CPWD-6

DELHI STATE INDUSTRIAL & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
OFFICE OF THE CHIEF PROJECT MANAGER, (CD-XI)
WAZIRPUR INDUSTRIAL AREA, TECHNICAL CENTRE BUILDING, DELHI-110052

Notice Inviting e- Tender

The Chief Project Manager (CD-XI) DSIIDC Delhi, on behalf of the Chairman & Managing Director, DSIIDC invites online Lump –Sum e-Bid(composite) for Building work (Part-A & Part-B) and percentage rate e-Bid for Infrastructural Development work (Part-D) through e-Tender website www.govtprocurement.delhi.gov.in **& www.dsiidc.org** from approved and eligible firms/ bidders of CPWD, and those of appropriate list of BSNL ,MES, Railways, DDA, NDMC, Delhi Govt. Dept. MCD, I&F Deptt. (Delhi), DJB & PWD Delhi or, with any Central/State Govt. Departments/ Corporations /Development Authorities & Autonomous Bodies or Private Bidders/Builders. (Joint Ventures will not be permitted) for the work detailed as here under.

S.No.	NIT NO.	Name of Work & location	Estimated Cost (Rs.)	Earnest Money (Rs.)	Concerned Division	1.Date and time of Pre-bid meeting 2.Last Date and time of submission of Bid 3.Date and time of Opening of Technical Bid 4.Time Allowed for completion
1	02/CD-XI/DSIIDC/2012-2013	Construction of Low Cost Housing for Urban Poor/Slum Rehabilitation at Tikri Kalan, Delhi. Comprising of 8420 DU's (G+4) in Phase-1 **(SH: C/o 3380 DU's (G+4))** **(Package-II)**	Estimated Cost 1,56,00,78,285/- **Lump-Sum Bid** Part-B (Building Work) Civil Component (Major Component) Rs1,37,80,21,343/- Part-C (Building Work) Electrical Component (Minor Component) Rs6,10,11,738/- **Percentage Rate Bid** Part-D (Infrastructural Development Work) Rs 12,10,45,204/-	1,66,01,000/-	Chief Project Manager, CD-XI, DSIIDC, Technical Centre Bldg. Wazirpur Industrial Area, Wazirpur, Delhi-52	1) 9 July at 11.00 a.m. at DSIIDC Business Centre A3/4, Emporia Building, Baba Kharak Singh Marg, New Delhi. 2) 20 July upto 3.00 p.m. 3) 20 July at 3.30 p.m. 4) 12 Months

The intending Bidders must read the terms & conditions of NIT carefully. They should only submit their bids if they consider themself eligible and having the entire document prescribed in NIT.

The enlistment of the Bidders/firms should be valid on the last date of submission of bids. In case the last date of submission of the Bid is extended, the enlistment of Bidders/firms should be valid on the original last date of uploading the Bid.

1.1 The estimated cost indicated, however is given merely as a rough guide. The eligibility of Bidders will correspond to the combined estimated cost of different parts put to bid.

1.2 Intending Bidders are eligible to submit the bid provided they have definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:-

Criteria of eligibility for submission of bid document:-

1.2.1

a) The tenderers should have experience of having successfully completed similar works during the last 7 years ending last day of the month previous to the one in which tenders are invited.

The tenderers must have completed the following work during the last Seven years ending last day of the month previous to the one in which the tenders are invited.

Three similar completed works each of value not less than 40% of estimated cost

or

Two similar completed work each of value not less than 60% of estimated cost.

or

One similar completed work of value not less than 80% of estimated cost (rounded to nearest Rs.10 lacs) in last seven years ending last day of the month previous to the one in which the tenders are invited.

and (for non-registered firms)

One executed work of any nature (either part (a) or a separate one costing not less than the amount equal to 40% of the estimated cost put to tender with some Central Government Department / State Government Department / Central Autonomous Body / Central Public Sector Undertaking. The executed work shall mean that the tenderer has been paid by the Central & State Government Department / Central Autonomous Body / Central& State Public Sector Undertaking amount for completion/part completion of the project but shall exclude the amount paid as advance of any nature.

and

The tenderers should have executed the works of Housing with monolithic technology (shear wall) having value not less than 50 crores.

The value of completed / executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of receipt of application for tender.

(b) Similar Work

Similar works shall mean the work mainly of building it will also include any or all of the following work associated with the work of building

(a) Roads,
(b) Underground reservoir,
(c) Storm Water drain,
(d) Water supply &Sewerage

For private works other than Government Departments the completion certificates of the clients or concerned architect or Municipal Authorities shall be submitted by the contractor in terms of similar works as defined in para – a & b. Same Performa as given in schedule shall be applicable.

b) No agency shall be awarded the work for construction of more than 10000 dwelling units under BSUP of JNNURM through the implementing agencies viz. DUSIB & DSIIDC of Delhi Govt. including the proposed work in question.

In order to determine the said limit of 10000 dwelling units, the following criteria are enumerated:-

The limit of 10000 dwelling units comprises sum total of following two components:

(i) Dwelling units already under construction and/or dwelling units awarded and/or works of dwelling units under process of award, in DUSIB and/or DSIIDC under BSUP of JNNURM.

(ii) Dwelling units of the proposed (above mentioned) work in question.

Any excess over the said limit/cap so set/imposed shall inevitably disqualify the Bidder and shall render him/them ineligible.

The prospective Bidder/intending Bidder shall upload the details of dwelling units in the light of above mandatory requirements on form C-1.

The intending Bidders shall submit certificates of successful executed/ completed work by them. Details of the works executed should be furnished in form-B as per Bid documents.

1.2.2 To become eligible for Bid, the Bidder shall have to furnish three affidavits as under:-

1.2.2.1 I/We…….S/o…….R/o……undertake and confirm that eligible similar work(s) has/have not been got executed through another Bidder on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for Biding in DSIIDC future forever. Also, if such a violation comes to the notice of department before the issue of letter of acceptance whichever is earlier. The Engineer- in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

1.2.2.2 I/We……S/o…….R/o……hereby declare that:-

i) I have deposited the requisite EMD amount of Rs in the DSIIDC A/c…… through RTGS…dt……at Bank drawn in favour of DSIIDC.

ii) In case of my Bid is not accepted/accepted as per terms & conditions of NIT and for any refund/ payment is made to me, the refund/payment may please credited to my account as per details given below:-

a) Name of agency:-
b) Bank, Branch Code, Place details etc.:-
c) Account No.:-
d) IFSC Code:-
e) UTR/RTGS No.:-

Tender inviting authority shall not be responsible in any way for non-crediting of EMD amount in the account of DSIIDC by due date and time as mentioned in NIT.

