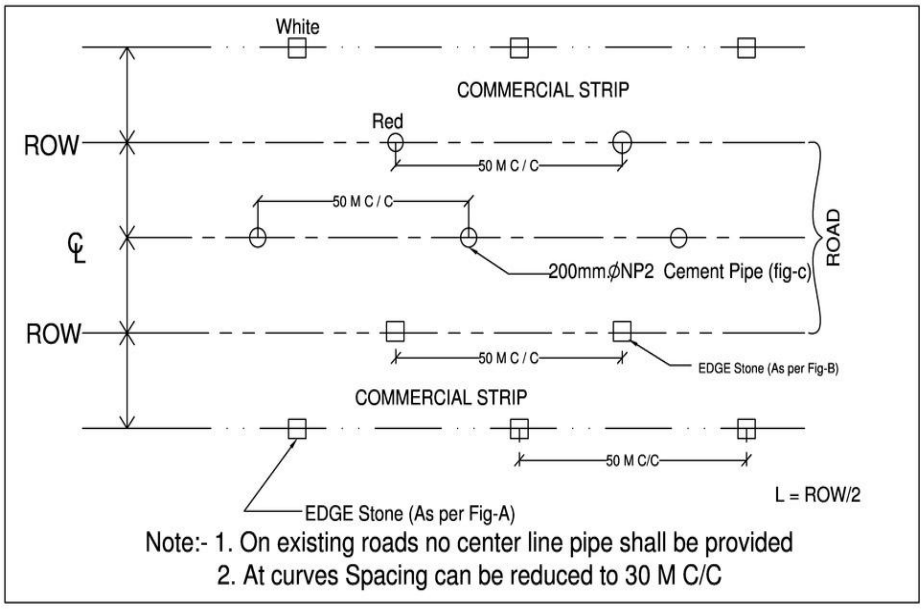
13. **No additional document can be submitted by the contractor after submission of his bid accept as provided in order no. 169 dated 21.11.2014 or any embedment thereafter.**
14. Rules regarding enlistment of contractor provide that work up to the prescribed limit for which they are qualified for tendering can be allotted to them. Therefore, before tendering the contractor will keep this in mind, and submit the details of the work accordingly. Tenders with incomplete or incorrect information are liable to be rejected.
15. JDA has full right to reject any or all tenders without given any reasons.
16. As per Supreme Court decision "All contracts with Governments shall require registration of workers under the building and other construction workers (Regulation of Employment and Conditions of Service) Act, 1996 and extension of benefits to such workers under the etc."
17. The tenderer are required to submit copy of their enlistment as contractor in required category with respect cost of work.
18. Conditions of RPWA-100 will be mandatory & acceptable to the contractor.
19. Any tender received with unattested cutting/overwriting in rates shall be rejected and such bidder will be debarred from tendering for three months in JDA.
20. All the provision of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013 will be applicable. If there is any contradictions in existing special conditions and provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and rules 2013 provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules 2013 shall be applicable.
21. All fees/ payment shall be payable in the name of secretory JDA, Jaipur.

Signature of Contractor
With full Address

Executive Engineer-Sector Roads
JDA, Jaipur.

