

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR
MINUTES OF PRE BID MEETING

No. JDA/E.E.ROB/RUB-III/2015-16/D-27

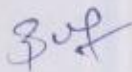
Dated:- 13/04/2016

The Pre Bid Meeting for the work of "Construction of Six lane ROB with LHS including Electrification work in lieu of L.C. 211, Dantli, Goner Road on JP-DLI Railway Line, Jaipur" was held on 30.03.2016 at 4.00 PM in 'MANTHAN' meeting Hall under the Chairmanship of Director Engineering-I. The following officers were present.

1. Sh. Devraj Singh, Director (Finance), JDA, Jaipur.
2. Sh. Rajkumar Sharma, ACE IV, JDA, Jaipur.
3. Sh. N.K. Singhal, SE-V, JDA, Jaipur.
4. Sh. Devendra Gupta, SE-ROB, JDA, Jaipur.
5. Sh. V.M. Johri, Executive Engineer, ROB/RUB- II, JDA, Jaipur.
6. Sh. Sunil Shukla, Executive Engineer (ROB/RUB-III), JDA, Jaipur.
7. Sh. Satish Binakya, Senior AO, JDA Jaipur.
8. Sh. P.P. Khanna, A.O., JDA, Jaipur.
9. Sh. A goyal, Theme Engineering Services, Jaipur.
10. Sh. Govinda Saini, Theme Engineering Services, Jaipur.

Following representative of bidders were also present in the meeting:-

1. Sh. M.P. Singh, M/s. ARSS infra project Ltd.
2. Sh. Rajneesh Bajpai, M/s. Vijay M. Mistry Construction P Ltd.
3. Sh. Dharendra Rath, M/s. Rajdeep buildcon Pvt Ltd.
4. Sh D.C. Gupta, M/s. Bharat spun pipes, Jaipur.



The query raised by the perspective bidders and JDA's reply is as follows :-

S.N.	Name of Firm	Query	JDA's Reply
1.	Vijay M. Mistry Construction Pvt. Ltd. vide Ref:- 869 dated 28.03.2016	1. Clause 3.7.4(h) - Corporate Social Responsibility (CSR) [Page 125] This clause states that contractor has to provide toilet block including all civil, water supply and sanitary work and electrical installation work as per direction of Engineer-in-Charge without any extra payment. In event of non execution of this work proportionate amount as decided by E.I.C. will be deducted. Submission - Please clarify what would be the estimated cost to fulfill the liability of corporate social responsibility (CRS) that figure shall be incorporated in this clause. Please also indicate the amount to be recovered for failure to provide these social obligations.	The area is already been specified in documents. The cost of construction will be as per prevailing market according to facilities to be given to required standard.
		2. General Rules and Directions for the Guidance of Contractor in the Bid for Works - Point No.(C) [Page 68] Please correct the time allowed for completion of work as 24 month as per memorandum point No. (C) in place of 18 months.	24 Months is the completion period.
		3. Bid Security [Page 4] Is contractor allowed to deposit the 100% Bid Security (EMD) in form of Bank Guarantee of nationalized bank as stated in NIB, Annexure-II (Page No.4)? You are requested to clarify and confirm.	Be paid as stated in Annexure - II, page no 04.
		4. Clause 45: Price Variations Clause [Page 93-99]	

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S.N.	Name of Firm	Query	JDA's Reply
		(a) The price variation for Labour, bitumen, steel etc. are accounted based on the index at the time of opening of tender or at the time of negotiation. We request to give actual effect of price escalation on basis of consideration of price index prevailing at the time of bid submission. Hence, kindly amend the clause accordingly. (b) In case of cement, price index for Gray cement category shall be considered to derive the escalation amount. (Ref. Page No.96) (c) In case of steel, price index for steel - long shall be considered to derive the escalation amount of steel. Also there is huge component of steel superstructure over railway span, we therefore suggest to include the structural steel component in the price escalation. (Ref. Page No.96) (d) The percentage component of price escalation for labour, material, bitumen, petroleum, cement and steel reinforcement is not indicated in General condition for admissibility of Escalation, point No.2 (Refer Page 99)	a. Not agreed. b. Gray Cement. c. Accepted d. Factors will be as below. 1. Labor - 16.45 % 2. Cement - 12.77 % 3. Steel - 42.38 % 4. Stru. Steel - 2.19% 5. Bitumen - 1.44 % 6. POL - 5.92 % 7. Others - 18.85 % Total - 100 %
		5. Subsurface Investigation The details for sub surface investigation are described nowhere in the tender. We request to provide the same.	Uploaded.
		6. BOQ Items [Section - 8] (a) Item No. 10 (M40 Grade), Item No. 40 (M 35 Grade) and Item No. 43 (M35 Grade) show only sub structure work. We request you to clarify the various components	(a) Item no. 10 :- For Piers, pier cap, abutments, pedestals, dirt wall, seismic arrester. Item no 40 :- For Cross