1.2.2.3 I/We……(Name of Bidder/Firm) resident of …… do hereby solemnly affirm and declare as under:-

i) That I/We am/are Sole Proprietor/Partner/Authorized Representative of the Firm/Company of M/s…… at R/o…….

ii) That upto date returns of VAT have been duly filed and no dues are pending of the VAT deptt.

iii) That this is my true and correct statement.

1.3 Post Qualification:-

1.3.1 The Bidders should have had average financial turnover at least 30% of the estimate of cost during the immediate last 3 consecutive financial year audited by a Chartered Accountant. Year in which no turnover is shown would also be considered for working out the average & details should be furnished in FORM "A".

1.3.2 The Bidder should not have incurred any loss in more than two years during the last five years ending 31 March 2012, duly certified by the Chartered Accountant. Details should be furnished in FORM "A".

1.3.3 The bidding capacity of the Bidder should be equal to or more than Estimated Cost of Work. The bidding capacity shall be worked out by the following formula:

Bidding Capacity = A × N × 2-B, where

A = Maximum value of construction works executed in any one year during the last five years (2007 - 2008 to 2011 - 2012) taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of work for which this post qualification Bid has been invited. (N = 1 in this case)

B = Value of existing commitments and on-going works to be completed during the period of completion of work for which this Bid has been invited between (Sep. 2012 to Aug. 2013).

The details should be furnished in FORM "A" & FORM "C"

1.3.4 The Bidder should have a Solvency equal to 40% of the estimated cost put to tender certified by his bankers. The details should be furnished in Form of Solvency Certificate from a Scheduled Bank in form A-1.

1.3.5 The Bidder should own construction equipment's given as under and as required for the proper and timely execution of the work to be supported with documentary evidence of purchase or authenticated copy of the purchase order and receipts of payments made to the equipment manufactures. Else, in case of hiring / leasing provide Memorandum of Understanding (MOU) from whom Bidder proposes to hire or produce a valid leasing agreement.

Sr. No.	Plant & Machinery	Qty. Required	Max Marks for Evaluation
1.	Tower Cranes	6 Nos.	2.4
2.	Hopper mixers with weigh batchers	5 Nos.	0.80
3	Dumpers/trucks/tipper/transit mixers & pump for concreting	12 Nos.	2.40
4.	Road Rollers 8 – 10 ton	4 Nos.	0.4
5.	Vibratory Roller 8 – 10 ton	1 Nos.	0.40
6	**Aluminium Form Work system for monolithic construction(Shear Wall)technology**	**20,000 Sqm**	**2.50**
7	Needle vibrators	10 Nos.	0.20
8	Earth compactors	2 Nos.	0.20
9	(i) Generator 100 KVA & above	1 Nos.	0.20
	(ii) Generator 50 KVA	2 Nos.	0.30
10.	Computerised Concrete Batching Plant for R.M.C. - 30 cum / per hour	2 Nos.	4.00
11.	Excavators	6 Nos.	1.20
		Total	**15**

The list given above is not exhaustive; the Bidder shall give an undertaking that he would mobilize any other equipment's required for proper execution of the work without any additional cost. Details of equipment's should be furnished in FORM "F".

1.3.6 The Bidder should have sufficient number of technical and administrative employees for the proper execution of the contract. The Bidder should submit a list of these employees stating clearly how these would be involved in this work. Details should be furnished in FORM "E-1".

1.3.7 The Bidders performance for each work completed in the last 7 years and work in hand should be certified by an officer not below the rank of Executive Engineer or equivalent. Details should be furnished in FORM "D".

1.3.8 The Bidder should furnish an declaration in the format described in FORM-G guaranteeing the truth and accuracy of all statements and of all answers to questions made. The affidavit will also authorize DSIIDC to approach anyone to verify the statements or enquire about the Bidders competence and general reputation.

The bidder shall submit all the documents with letter of transmittal prescribed in NIT.

1.3.9 The Bidders who have been debarred from undertaking any work or are black listed by any organization / agency in India or abroad as on the date of submission of tenders shall be summarily rejected.

Note: The Bidder is required to furnish all information in all the FORMS and their appurtenant formats included herein, (duly signed with seal) failing which the Bid is liable to be rejected.

2.0 **Pre Bid Meeting: -**

There shall be a pre-bid meeting for intending Bidders on 9th July 2012at 11.00 a.m. in the Conference Room, DSIIDC, Business Centre A- 3/4, Emporia Building, Baba Kharak Singh Marg, and New Delhi, to clear the doubts of intending Bidders, if any. The clarifications regarding the NIT/Bid document would be issued subsequently through e-Tendering website www.dsiidc.org only, and there after no further queries shall be entertained.

2.1 The intending Bidders shall upload the bid together consisting of Technical Bid & Financial Bid upto the last date & time of bid submission.

2.2 Opening & Evaluation

The following procedures for downloading and evaluation of Bids will be adopted.

i) Technical Bid shall be downloaded first on due date & time as mentioned in NIT.

ii) Financial Bid of bidders qualifying in the Technical Bid shall be opened on prescribed date & time & shall be communicated at a later date through www.dsiidc.org only.

The department reserves the right to reject any prospective application without assigning any reason & to restrict the list of qualified bidder to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

2.3 The Technical Bid of the Bidders will then be evaluated as per procedure explained in Para below to see whether each Bidder's

(a) Meets all the eligibility criteria stipulated in NIT

(b) Contains all the documents and certificates required to be furnished and

(c) Has been properly signed by the Authorized Signatory and meets other requirements stipulated in NIT.

The list of Bidders declared qualified in technical bid shall be displayed on e-tendering website www.dsiidc.org only.