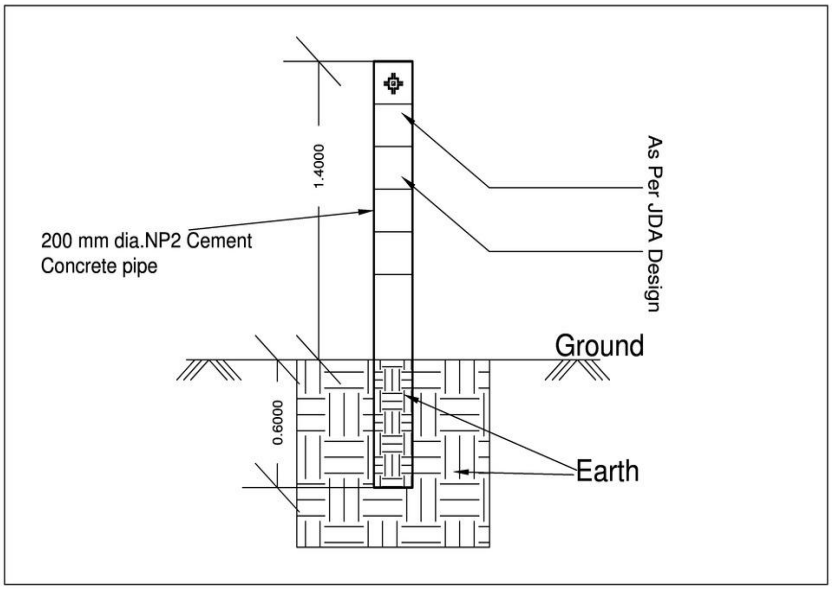
DEMARCATION WORK SPECIFICATIONS

Fig.1



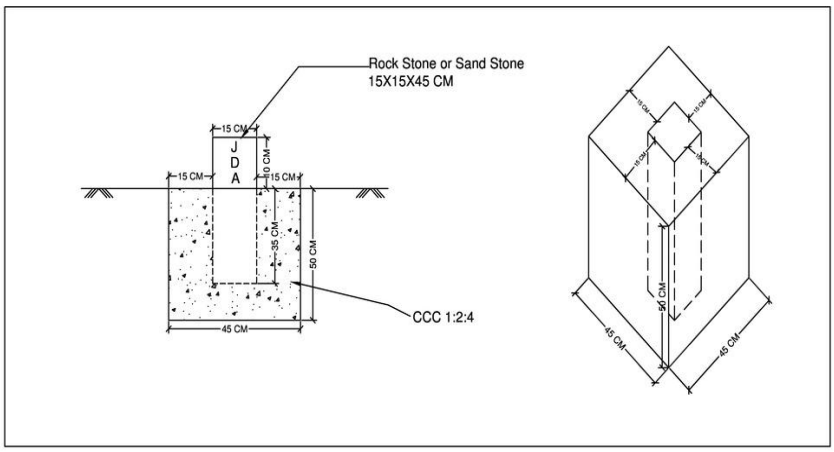
Note:- 1. On existing roads no center line pipe shall be provided
2. At curves Spacing can be reduced to 30 M C/C