S.N.	Name of Firm	Query	JDA's Reply
		of bridge where these are applicable.	girders, Solid slabs. The nomenclature is being reproduced as under:- (Providing and laying structural reinforced/ pre stressed cement concrete (Design mix) of specified grade using batching plant, transit mixer, concrete pump and vibrator in super structure at all levels including cost of steel form work complete as per clause 1500, 1600 and 1700 of MoRT&H specifications including all scaffolding, material, labor, machineries etc. RCC/ PSC grade M 45) Item no 43 :- For side walls of LHS
		(b) Item for the Deck Slab of bridge does not appear in BOQ items. We request to incorporate the same. (c) BOQ Item No. 12 is pertaining to the POT-PTFE bearings, and it includes all the POT-PTFE Bearings of all spans. But the POT PTFE Bearings above the span over the railway track shall be installed as per RDSO design and drawings, which is	b) Covered in BoQ item no 40. c) Not Agreed.

S.N.	Name of Firm	Query	JDA's Reply
		found much more costly than the conventional design of bearing under PSC/RCC Girders. We therefore suggest a separate item for POT-PTFE bearings with appropriate rates under the Steel Girders over railway span. (d) In the BOQ item No.16 for approach slab, friction slab, edge beam, foot path and kerb, grade of concrete is not specified. Please specify the grade of concrete. (e) Item No. 30 and 32 are pertaining to the premix bituminous works which are insisted to execute by installation of 100-120 TPH capacity plant for this project. We request to allow also the Drum mix type of plant with lower capacity without compromising the quality for the small quantum of premix bituminous works, involved in the project.	— d) Grade M-35 e) Not agreed.
		7. Sub way structure The sub way is to be constructed with precast segments, as per RDSO drawing. In this connection, please clarify. a) The RDSO drawing referred in GAD is for single box and not for twin boxes. (b) Please indicate the duration of traffic block, which will be available for construction of this subway.	a) Drawings are under approval with railway. Work will be executed as per approved drawings from Railways. b) Depends on Railways authority.
2.	Rajdeep Buildcon Pvt. Ltd. vide Ref	1. Clause 1.1.3 - a on Page No 46 of Instructions to Bidder - Scope of Work.	Not Agreed.

S.N.	Name of Firm	Query	JDA's Reply
	:- RBPL/1089/ 2015-16 dated 29.03.2016	The above clause includes following activity under scope of Contractor. True and proper setting out and layout of the work, providing location marks, bench marks, preparation of reports and plans. Considering this is a %age rate / item rate tender all required details like Execution Drawings, Reports and Plans shall be provided by Client. Hence kindly request you to delete responsibility of preparation of reports and plans mentioned under this clause.	Execution Drawings will be issued by JDA as & when needed at Site.
		2. Clause 1.11.1 on Page No 53 of Instructions to Bidder – Deadline for Bid Submission Bids must be submitted by bidders on E-Tendering portal not later than 6:00 PM I.S.T on 21.01.2016 , and bid shall be opened at 11.00 AM I.S.T on 22.01.2016 in the presence of those bidders who may choose to be present. Dates mentioned in this clause are found in the month of January 2016 but according to Clause 1.13.1, the bid openings is in April 2016. Hence we presume that dates mentioned in this clause shall be in April 2016. Please Clarify.	18.04.2016 :- End date on JDA portal for Document sale/ download/ Bid participation amount deposit. 21.04.2016 :- End date for Bid submission on E proc portal of GoR.
		3. Clause 12A on Page No 81 of General Conditions of Contract – Additional Work The quantum of additional work for each item shall not exceed 50% of the original quantity given in the agreement and the total value of additional work shall	Not agreed.