2.4 Evaluation Criteria For Post Qualification

For the purpose of post qualification, Bids will be evaluated in the following manner:-

2.5.1 The initial criteria prescribed in para 1.2 & 1.3 above in respect of experience of similar

class of works completed, bidding capacity and financial turn over etc. will first be scrutinized and the Bidders eligibility for the work will be determined.

2.5.2 The Bidders qualifying the initial criteria set out in Para's 1.2 & 1.3 above only will be evaluated based on following criteria by scoring method on the basis of details furnished by the Bidders.

Sl. No	Attributes		Maximum Marks
(a)	Financial Strength:- i)Average annual turnover (16 marks) ii) Solvency certificate (4 marks)	(Form 'A')	20
(b)	Experience in similar class of works	(Form 'B)	20
(c)	Performance on works i)Time over run (20 marks) ii) Quality (15 marks)	(Form 'D')	35
(d)	Personnel and Establishment	(Form 'E' & 'E-1')	10
(e)	Plant and Equipment	(Form 'F')	15
		Total	100

The Bidders, they must secure at least fifty present marks in each criteria and sixty per cent marks in aggregate.

2.5.3 Even though a Bidder may satisfy the above requirements, he would be liable to disqualification if he has:

(a) Made misleading or false representation or deliberately suppressed the information in the forms, statements and enclosures required in the post qualification document.

(b) Record of poor performance such as abandoning work, not properly completing the contract, or financial failures/weaknesses etc.

(c) If any discrepancy noticed between the documents as uploaded at the time of submission of bid and original copies shown during verification in the office of Bid inviting authority.

2.5.4 Evaluation of Performance: -Evaluation for the Performance of Bidders for eligibility shall be done by NIT approving authority or a Committee constituted by him. If required, the works executed by the Bidders who otherwise qualify may be got inspected by a committee or any other authority as decided by NIT approving authority.

3. An agreement shall be drawn with the successful Bidders on CPWD form-12 for lump-sum (Part-B&C) of the bid & on CPWD form-7 for percentage rate bid (Part-D).The general conditions of contract for civil work in CPWD with upto date of issue of NIT amendments may be seen in the office of CPM (CD-XI) DSIIDC or on www.cpwd.gov.in Bidders shall quote their rates as per NIT conditions, which will form part of the agreement.

4. The time allowed for carrying out the work will be 12 Months from the date of start of work. The stipulated date of start of work shall be reckoned from the 10th day of issue of "letter of commencement" of Bid or from the first day of handing over the site, whichever is later. In case the Bidder fails to commence the work specified in the Bid document, the DSIIDC shall, without prejudice to any other right or remedy, be at liberty to forfeit whole of the earnest money/performance guarantee absolutely with prior approval of Chief Engineer concerned.

5. The site for the work is available, however if some portion of land is not available immediately but shall be made available during progress of the work**.**

6. i) Bid documents consisting of plans, specifications, schedule of quantities of the work to be done and the set of terms and conditions of contract to be complied with by the Bidder from whose Bid may be accepted and other necessary documents can be seen on Web Site www.govtprocurement.delhi.gov.in .

ii) The Bidder shall have to scan copy of the mode of Earnest Money Deposit and other relevant documents prescribed in NIT and upload the same scanned copies, in support of their eligibility, alongwith the Bid on web site www.govtprocurement.delhi.gov.in The Bidders shall be required to produce all the documents in original for verification in the office of CPM (CD-XI) DSIIDC, on or before **24.07.2012 upto 4 pm.** Failure to verification of all the scanned documents with original documents on due date & time will entail rejection of Bid.

iii) In case any discrepancy or any short coming is found between the documents uploaded with the original documents during the verification of documents, the DSIIDC shall, without prejudices to any other right or remedy be at liberty to forfeit 50% of EMD amount and the Bidder shall be debarred for future bidding for a period of 2 years in DSIIDC.

7. The EMD of Rs 1,66,01,000/- through RTGS/online payment shall be deposited in favour of DSIIDC, in the account no. CA 65098510764, IFS Code STBP 0000284 at State Bank of Patiala, Wazirpur Industrial Area Branch, Delhi by the due date & time of closing of bids submission.

It shall be responsibility of Bidders that the RTGS/online payment should be credited in the said account within due date & time of bids submission.

A part of earnest money is acceptable in the form of irrevocable bank guarantee also. In such cases 50% of EMD amount or Rs. 20.00 lacks, whichever is less, will have to be deposited in shape prescribed above and balance in form of Bank Guarantee issued by a scheduled bank valid for a period of six months from the last date of submission of bid. DSIIDC shall not any way be responsible in case the EMD is not found credited in the said account. No cash transaction shall be accepted.

8. The Bidder should be registered with the Provident Fund organisation and should submit copy of the registration along with the submission of bid. ESI & EPF contribution in respect of this contract shall be payable the contractor only & department shall not entertain any claim whatsoever in this respect. In case of any demand from the ESI/EPF authorities against the contractor, the same shall be deducted from their bills/dues.

9. The Bidder, whose Bid is accepted, will be required to furnish performance guarantee of 5% (Five Per cent) of the Bided amount within the period specified in Schedule 'F'. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10,000/-) or Deposit at call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any scheduled bank (in case guarantee amount is less than Rs.1,00,000/-) or Government Securities or Fixed Deposit Receipts or Bank Guarantee irrevocable of any Scheduled Bank in accordance with the prescribed form. If Bidder fails to furnish the prescribed performance guarantee within the prescribed period the earnest money is absolutely forfeited to the DSIIDC automatically without any notice & debarred for future biding for a period of two year in DSIIDC.

10. The description of the work is as follows:-

Name of Work: - Construction of Low Cost Housing for Urban Poor/Slum Rehabilitation at Tikri Kalan, Delhi. Comprising of 8420 DU's (G+4) in Phase-1(SH: 3380 DU's G+4) Package-II)

Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their Bids so as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may requisite and in general, shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their Bid. A Bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. The Bidder shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity, access facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a Bid by a Bidder implies that he has read the NIT and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the DSIIDC and local conditions and other factors having a bearing on the execution of the work.