Center Line White/Red Fig.2



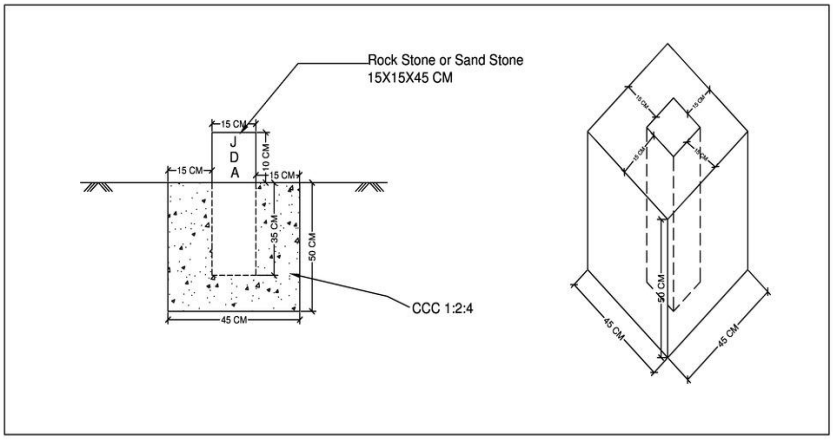
Edge Stone (Row) Red

Fig-3



Edge Stone (Commercial Strip) White

Fig-4



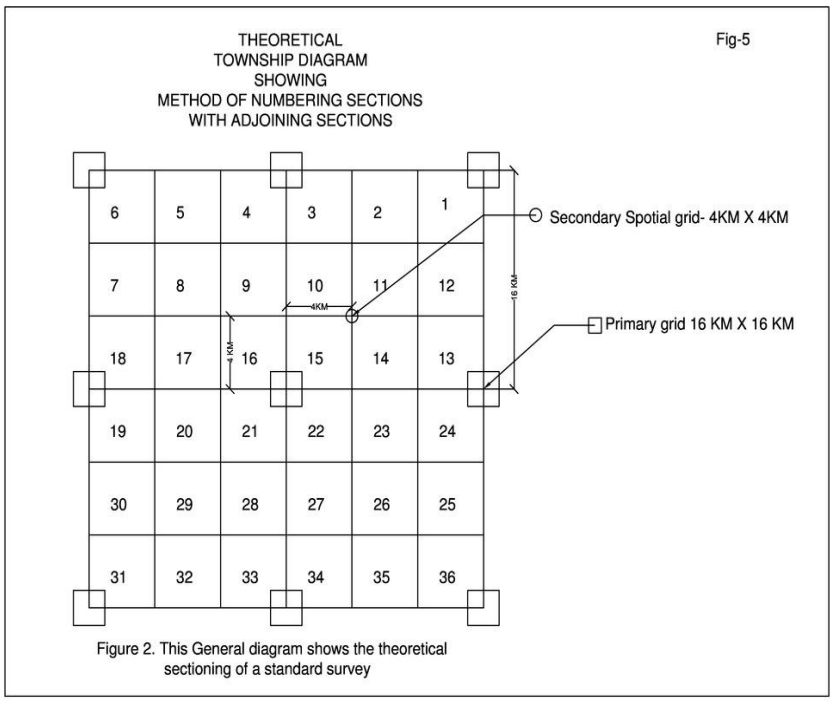
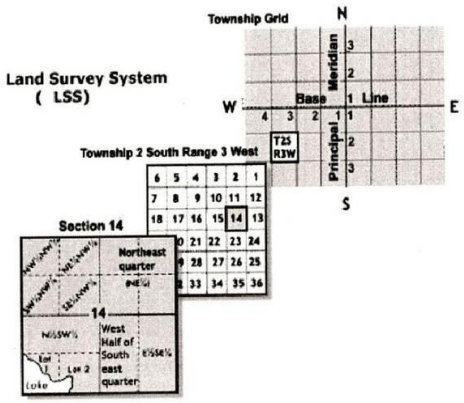


Figure 2. This General diagram shows the theoretical sectioning of a standard survey