S.N.	Name of Firm	Query	JDA's Reply
		not exceed 50% of the total contract value, unless otherwise mutually agreed by the Engineer-in-charge and the Contractor. According to general practice of additional work the clause shall be amended as follows The quantum of additional work for each item shall not exceed 25% of the original quantity given in the agreement.	
		4. Clause 37 (d) on Page No 90 of General Conditions of Contract – Defect Liability Period In case of road, bridge and CD works (original/special, repairs/renewals). The defect Liability period shall be three years after completion of works. In such type of tenders in other Govt. Departments Railway, PWD, NHAI and MoRTH the Defect Liability Period is 12 Months (One Year) Hence we kindly request you to amend the Defect Liability Period to 1 (one) Year instead of 3 (three) years.	Not agreed. As per bid document.
		5. Clause 37 (e) on Page No 90 of General Conditions of Contract – Refund of Security Deposit In case of JDA original works/special repairs works costing more than 10.00 lacs, partial amount of Security Deposit will be refunded during the defect liability period @ 10% of SD amount after lapse of one year of completion and thereafter 10% of original amount of SD at the end of	Please refer item no-21, of additional information from JDA's side in the minutes of pre bid meeting.

S.N.	Name of Firm	Query	JDA's Reply
		each subsequent year. The remaining amount of SD be refunded after the expiry of defect liability period. According to general practice adopted in other departments, 50% of Security Deposit shall be return at completion of Project and 50% of Security Deposit shall be return at completion of Defect Liability Period. Hence we kindly request you to change the clause accordingly.	
		6. Clause g - i on Page No 125 of Other Conditions of Contract - Right of Way - Approach Road Right of way to the work site will be provided to the contractor. The contractor shall prepare at his own cost approach road to the site of work. Considering this is % age rate / item rate, we presume that the payment of Approach Road shall be made under relevant item in BOQ. Please Confirm.	No payment shall be made against construction of approach road to reach to the work site.
		7. Notice inviting Bids on Page No 3 - Bid Security Bid Security Deposit - Amount (INR): 2 % (Rs 144.00 Lacs.) of Estimated Procurement Cost, 0.5 % (Rs 36.00 Lacs.) for Bidder registered as contractor in JDA. As in other Govt. Departments like MoRTH, NHAI, Railways, DFCCIL, the Bid Security Deposit is less than or equal to 1% of the Estimated Cost. Hence we kindly request you to amend the Bid Security equal to 1%	Not agreed.

S.N.	Name of Firm	Query	JDA's Reply
		of the estimated cost i.e. 72.00 lakh against 144.00 Lakh.	
		8. Item No 2.0 in BOQ 3 - Extra for GI Binding Wire The quantity against above item given as 3474.47 Tonne. According quantity of Reinforcement the given quantity of binding wire is too high. We kindly request you to please review the quantity and unit of this item.	Extra for GI binding wire will be paid on the quantity of steel being used on work.
		9. Mobilization Advance The Clause for Mobilization Advance not found in Bid Documents. Considering location, quantum of work, to maintain the good rate of progress and as well as smooth cash flow while execution of the project, the Mobilization Advance is very necessary. Hence, According to general practice in industry, we kindly request you to allow Mobilization Advance equal to 10% of Contact Value without interest.	Not agreed.
		10. Secured Advance against Material The Clause for Secured Advance against Material not found in Bid Documents. As there is significant quantum of Cement, Steel, HT Strands and Bitumen and for maintaining stock of the same and also to maintain smooth cash flow contractor requires support from client. Also it is routine	It is payable for non-perishable items and as per contract agreement.

S.N.	Name of Firm	Query	JDA's Reply
		procedure in other many departments i.e. DFCCIL, IRCON and MoRTH, Hence, According to general practice in Govt. Departments, we kindly request you to allow Secured Advance equal to 75% of invoice value of material.	
		11. Land for Construction As in GAD it is seen that proposed ROB is aligned through some structures. We presume that the total land for construction of ROB is acquired by the JDA. Please Confirm.	Land for construction of RoB will be made available by JDA. JDA may assist the Contractor in arranging the land with the respective authority. However, the Contractor will have to born the rent. No extra payment will be made in this account.
		12. Diversion Road / Service Road We presume that any new construction required for Diversion Road / Service Road will be paid under relevant item of BOQ.	If any such work is executed, will be paid accordingly.
		13. Date of Submission of Bids We kindly request you to clarify the above points and keep the date of submission at least 15 days after issuance of clarifications.	18.04.2016 :- End date on JDA portal for Document sale/ download/ Bid participation amount deposit. 21.04.2016 :- End date for Bid submission on E proc portal of GoR.
3.	M/s. Bharat spun pipes.	Criteria for pre-qualification clause no. 2(a), page no. 21. Criteria of quantities executed are now not considered in railways and other departments.	Not agreed.