11. The competent authority on behalf of CMD, DSIIDC does not bind himself to accept the lowest or any other Bid, and reserves to himself the authority to reject any or all of the Bids received without assigning any reason. All Bids, in which any of the prescribed conditions is not fulfilled or any condition including that of conditional rebate is put forth by the Bidder, shall be summarily rejected.
12. Canvassing whether directly or indirectly, in connection with Bids is strictly prohibited and the Bids submitted by the Bidders who resort to canvassing will be liable to rejection.
13. The competent authority on behalf of CMD, DSIIDC reserves to himself the right of accepting the whole or any part of the Bid and amend the scope & value of contract to the Bidder. The Bidder shall be bound to perform the same at the rate quoted.
14. The Bidder shall not be permitted to Bid for works in the DSIIDC, Circle (responsible for award and execution of contracts) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Project Director and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted officer in Delhi State Industrial & Infrastructure Development Corporation. Any breach of this condition by the Bidder would render him liable to be debarred from future biding in DSIIDC. The Bidder shall give a list of both Gazetted and non-gazetted DSIIDC employees related to him.
15. No Engineer of gazetted rank or other gazetted officer employed in Engineering or Administrative Department of the DSIIDC is allowed to work as a Bidder for a period of one year after his retirement from Government service, without the previous permission of the CMD, DSIIDC in writing. This contract is liable to be cancelled if either the Bidder or any of his employees is found at any time to be such a person who had not obtained the permission of the CMD, DSIIDC as aforesaid before submission of the Bid or engagement in the Bidder's service.
16. The Bid for the works shall remain open for acceptance for a period of 90 days from the date of opening of financial bid. If any Bidder withdraws his Bid before the expiry of the validity period, or before the issue of "letter of acceptance", whichever is earlier, or makes any modifications in the terms and conditions of the Bid which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid and the Bidder shall not be allowed to participate in the future Biding for two years.

17. This Notice Inviting Tender shall form a part of the contract document. The successful Bidder / Bidder, on acceptance of his Bid by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of: -
    a) The Notice Inviting Tender, all the documents including special conditions, specifications and drawings, if any, forming the Bid document as issued at the time of invitation of Bid and acceptance thereof together with any correspondence leading thereto.
    b) Standard CPWD Contract Form – 7 & 12.
18. In case of any difference / ambiguity between English & Hindi versions, English version shall prevail.
19. Engineer-in-Charge shall deduct TDS and DVAT @2% or rate in force at the time of bill or any other Tax as per prevailing Government instructions/orders from the total payment made to Bidder. In pursuance of contract, TDS shall also be deducted on advance payment to be adjusted in future bills and on the amount of cost escalation.
20. The department shall deduct Labour Cess @1% on the value of work done from each bill of the Bidder or as per prevailing Government instructions/orders at the time of bill.
21. For Composite Bids

21.1.1 The Engineer in charge (Chief Project Manager) of the major component will call composite bid comprising of civil, electrical & any other component to complete the building work. The Earnest Money will be fixed with respect to the combined estimated cost put to Bid for the composite bid.

21.1.2 The bid document will include following three components:

Part-A:-CPWD-6, CPWD-7 & 12 including schedule A to F for the major component of the work, Standard General Conditions of Contract for CPWD amended/modified up to date.

Part-B:-General / specific conditions, specifications and schedule of quantities and drawings applicable to major component(civil) of the work.

Part-C: - Schedule A to F for minor component (electrical) of the work. (SE/EE in charge of major component shall also be competent authority under clause 2 and clause 5 as mentioned in schedule A to F for major components), special conditions, specifications and schedule of quantities applicable to minor component(s) of the work.

21.1.3 The eligible Bidders shall quote rates for all items of major component as well as for all items of minor components of work.

21.1.4 After acceptance of bid by competent authority, the Engineer in charge (CPM) of major component of the work shall issue letter of acceptance. After the work is accepted by the competent authority, the main Bidder will have to enter into one agreement with Engineer in charge of major component and has also to sign two or more copies of agreement depending upon number of Engineer's in charge (CPM's) of minor components. One such signed set of agreement shall be handed over to Engineer in charge of minor component(s).Engineer in charge of major component will operate Part-B and Part-D (Percent Rate tender of the agreement alongwith Part-A of agreement. Engineer in charge of minor component(s) shall operate Part-C of the agreement alongwith part A of agreement.

21.1.5 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.

21.1.6 Security Deposit will be worked out separately for each component corresponding to the tendered cost of the respective component of works. The Earnest Money will become part of the security deposit of the major components of work.

21.1.7 The main Bidder has to associate agency(s) for minor component(s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency(s) to Engineer-in-charge of minor component(s) earlier or within one month from the date of letter of acceptance. Name of the agency(s) to be associated shall be approved by Engineer-in-charge of minor component(s). If the main Bidder himself fulfils the eligibility criteria for electrical works as mentioned in NIT of minor component & having valid electrical licence issued from Delhi Govt. then he is exempted to associate other electrical agency.

The eligibility criteria of associate electrical contractor shall be as prescribed in tender documents of minor component.

21.1.8 If the main contractor fails to associate agency/agencies for execution of minor component of work within prescribed time or furnishes incomplete details or furnishes details if ineligible agencies even after the tenderer is given due opportunity, the entire scope of such component of work shall be withdrawn from the tender and the same shall be got executed by the Engineer-in-Charge at the risk and cost of the main contractor.

21.1.9 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of minor component. The associate agency/agencies shall also have to satisfy the laid down eligibility criteria in NIT. In case Engineer-in-charge is not satisfied with the performance of any agency, he can direct the Bidder to change the agency executing such items of work and this shall be binding on the Bidder.

21.1.10 After approval of associate agency the main Bidder has to enter into agreement with Bidder(s) associated by him for execution of minor component(s). Copy of such agreement shall be submitted to Engineer in charge of minor component as well as to Engineer in charge of major component. In case of change of associate agency, the main contractor has to seek the prior approval of the Engineer-in-Charge of minor component.

21.1.11 Running payment for the major component shall be made by Engineer in charge of major discipline to the main Bidder. Running payment for minor components shall be made by the Engineer-in-charge of the discipline of minor component directly to the main Bidder.