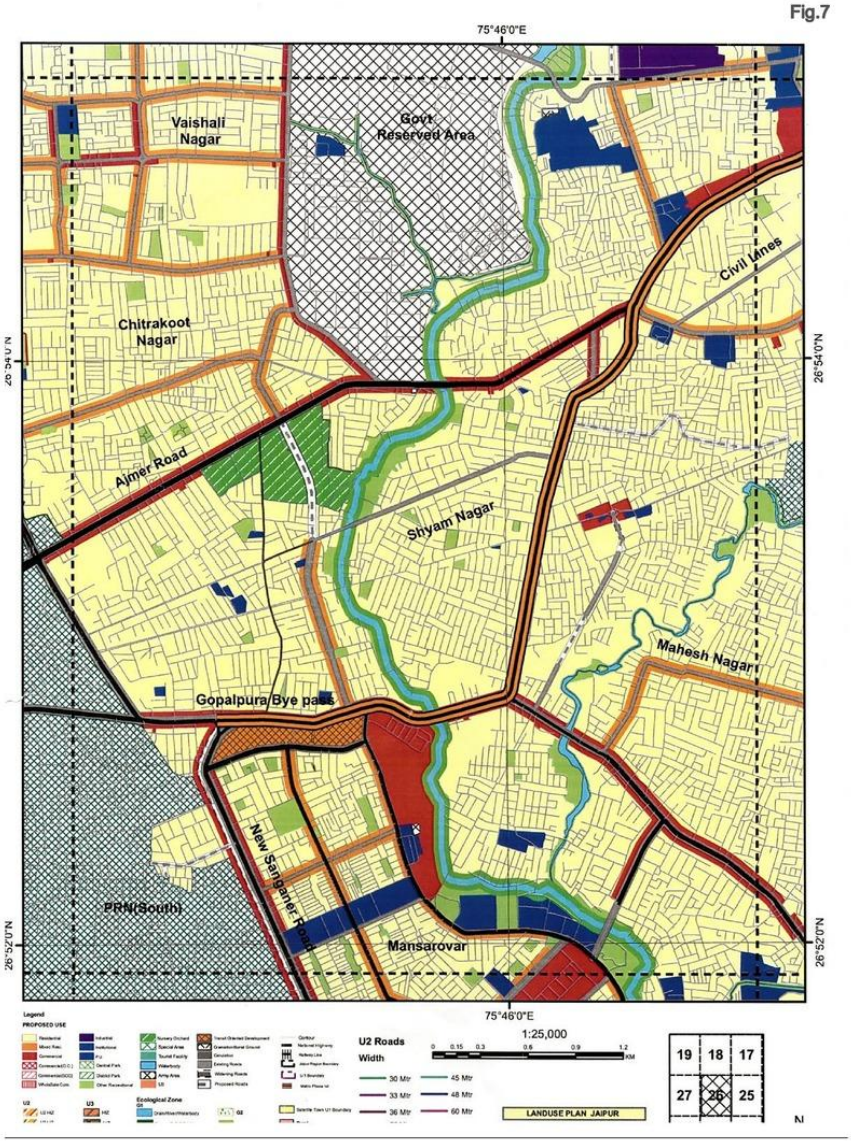
Fig-6



Illustraction of the Township Grid for Land Survey system

Ground Control Network
Primary 16 KM X 16KM
Secondary Spatial grid 4 KM X 4 KM
Tertiary Control Points - as per ground Condition.
DGPS observation of 4 hr.KM at primary
Control Point and 1hr. at the Secondary Point

Fig.7


75°46'0"E
Vaishali Nagar
Govt. Reserved Area
Civil Lines
Chitrakoot Nagar
Ajmer Road
Shyam Nagar
Mahesh Nagar
Gopalpura Bye pass
New Sanganer Road
PRN(South)
Mansarovar
26°54'0"N
26°52'0"N
Legend
PROPOSED USE
U2 Roads
Width
30 Mtr
33 Mtr
36 Mtr
45 Mtr
48 Mtr
60 Mtr
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LANDUSE PLAN JAIPUR
19
18
17
27
26
25
N