S.N.	Name of Firm	Query	JDA's Reply
		Mobilization Advance	Not agreed.

Additional information from JDA's side.

1. In case of Joint Venture if one partner is registered in JDA then the Bid Security will be @ 2%.
2. The steel strands are to be procured from TATA-Mumbai plant and reinforcement steel is to be procured from primary manufacturers only as approved by EIC.
3. Expansion Joints are to be procured from MoRTH Empanelled vendors which are to be got approved from EIC before procurement.
4. The bidder will have to get fabrication of composite girder for Railway Span as per RDSO design and drawing and approved vendor by RDSO. All tests will for works under Railway span will have to conduct as per satisfaction of the NWR. No extra cost will be paid on this account.
5. The design of RE wall and its fascia panels will have to be got approved by JDA prior to execution of work.
6. The bidders are requested to fill properly the RTPP annexure A, B, C, and D failing which Bid may be rejected.
7. The bidders are requested to pay special attention towards Section-7. Special condition of contract for safety, health and environment (SHE) and the related penalty clause.
8. The bidders are requested to pay special attention towards the liquidated damages clause 3.12.2 of OCC at page NO.128 wherein mile stones have been defined and liquidated damages have been proposed for not achieving key dates, not mobilizing required machinery and for not installing requisite number of casting beds for PSC girders.
9. The bidders are requested to pay proper attention towards clause No. 3.7.4h at page No.125 for Corporate Social Responsibilities CSR. However, the DLP shall not be applicable for this part of work.
10. The design of staging shall have to be got proof checked by MNIT or any other MoRTH empanelled consultant before execution of work for which no extra payment will be made.
11. Pile Load Test and Routine Test shall be executed by doing anchor piles only, for which no extra payment will be made.
12. No extra payment will be made for overlap, couplers, chairs and spacers in the steel reinforcement. If the couplers are used in replacement of overlap the design of the same will have to be got approved from JDA before execution of work, no extra cost on this account shall be payable.
13. Admixture shall be used as approved by EIC.
14. The PMB grade of bitumen shall be procured from HINCOL, ESSAR, TOTAL or equivalent as approved by EIC.
15. All the applicable permits/NOC's/Traffic diversion permission shall have to be arrange and borne by the bidder at their own cost. However JDA may assist in obtaining such permissions/NOC. Any delay in obtaining such permits/NOC shall not be considered for delay in works as per agreement.

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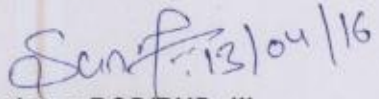
16. Any damages of the utilities and underground services, during execution of work caused by contractor/machinery/labour will have to be restored by the bidder at his own cost for which no extra payment shall be made.
17. Job Mix design for bridge work and road work shall have to be got done by NABL accredited lab or MNIT and got approved by JDA before execution of work. No extra payment shall be made on this account.
18. Bidder should submit on the date of downloading of the bid documents, the documentary proof of Tax Registration Certificate. Works Executed photocopies of **completion / execution certificate issued by an officer not below the rank of Executive Engineer** giving detail of contract including date of start, date of completion, amount of work done, nature of work etc.) and turnover of above pre-qualification requirement. Please note that copies of award letters will not be accepted / taken as proof for meeting the pre-qualification criterion.
19. Special attention of bidders is drawn towards Clause 7 of SCC - Bid Evaluation Sheet given at Annexure 4, which is to be filled properly by the bidder quoting page number of the respective documents given in column No.5 of Annexure-4.
20. The rates quoted by the bidder should be inclusive of all the taxes.
21. The following conditions are hereby amended as under:-