In case main contractor fails to make the payment to the contractor associated by him within 15 days of receipt of each running account payment then on the written complaint of contractor associated for such minor component, CPM /Engineer-in-charge of minor component shall serve the show cause to main contractor and after considering the reply of the same he may make the payment directly to the contractor associated for minor component as per terms & conditions of the agreement drawn between the main contractor and associated contractor fixed by him, If reply of main contractor either not received or found unsatisfactory. Such payment made to the associated contractor shall be recovered by Engineer-in-Charge of major or minor component from the next RA/final bill due to main contractor as the case may be.

21.1.12 Final bill of whole work shall be finalized and paid by the Engineer in charge of major component. Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their component of work and pass on the same to the Engineer in charge of major component to include in the final bill for composite contract.

21.1.13 Supervision of various components of works will be carried out by the Engineer- in- charge of concerned wings of the deptt. under the overall coordination of the Engineer- in- charge of major

component.

Information & Instruction for Bidders: -

22. All information called for in the enclosed forms should be furnished against the relevant columns in the forms, if for any reasons, information is furnished on a separate sheet, and this fact should be mentioned against the relevant column. Even if no information is to be provided in a column, a "nil" or "no such case" entry should be made in that column. If any particulars/query is not applicable in case of the Bidders, it should be stated as "not applicable". The Bidders are cautioned that not giving complete information called for in the Bid document or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the bid being summarily disqualified. No information shall be entertained after submission of eligibility criteria document unless it is called for by the DSIIDC.
23. The bid should be type-written.
24. Overwriting should be avoided. Correction, if any, should be made by neatly crossing out, initialling, dating and rewriting. The agency shall submit as a package of all documents with signed letter of transmittal prescribed.
25. References, information and certificates from the respective clients certifying suitability, technical knowledge or capability of the bidder should be signed by an officer not below the rank of Executive Engineer or equivalent.
26. The bidder may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information. No information shall be entertained after submission of eligibility criteria document unless it is called for by the DSIIDC.
27. Any information furnished by the bidder found to be incorrect either immediately or at a later date, would render him liable to be debarred from tendering/taking up of work in DSIIDC.

Method of application: -

28.1 If the Bidder is an individual, the application shall be signed by him above his full type written name and current address.

28.2 If the Bidder is a proprietary firm, the application shall be signed by the proprietor above his full typewritten name and the full name of his firm with its current address.

28.3 If the Bidder is a firm in partnership, the application shall be signed by all the partners of the firm above their full typewritten names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the later case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.

28.4 If the Bidder is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The Bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.

29. The Bids once submitted cannot be withdrawn. After submission of the bid the Bidder can resubmit revised bid any number of time but before last time and date of submission of bid as notified.
30. In case, the last date of receipt of Bid is declared or happens to be a public holiday or bank holiday. Then the next working day will be treated as last day of Bid submission with the same time.
31. It is the duty of the Bidder that if any corrigendum/addendum to this NIT, shall be uploaded on the website www.dsiidc.org , that may be noted by the intending Bidder/Bidders before

uploading the Bid. The corrigendum/addendum (if any) to this NIT shall be displayed through www.dsiidc.org only.

32. The conditions given below shall be applicable only to Lump-Sum Bid i.e. Part-B & Part-C of Building work (complete civil & electrical work).

i) The schedule of quantities referred to above is only limited for the purpose of assessing the quantum of work involved by the Bidders. It is not meant for subsequent measurement & payment in the course of execution of the work. Before submitting their Bids, the Bidders shall, therefore, have to satisfy themselves that the quantities given in the Bid documents for the various items and components of the work are correct. Deficiencies noticed, if any, should be immediately brought to the notice of the Bid inviting authority, which shall examine the same, and make necessary corrections, if they required, to the Bid document before receipt of the Bid.

ii) The bidder shall execute the as per drawing, specification and special condition as prescribed in NIT. The bidder shall have no claim for any payment on account of deviations and variations in quantity of any item(s) or component(s) of the work, unless they are authorised deviations from the parameters, drawings and specifications contained in the Bid document.

iii) In case any modification for any reason is ordered in course of execution, suitable adjustment for extra payments or recovery shall be effected only if such modification results in change in the scope of work as given in the Bid documents, or any change from the specified parameters.

iv) The extra payment or recovery over and above the accepted rate shall be called for only in the event of authorised deviation from the drawings and specifications (as given and/or referred to in the Bid document) in course of execution and not otherwise.

v) The rate of deviated items shall be determined on the lines of clause 12.2 of General conditions of contract for percentage rate contract.

33. The Part-D (Percentage Rate) portion of the contract shall be operated by the Engineer-in-Charge of major component along with Part-A & PART-B of the agreement.

The Technical & Financial bid shall be uploaded together with scanned copies of:-

(i) Receipt of RTGS/ Online payment for EMD.
(ii) Valid Registration / Enlistment order in case Govt. Dept. registered agencies
(iii) Work experience certificates (along with TDS in case of Private Work).
(iv) Registration certificate under Delhi VAT 2004
(v) An receipt/acknowledgement that upto date returns of VAT have been filed
(vi) PAN card
(vii) Affidavit regarding the work, not executed through another Bidder on back to back basis as mentioned 1.2.2.1 &1.2.2.2&1.2.2.2.3(All the above three affidavits to be scanned on stamp paper of Rs 10/- separately for each work).
(viii) Form A to G including Annexures on prescribed format as per NIT documents
(ix) Valid EPF Registration
(x) Certificate of financial turnover certified from C.A.
(xi) Bank solvency certificate
(xii) Certified copy of power of attorney authorising to sign the application with certified copy of partnership deed or certified copy of the Memorandum of the Articles of Association as applicable on the constitution of firm/company.
(xiii) Service Tax registration.
(xiv) Any other document as specified in the NIT

For & On behalf of CMD, DSIIDC

CPM (CD- XI)
(Engineer-in-charge)

DELHI STATE INDUSTRIAL & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

STATE: DELHI CIRCLE: Housing

BRANCH: Works DIVISION: C.P.M. (CD-XI)

ZONE: Housing

(A) Bid for the work: Construction of Low Cost Housing for Urban Poor/Slum Rehabilitation at Tikri Kalan, Delhi. Comprising of 8420 DU's (G+4) in Phase-1 (SH: C/o 3380 DU's (G+4) Package-II)