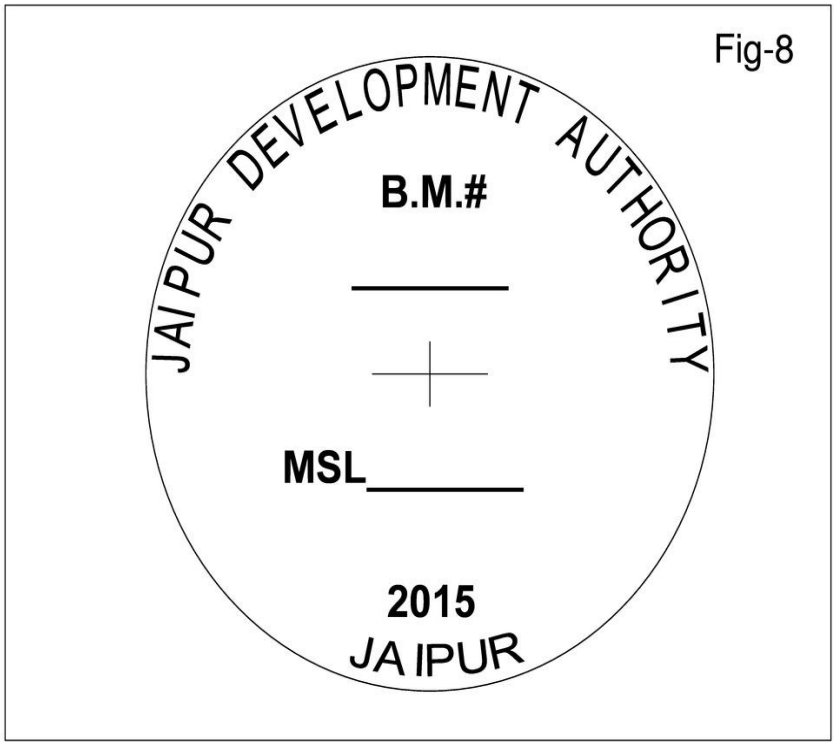


Fig-8

Monumentation of Secondary Control Points Fig-9

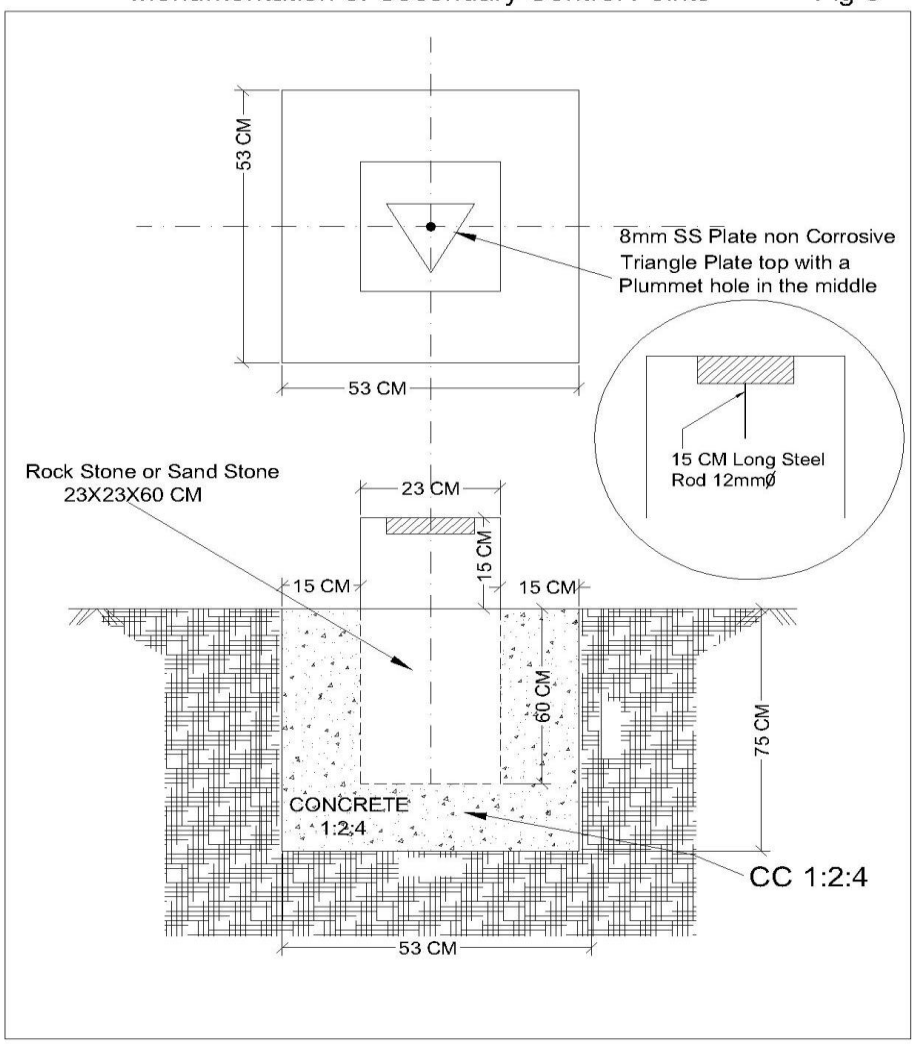
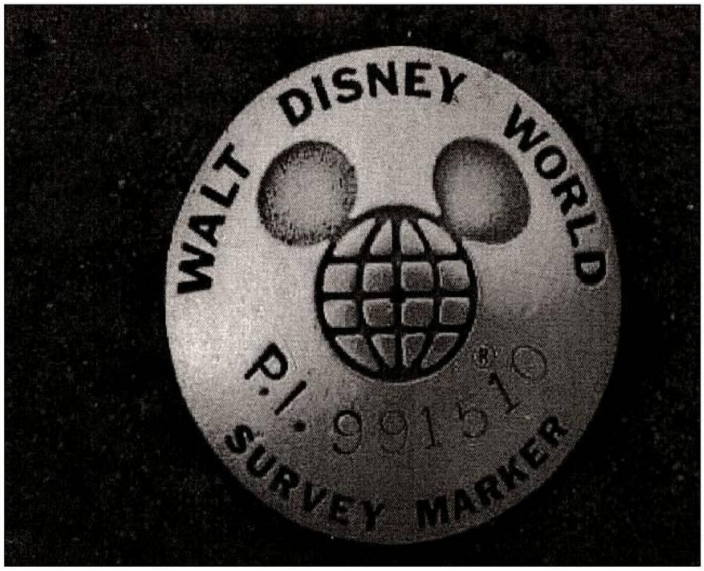