Clause No.	Existing	Amended
Page no-90 Clause-37 (e)	In case of JDA original works/special repairs works costing more than 10.00 lacs, partial amount of Security Deposit will be refunded during the defect liability period @ 10% of SD amount after lapse of one year of completion and thereafter 10% of original amount of SD at the end of each subsequent year. The remaining amount of SD be refunded after the expiry of defect liability period.	The Security Deposit amount shall become due and shall be paid to the contractor after expiry of Defect Liability Period of work, except for expansion joints, for which the liability period shall be 10 years. The Security Deposit of Rs.15.00 Lacs shall be kept withheld against, guarantee period / DLP of expansion joints, bearings and RE wall and shall remain valid throughout the guarantee period, which shall be of 10 Years. The Security Deposit will be released in the following stages after satisfactory performance certificate issued by Engineer-In-Charge :-- 1 After completion of one year 20 % of SD Amount 2 After completion of two years 20 % of SD Amount

		3 After completion of three years Remaining 60% of SD Amount excluding Rs. 15.00 Lacs being kept with held against 10 years DLP of Bearings, Expansion Joints and RE wall.
Page no-91 Clause-39 (e)	The contractor shall engage the technical staff as follows, on the contract works. (a) For works costing Rs. 100 lacs and above one Graduate Engineer. (b) For works costing between Rs. 50 lacs to Rs.100 lacs - One qualified Diploma holder having experience of not less than 3 years. (c) For works costing between Rs. 15 lacs to Rs. 50 lacs - One qualified Diploma holder. The technical staff should be available at site, whenever required by Engineer-in-charge to take instructions.	The contractor shall engage the technical staff as follows, on the contract works at his own cost for which nothing extra will be payable. (a) Project Manager/ Bridge Engineer:-- He should be a Graduate Engineer having overall experience of not less than 15 years out of which 10 years experience should be of Bridge works. If the contractor fails to appoint such Project Manager, Rs. 1,00,000.00 (Rupees One Lacs) per month will be deducted. (b) Senior Site Engineer :- One Graduate engineer having experience of 10 years out of which 5 years experience should of bridge works. If the contractor fails to appoint such Senior Site Engineer Rs. 50,000.00 (Rupees Fifty Thousands) per month will be deducted. (c) Site Engineer :- One Graduate/ Diploma engineer having experience of 5 years. If the contractor fails to appoint such Senior Site Engineer Rs.25,000.00 (Rupees Twenty Five Thousands) per month will be deducted. (d) Quantity Surveyor :-- One Diploma engineer having experience of 2 years. If the contractor fails to appoint such Senior Site Engineer Rs.20,000.00 (Rupees Twenty Five Thousands) per month will be deducted.

		(e) However, in the event of non appointment of such Technical personals, JDA may engage such technical personals and actual salary be deducted in addition to the deductible amount mentioned in clause 39,(a),(b),(c) & (d). The contractor, before appointing these Technical personals will have to got the CV approved by JDA.The technical staff should be available at site, whenever required by Engineer-in-charge to take instructions.
Page-67 Memorandum (a) General - description of work	Construction of Four Lane ROB in lieu of LC-102/2E, Jahota on JP-Sikar Railway line, Jaipur."	Construction of Six Lane ROB with LHS including Electrification work on LC-211, at Goner Road, Dantli, Village, Jaipur.

The minutes of the pre bid meeting will henceforth become the part of bid document.


 Executive Engineer ROB/RUB-III
 JDA JAIPUR

1
Geotechnical investigation work of Consultancy Services for Bridges in JDA
Region, Preparation of DPR for ROB at LC No- 211 Goner Road Dantli Village

Revised location of bore hole as per revised GAD (5-04-2016)