Details of Bid (Technical Bid & Financial Bid submission:-

i) Date and Time of release of NIT through Web/press: 29 June at 11.00 a.m.
ii) Date and time of Pre Bid meeting : 9 July at 11.00 a.m.
iii) Date of start and time to upload the Bid by the intending Bidders: 14 July at 11.00
iv) Last date and time for online Bid (Technical & Financial Bid), submission: 20 July upto 03.00 p.m.
v) Date and time to download the Technical Bid: 20 July at 03.30 p.m.
vi) Date and time to download the Financial Bid: The date and time to open the financial bid (qualified Bidders only) shall be intimated later on through www.dsiidc.org only

For & On behalf of CMD, DSIIDC

CPM (CD-XI)

DSIIDC

Bid/Forwarding Letter

I/We have read and examined the notice inviting Bid, schedule of quantities for Building and Infrastructural works, specifications applicable, Drawings & Designs, General Rules and Direction, Conditions of contract, clauses of contract, Special conditions**,** Schedule for Building and Infrastructural works and other documents and Rules referred to in the conditions of contract and all other contents in the Bid document for the work.

I/We hereby Bid for the execution of the work specified by the CMD DSIIDC within the time specified in Schedule `F`, viz, schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in clause-11 of the conditions of contract form CPWD (Form-7 & 12) and with such materials as are provided for, by and in respects in accordance with, such conditions so far as applicable.

We agree to keep the Bid open for 90 (ninety) days from the date of opening of financial bid thereof and not to make any modifications in its terms and conditions.

A sum of Rs. 1,66,01,000/- in favour of DSIIDC through RTGS/ online payment against EMD is hereby forwarded.

If I/We fails to furnish the prescribed performance guarantee within prescribed period,
I/We agree that the said CMD DSIIDC or his successors in office shall without prejudice to any right of remedy, be at liberty to forfeit the said earnest money absolutely. Further,

If I/We fail to commence the work as specified,

I/We agree that CMD DSIIDC, or his successors in office shall without prejudice to any right or remedy available in law, be at liberty to forfeit the said earnest money and performance guarantee otherwise the said earnest money shall be retained by him towards security deposit of the Bid form.
I/We hereby declare that I/We shall treat the Bid documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/We am/ are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

I hereby accept all the terms and conditions of the Bid.

Dated…… Signature of Bidder

Postal Address:

Witness:

Address:

Occupation:

ACCEPTANCE

The above Bid (as modified by you as mentioned in the letters mentioned here under) is accepted by me for and on behalf of the CMD, DSIIDC for a sum of
RS.....

The letters referred below shall form part of this contract Agreement:-

i)

ii)

iii)

For & on behalf of the C.M.D., DSIIDC

Signature ……....

Designation……

PROFORMA OF SCHEDULES (A to F) (MAJOR COMPONENT)

SCHEDULE `A`

Building Works:-

Part-A (Major component): Lump sum bid for Building work, Internal Water Supply & Sanitary Works all complete.
Indicative schedule of quantity page…to …..

Part-B (Minor component) Lump Sum bid (For Internal Electrical Work Complete)
Indicative schedule of quantity page…to …..

Development Works:-

PART- D: On percentage rate basis for infrastructural works like drainage, S.W. drains, roads and water supply etc. all complete.

Schedule of quantities Page…….to…….

SCHEDULE `B`

Schedule of materials to be issued to the contractor: - Not applicable (All materials to be arranged by the Bidder)

SCHEDULE `C`

Tools and plants to be hired to the contractor

S. No.	Description	Hire charges per day	Place of Issue
1.	2.	3.	4.

All Tools & Plants are to be arranged by the Bidder.

SCHEDULE `D`

Extra schedule for specific requirements/documents for the work, if any --------

Not Applicable

SCHEDULE `E`

Reference to General condition of contract: GCC 2010 for CPWD works incorporating amendments up to date 27.02.2012vide OM no. DG/CON/260

Name of the work: Construction of Low Cost Housing for Urban Poor/Slum Rehabilitation at Tikri Kalan, Delhi. Comprising of 8420 DU's (G+4) in Phase-1 (SH: C/o 3380 DU's (G+4))(Package-II)

Estimated cost of work (Sum of all components of composite bid): Rs. 1,56,00,78,285/-

Earnest Money:	Rs.
Performance Guarantee:	5% of the Bided value
Security Deposit:	5% of Bided value

SCHEDULE `F`

GENERAL RULES & DIRECTIONS:

Officer Inviting Bid	CPM (CD-XI)

Definitions:

Engineer-in-charge	CPM (CD-XI)
Technical Sanctioning Authority	Chief Engineer (Housing)
Accepting Authority	WORKS ADVISORY BOARD DSIIDC
Percentage on cost of materials and labour to cover all overhead and profits:	15%
Standard Schedule of Rates:	DSR 2007 (Reprint-2010) for civil & Schedule of rates (Part-I&II) 2007 For Electrical Work with upto date correction slips
Department:	D.S.I.I.D.C.
Standard CPWD/DSIIDC contract Form:	CPWD FORM 12 & 7 with upto date amendment.

CLAUSE-1

i) Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance:	Ten days
ii) Maximum allowable extension beyond the period provided in (i) above	Seven days

CLAUSE-2

Authority for fixing compensation under clause 2. Project Director/SE (DSIIDC)

CLAUSE- 2A : Provision of incentive for early completion as contained in CPWD 7 is not applicable.

CLAUSE-5

Number of days after the date of issue of letter of commencement for reckoning date of start. 10 Days

TABLE OF MILE STONE(S)

S.No.	Financial Progress	Time allowed (from date of start)	Amount to be withheld in case of non-achievement of mile stone
1	1/8 th(of the whole work)	1/4 th (of the whole work)	In the event of not achieving the necessary progress as assessed from the running payment. 1% of the tendered value of work will be withheld for failure to achieve each mile stone.
2.	3/8th (of the whole work)	1/2 th (of the whole work)	
3.	3/4th (of the whole work)	3/4th (of the whole work)	
4.	Full	Full	

Time allowed for execution of work: 12 months from the 10th day of date of letter commencement or handing over the site whichever is later

Authority to decide:-

i). To give fair and reasonable Extension of time for completion of work: Project Director/SE (DSIIDC)

ii) Rescheduling of milestone: Project Director/SE (DSIIDC)

CLAUSE – 6, 6 (A) Clause (6A) applicable

All running and final bills for payment shall be submitted by the Bidder duly supported with the detailed measurements / levels with relevant supporting documents duly entered in the Measurement Books / Level Books by the Bidders as per CPWD specification/guidelines to the entire satisfaction of the Engineer-in-charge

CLAUSE 7 : Rs. Eight Crores or mutually agreed upon.