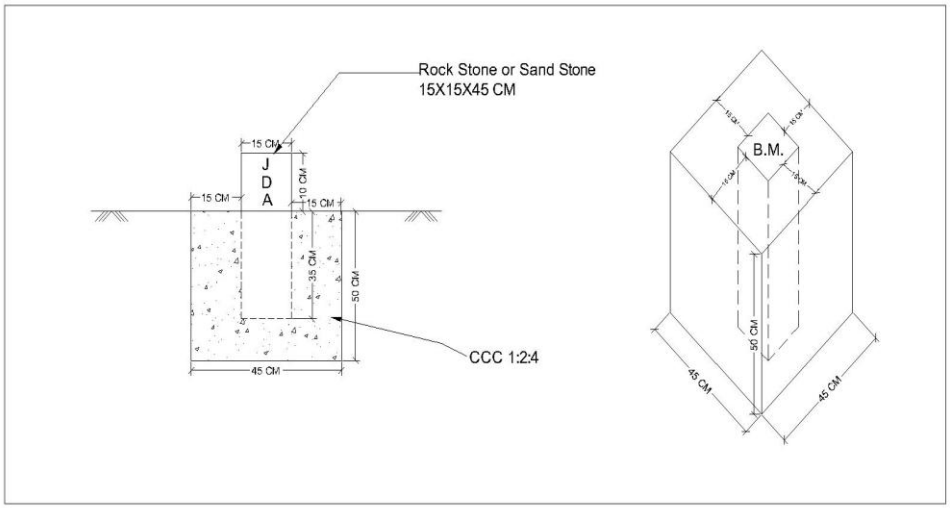
Fig-10



Example

Monumentation of Tertiary

Fig-11



Item Rate BoQ

Tender Inviting Authority: JAIPUR DEVELOPMENT AUTHORITY, JAIPUR.

Name of Work:- Consultancy for identification of land, demarcation planning etc. of land for 160 feet & above Sector Roads, JDA Region, Jaipur.

Contract No: NIB No.:- EE(SR)/08/2015-16

Bidder Name :							
PRICE SCHEDULE **(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)**							
Sl. No.	**Item Description**	**Quantity**	**Units**	**Estimated Rate**	**BASIC RATE In Figures To be entered by the Bidder Rs. P**	**TOTAL AMOUNT Without Taxes**	**TOTAL AMOUNT In Words**
1	**SECTOR 29**						
1.1	**160 Feet Road (In Mtr.)**	6990.0000	Mtr.	0.0000		**0.00**	INR Zero Only
1.2	**200 Feet Road (In Mtr.)**	15480.0000	Mtr.	0.0000		**0.00**	INR Zero Only
2	**SECTOR 30**						
2.1	**160 Feet Road (In Mtr.)**	8475.0000	Mtr.	0.0000		**0.00**	INR Zero Only
2.2	**200 Feet Road (In Mtr.)**	9430.0000	Mtr.	0.0000		**0.00**	INR Zero Only
3	**SECTOR 31**						
3.1	**200 Feet Road (In Mtr.)**	8860.0000	Mtr.	0.0000		**0.00**	INR Zero Only
4	**SECTOR 32, 33, 44, 46**						