Results:-

1. The Soil Stratum at Bore Hole No.(A1) Consist is G.L to 21.00m Consist is Silty Sand With gravel & Below Depth 21.00m to 30.00m Consist is Clayey silt With gravel.
2. The Soil Stratum at Bore Hole No.(P1) Consist is G.L to 22.50 Consist is Silty Sand With gravel & Below Depth 22.50m to 30.00m Consist is clayey silt With gravel.
3. The Soil Stratum at Bore Hole No.(P2) Consist is G.L to 22.50 Consist is silty Sand With gravel & Below Depth 22.50m to 30.00m Consist is clayey silt With gravel.
4. The Soil Stratum at Bore Hole.No. (P3) Consist is G.L to 22.50m Consist is Silty Sand with Gravel & Below Depth 19.50m to 30.00 m Consist is Clayey Silt With gravel.
5. The Soil Stratum at Bore Hole No. (P4) Consist is G.L to 19.50m Consist is Silty Sand & Below Depth 19.50m to 30.00m Consist is clayey Silt with gravel
6. The Soil Stratum at Bore Hole No. (P5) Consist is G.L to 10.50m Consist is Silty Sand & Below Depth 10.50m to 21.00m Consist is silty sand With gravel & Below depth 21.00m to 30.00m Consist is clayey Silt with gravel.
7. The Soil Stratum at Bore Hole No. (P6) Consist is G.L to 13.50m Consist is Silty Sand & Below Depth 13.50m to 22.50m Consist is silty sand With gravel & Below depth 22.50m to 30.00m Consist is clayey Silt with gravel.
8. The Soil Stratum at Bore Hole No. (P7) Consist is G.L to 9.00m Consist is Silty Sand & Below Depth 9.00m to 19.50m Consist is silty sand With gravel & Below depth 19.50m to 30.00m Consist is clayey Silt with gravel.
9. The Soil Stratum at Bore Hole No. (P8) Consist is G.L to 3.00m Consist is Silty Sand & Below Depth 3.00m to 22.50m Consist is silty sand With gravel & Below depth 22.50m to 30.00m Consist is clayey Silt with gravel.
10. The Soil Stratum at Bore Hole No. (P9) Consist is G.L to 3.00m Consist is Silty Sand & Below Depth 3.00m to 19.50m Consist is silty sand With gravel & Below depth 19.50m to 30.00m Consist is clayey Silt with gravel.
11. The Soil Stratum at Bore Hole No. (P10) Consist is G.L to 3.00m Consist is Silty Sand & Below Depth 3.00m to 27.00m Consist is silty sand With gravel & Below depth 27.00m to 30.00m Consist is clayey Silt with gravel.
12. The Soil Stratum at Bore Hole No. (P11) Consist is G.L to 6.00m Consist is Silty Sand & Below Depth 6.00m to 28.50m Consist is silty sand with gravel & below depth 28.50m to 30.00m consist is clayey silt with gravel.



13. The Soil Stratum at Bore Hole No. (P12) Consist is G.L to 4.50m Consist is Silty Sand & Below Depth 4.50m to 28.50m Consist is silty sand with gravel & below depth 28.50m to 30.00m consist is clayey silt with gravel.
14. The Soil Stratum at Bore Hole No. (P13) Consist is G.L to 24.00m Consist is Silty Sand with gravel & Below Depth 24.00m to 30.00m Consist is clayey silt with gravel..
15. The Soil Stratum at Bore Hole No. (P14) Consist is G.L to 21.00m Consist is Silty Sand with gravel & Below Depth 21.00m to 30.00m Consist is clayey silt with gravel..
16. The Soil Stratum at Bore Hole No. (P15) Consist is G.L to 21.00m Consist is Silty Sand with gravel & Below Depth 21.00m to 30.00m Consist is clayey silt with gravel.
17. The Soil Stratum at Bore Hole No. (P16) Consist is G.L to 24.00m Consist is Silty Sand with gravel & Below Depth 24.00m to 30.00m Consist is clayey silt with gravel.
18. The Soil Stratum at Bore Hole No. (P17) Consist is G.L to 21.00m Consist is Silty Sand with gravel & Below Depth 21.00m to 30.00m Consist is clayey silt with gravel.
19. The Soil Stratum at Bore Hole No. (P18) Consist is G.L to 21.00m Consist is Silty Sand with gravel & Below Depth 21.00m to 30.00m Consist is clayey silt with gravel
20. The Soil Stratum at Bore Hole No. (P19) Consist is G.L to 22.50m Consist is Silty Sand with gravel & Below Depth 22.50m to 30.00m Consist is clayey silt with gravel.
21. The Soil Stratum at Bore Hole No. (P20) Consist is G.L to 25.50m Consist is Silty Sand with gravel & Below Depth 25.50m to 30.00m Consist is clayey silt with gravel.
22. The Soil Stratum at Bore Hole No. (A2) Consist is G.L to 16.50m Consist is Silty Sand with gravel & Below Depth 16.50m to 22.50m Consist is clayey silt with gravel & below depth 22.50m to 30.00m consist is clayey silt with gravel.

For Theme Engineering Services Pvt. Ltd.

Ashok Bairwa



(Lab- Technician)

G.K Bagda



(Team Leader)