Clause 10 A : The Bidder shall be required to be establish complete field testing laboratory to carried out all the test as required and specified in Bid Documents and arrange all the relevant codes & standards .the Bidder shall also arrange for more equipment's /codes & standards as per directions on Engineer-In-charge, if they are needed during the execution of the work.

CLAUSE 10B : Applicable with prior approval of CMD, DSIIDC

CLAUSE 10C : Applicable

CLAUSE 10CA : Applicable

Material covered under this clause	Nearest material other than Cement*/ reinforcement bars & structural steel for which all India wholesale price index is to be forwarded.	Base price of all the material covered under clause 10CA	
		Base Price	Corresponding Period
Cement (OPC) 43 grade	Cement	5,500/- MT	May 2012
Steel Reinforcement TMT 500	Steel Reinforcement (i)Primary Manufacturer (ii)Secondary Manufacturer	52550/- MT 48200/- MT	May 2012
Structural Steel	Structural Steel	49650/- MT	May 2012
Bitumen (VG30)	Bitumen	48,036/-MT	1st June 2012

* Includes Cement component used in RMC brought at site from outside approved RMC plants, if any.

Component of Cement, Steel, Labour etc. to exercise 10C and 10CA has been taken on the basis of basic rates of DSR 2007.

Components of	Cement		Steel		Bitumen	Labour		
	(Bldg.)	(Infra)	(Bldg.)	(Infra)	(Infra)	Civil	Electrical	Infra

CLAUSE 10CC : Not Applicable

CLAUSE-11 :

Specifications to be followed:-

i).Particular specifications for monolithic RCC construction technology for building works given in Bid document including special condition, drawings & CPWD specifications 2009 vol.- I & II with upto date correction slips upto date of NIT.

ii). CPWD General Specifications 2005(Internal)of electrical work with upto date corrections slips

CLAUSE-12 :

Deviation/variation, extent and pricing.

1. For Construction of Dwelling Units:- (Civil & Electrical works)

(i) Number of Dwelling units: Deviation in respect of dwelling units can be ± 30% (Bidder shall have to execute the work on the agreement's rates only)

(ii) Any change in the quantity of any item beyond the drawings & specifications issued shall be treated as deviation in the quantity and its amount shall be added / subtracted from the lump sum quoted rates @ DSR 2007 rates ± percentage rates at which the work shall be awarded for building work.

(iii) Any item executed beyond drawings and specification shall be treated as extra item/substituted and rate derived as per Clause – 12.2/12.3

2. For Infrastructural development works:-

Deviation in omission, alterations, addition to or substitution from the Original specifications, drawings & instructions.	
Foundations upto Plinth	100%
Super Structure	30%

CLAUSE-16

Competent Authority for deciding reduced rates: Project Director/SE (DSIIDC)

CLAUSE – 25

Constitution of Dispute Redressal Committee (DRC):

a) One Chief Engineer (Chairman) (other than under whose jurisdiction work falls)
b) One Superintending Engineer/Project Director (other than under whose jurisdiction work falls)(Member)
c) The Superintending Engineer/ Project Director in charge of the work shall present case before DRC but shall not have any part in decision making.(Member)

PROVISION UNDER CLAUSE 36(i)

REQUIREMENT OF MINIMUM TECHNICAL REPRESENTATIVE(S)* AND RECOVERY RATE

S. No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal, Technical/ Technical representative)	Minimum Experience	Number	Rate at which recovery shall be made from the Bidder in the event of not fulfilling provision of clause 36(i).		Max Marks for Evaluation
						Figures	Words	
1.	Degree Holder	Civil	Project Manager	15 years	1 Nos.	Rs. 50,000/- per month	Rs. Fifty Thousand PM	1 Marks
2.	**Degree Holder	Civil	Site/Field Engineer (For Work supervision & Quality control)	10 years	5 Nos.	Rs. 40,000/- per month	Rs. Forty Thousand PM	5 Marks
3.	**Degree Holder OR Diploma Holder	Civil Civil	Graduate Engineer Quantity Surveyor/Surveyor Quantity Surveyor/Surveyor	Nil 5 Years	2 Nos.	Rs. 30,000/- per month	Rs. Thirty Thousand PM	1.5Marks
4.	*Degree Holder Degree Holder OR Diploma Holder	Elect. Elect Elect	Technical Representative Technical Representative Technical Representative	5 Years Nil 5 Years	1 Nos. 2 Nos.	Rs. 35,000/- per month Rs. 30,000/- per month	Rs. Thirty Five Thousand PM Rs. Thirty Thousand PM	1.0Marks 1.5Marks

* The schedule is inclusive of technical representatives prescribed in schedule A to F of minor component.

** Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

CLAUSE-42

i) Schedule/Statement for determining theoretical quantity of Cement & Bitumen: DSR2007 (Reprint 2010) with correction slip issued upto date of issue of NIT.

ii) Variations permissible on theoretical quantities

(a) Cement : 2% plus/minus.

(b) Steel reinforcement for each diameter: 2% plus/minus.

(c) Bitumen : 2.5% plus only& Nil on minus side.

(d) All other materials : As laid down in CPWD specifications/relevant BIS codes

RECOVERY IN CASE OF VARIATION BEYOND LIMITS

In case the actual consumption of below mentioned materials is less than the permissible variation limit then panel rate recoveries at the rates given below or Market rate whichever is higher shall be made as follows :-

1.	OPC Cement(43 grade)	Rs.6050/- Per MT
2.	Steel Reinforcement (TMT)	Rs 57805/-Per MT
3.	Structural Steel Sections	Rs. 54615/- Per MT
4.	Bitumen (VG30)	Rs. 52,840/- Per MT

For & On behalf of CMD, DSIIDC

CPM (CD) - XI

DSIIDC

Signature of the Bidder (s)

LETTER OF TRANSMITTAL

From: Name & Address of Bidder.