Sl. No.	Item Description	Quantity	Units	Estimated Rate	BASIC RATE In Figures To be entered by the Bidder Rs. P	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT In Words
4.1	**200 Feet Road (In Mtr.)**	7500.0000	Mtr.	0.0000		**0.00**	INR Zero Only
5	**SECTOR 34**						
5.1	**160 Feet Road (In Mtr.)**	3120.0000	Mtr.	0.0000		**0.00**	INR Zero Only
5.2	**200 Feet Road (In Mtr.)**	1805.0000	Mtr.	0.0000		**0.00**	INR Zero Only
6	**SECTOR 35**						
6.1	**160 Feet Road (In Mtr.)**	23250.0000	Mtr.	0.0000		**0.00**	INR Zero Only
6.2	**200 Feet Road (In Mtr.)**	1650.0000	Mtr.	0.0000		**0.00**	INR Zero Only
6.3	**300 Feet Road (In Mtr.)**	2820.0000	Mtr.	0.0000		**0.00**	INR Zero Only
7	**SECTOR 36**						
7.1	**160 Feet Road (In Mtr.)**	10190.0000	Mtr.	0.0000		**0.00**	INR Zero Only
7.2	**200 Feet Road (In Mtr.)**	3900.0000	Mtr.	0.0000		**0.00**	INR Zero Only
7.3	**300 Feet Road (In Mtr.)**	4040.0000	Mtr.	0.0000		**0.00**	INR Zero Only
8	**SECTOR 37**						
8.1	**160 Feet Road (In Mtr.)**	8850.0000	Mtr.	0.0000		**0.00**	INR Zero Only
8.2	**200 Feet Road (In Mtr.)**	4280.0000	Mtr.	0.0000		**0.00**	INR Zero Only

Sl. No.	Item Description	Quantity	Units	Estimated Rate	BASIC RATE In Figures To be entered by the Bidder Rs. P	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT In Words
8.3	**300 Feet Road (In Mtr.)**	6850.0000	Mtr.	0.0000		**0.00**	INR Zero Only
9	**SECTOR 38 TO 42**						
9.1	**160 Feet Road (In Mtr.)**	24575.0000	Mtr.	0.0000		**0.00**	INR Zero Only
9.2	**200 Feet Road (In Mtr.)**	8470.0000	Mtr.	0.0000		**0.00**	INR Zero Only
10	**SECTOR 43**						
10.1	**200 Feet Road (In Mtr.)**	29340.0000	Mtr.	0.0000		**0.00**	INR Zero Only
11	**SECTOR 44**						
11.1	**200 Feet Road (In Mtr.)**	30085.0000	Mtr.	0.0000		**0.00**	INR Zero Only
12	**SECTOR 46**						
12.1	**160 Feet Road (In Mtr.)**	8450.0000	Mtr.	0.0000		**0.00**	INR Zero Only
12.2	**200 Feet Road (In Mtr.)**	7215.0000	Mtr.	0.0000		**0.00**	INR Zero Only
13	**SECTOR 47**						
13.1	**200 Feet Road (In Mtr.)**	18615.0000	Mtr.	0.0000		**0.00**	INR Zero Only
14	**SECTOR 56A**						
14.1	**160 Feet Road (In Mtr.)**	1460.0000	Mtr.	0.0000		**0.00**	INR Zero Only

Sl. No.	Item Description	Quantity	Units	Estimated Rate	BASIC RATE In Figures To be entered by the Bidder Rs. P	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT In Words
14.2	**200 Feet Road (In Mtr.)**	4325.0000	Mtr.	0.0000		**0.00**	INR Zero Only
15	**SECTOR 56B**						
15.1	**200 Feet Road (In Mtr.)**	4055.0000	Mtr.	0.0000		**0.00**	INR Zero Only
16	**SECTOR 56**						
16.1	**160 Feet Road (In Mtr.)**	750.0000	Mtr.	0.0000		**0.00**	INR Zero Only
16.2	**200 Feet Road (In Mtr.)**	9565.0000	Mtr.	0.0000		**0.00**	INR Zero Only
17	**SECTOR 63**						
17.1	**160 Feet Road (In Mtr.)**	3930.0000	Mtr.	0.0000		**0.00**	INR Zero Only
17.2	**200 Feet Road (In Mtr.)**	2970.0000	Mtr.	0.0000		**0.00**	INR Zero Only
17.3	**300 Feet Road (In Mtr.)**	2420.0000	Mtr.	0.0000		**0.00**	INR Zero Only
18	**SECTOR 66**						
18.1	**160 Feet Road (In Mtr.)**	2580.0000	Mtr.	0.0000		**0.00**	INR Zero Only
18.2	**200 Feet Road (In Mtr.)**	7340.0000	Mtr.	0.0000		**0.00**	INR Zero Only
19	**SECTOR 67**						
19.1	**160 Feet Road (In Mtr.)**	2415.0000	Mtr.	0.0000		**0.00**	INR Zero Only

Sl. No.	Item Description	Quantity	Units	Estimated Rate	BASIC RATE In Figures To be entered by the Bidder Rs. P	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT In Words
19.2	**200 Feet Road (In Mtr.)**	5730.0000	Mtr.	0.0000		**0.00**	INR Zero Only
19.3	**300 Feet Road (In Mtr.)**	4790.0000	Mtr.	0.0000		**0.00**	INR Zero Only
20	**SECTOR 70**						
20.1	**160 Feet Road (In Mtr.)**	11565.0000	Mtr.	0.0000		**0.00**	INR Zero Only
20.2	**200 Feet Road (In Mtr.)**	3605.0000	Mtr.	0.0000		**0.00**	INR Zero Only
20.3	**300 Feet Road (In Mtr.)**	2830.0000	Mtr.	0.0000		**0.00**	INR Zero Only
21	**SECTOR 73**						
21.1	**200 Feet Road (In Mtr.)**	4725.0000	Mtr.	0.0000		**0.00**	INR Zero Only
22	**SECTOR 74**						
22.1	**160 Feet Road (In Mtr.)**	2240.0000	Mtr.	0.0000		**0.00**	INR Zero Only
22.2	**300 Feet Road (In Mtr.)**	2700.0000	Mtr.	0.0000		**0.00**	INR Zero Only
23	**SECTOR 75**						
23.1	**300 Feet Road (In Mtr.)**	4680.0000	Mtr.	0.0000		**0.00**	INR Zero Only
24	**SECTOR 78**						
24.1	**300 Feet Road (In Mtr.)**	2790.0000	Mtr.	0.0000		**0.00**	INR Zero Only

Sl. No.	Item Description	Quantity	Units	Estimated Rate	BASIC RATE In Figures To be entered by the Bidder Rs. P	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT In Words
25	SECTOR 80						
25.1	**200 Feet Road (In Mtr.)**	13000.0000	Mtr.	0.0000		**0.00**	INR Zero Only
25.2	**300 Feet Road (In Mtr.)**	1600.0000	Mtr.	0.0000		**0.00**	INR Zero Only
26	SECTOR 81						
26.1	**160 Feet Road (In Mtr.)**	1160.0000	Mtr.	0.0000		**0.00**	INR Zero Only
26.2	**200 Feet Road (In Mtr.)**	3055.0000	Mtr.	0.0000		**0.00**	INR Zero Only
26.3	**300 Feet Road (In Mtr.)**	4480.0000	Mtr.	0.0000		**0.00**	INR Zero Only
Total in Figures						0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only					