To

Chief Project Manager (CD-XI)
DSIIDC
New Delhi.

Subject: Submission of Bid for the work of Construction of Low Cost Housing for Urban Poor/Slum Rehabilitation at Tikri Kalan, Delhi. Comprising of 8420 DU's (G+4) in Phase-1(SH: C/o 3380 DU's (G+4)(Package-II)

Sir,

Having examined the details given in Bid document for the above work, I/we hereby submit the relevant information & documents.

1. I/we hereby certify that all the statement made and information supplied in the enclosed FORM A to G & Annexure and accompanying statements are true and correct.
2. I/we also submit herewith the copies/ copy of the PAN Card, Service Tax Registration, VAT Registration in respect of the Firm/ Individual.
3. I/We also submit herewith the attested copy of the valid EPF Registration.
4. I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
5. I/we submit herewith the requisite certified solvency certificate and authorize the Chief Project Manager (CD-XI),DSIIDC, New Delhi to approach the Bank issuing the solvency certificate to confirm the correctness thereof.
6. I/ We also provide certificate of Financial Turnover certified by C.A.
7. I/we also authorize Chief Project Manager (CD-XI),DSIIDC, New Delhi to approach individuals, employers, firms and corporation to verify our competence and general reputation.

Enclosures: As above.

Seal of Applicant

Date of submission

Signature(s) of Applicant(s)

FORM -A

Financial Information

Financial Analysis - Details to be furnished duly supported by figures in Balance sheet/ Profit and loss Account for the last seven years duly certified by the Chartered Accountant as submitted by the Bidder to the Income - Tax Department (Copies to be attached)

Financial Years	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Average for last three years
	T1	T2	T3	T4	T5	T6	T7	= (T5+T6+T7)/3
Gross annual Turnover on construction works (Crores)								
Profit/Loss								

Financial Position w.r.t.	
Value of A = Max of T1 to T7 Bid Capacity Confirmation where N= 1.0 Value of B = (Refer Form C) Capacity (in Crores) Bid capacity = (A x N x 2 - B)	

II Financial arrangements for carrying out the proposed work

III The following certificates are enclosed: -

a) Financial arrangements for carrying out the proposed work

b) Solvency Certificate from Bankers of the Bidder in the prescribed form (Banker's certificate in the specified format to be appended in Form A-1)

c) Copy of valid VAT registration and copy of latest VAT returns filed with the VAT deptt. are enclosed along with certificate of C.A. that upto date VAT returns have been filed with the VAT deptt.

Signature of Chartered Accountant with seal (Signature of Bidder)

Form of Solvency Certificate from a Scheduled Bank (A -1)

This is to certify that to the best of our knowledge and information Ms/Shri …….. having marginally noted address, a customer of our bank are/is respectable and can be treated as good for any engagement up to a limit of Rs …… (Rupees……..……)

This certificate is issued without any guarantee or responsibility on the Bank or any of the officers.

(Signature)

Name the bank with seal

Note: i) Banker certificate should be on letter head of the bank
ii) In case of partnership firm, certificate to include names of all partners as recorded with the Bank.

FORM-B

DETAILS OF ALL SIMILAR WORKS COMPLETED DURING THE LAST SEVEN YEARS ENDING LAST DAY OF THE MONTH (PREVIOUS TO ONE IN WHICH BIDS ARE INVITED)

Sr. No	**Description**	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
1.	Name of work/project and location							
2.	Owner or sponsoring organization							
3.	Cost of work in Rs. (Cost of work done in crores) i) Civil component ii) Electrical component							
4.	Date of commencement as per agreement							
5.	Stipulated date of completion							
6.	Actual date of completion							
7.	Litigation/Arbitration pending/in progress with details(Gross amount claimed and amount awarded by the Arbitrator)							
8	Name and address / telephone of concerned officer of deptt. to whom reference may be made.							
9	Remarks							

Signature of Bidder (S)

FORM-B1

DETAILS OF WORKS EXCUTED/ UNDER EXCUTION IN ANY GOVT. DEPTT.

Sr. No	**Description**	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
1.	Name of work/project and location							
2.	Owner or sponsoring organization							
3.	Cost of work in Rs. (Cost of work done in crores) i) Civil component ii) Electrical component							
4.	Date of commencement as per agreement							
5.	Stipulated date of completion							
6.	Actual date of completion							
7.	Litigation/Arbitration pending/in progress with details(Gross amount claimed and amount awarded by the Arbitrator)							
8	Name and address / telephone of concerned officer of deptt. to whom reference may be made.							
9	Remarks							

Signature of Bidder (S)

FORM-B2

LIST OF HOUSING WORK EXECUTED/ UNDER EXECUTION USING MONOLITHIC CONSTRUCTION TECHNOLOGY (SHEAR WALL)

S.No.	Name of Agency	Name of Work	Contract Value (In Cr.)	Work Executed (In Cr.)	Amount of Bill paid (In Cr.)	Work Completed / Under Execution

FORM -C

Works / Projects including electrical works under execution or awarded
(PREVIOUS TO ONE IN WHICH BIDS ARE INVITED)

Sr. No.		
1.	**Name of work / project and location**	
2.	**Owner or sponsoring organization**	
3.	**Cost of work (in crores)**	
4.	**Date of commencement as per contract**	
5.	**Stipulated date of completion**	
6.	**Upto date progress of work (Percentage)**	
7.	**Slow progress, if any &reasons thereof**	
8.	**Name and address / Telephone number of officer to whom reference may be made**	
9.	**Remarks (Indicate whether any show cause notice issued or arbitration initiated during the progress of work).**	

Certified that the above list of works is complete and no work has been left out and that the information given is correct to my knowledge & belief.

Signature of Bidder (s)

Form C-1

Details of Dwelling Units (Low cost Housing) under Award/Execution

S. No.	Name of Agency	Name of Work (Project of Low Cost Housing)	Deptt. Concerned (DSIIDC/ DUSIB)	Dwelling Units (No.)			Total No. of DU's	Remarks
				Under Award	Under Execution	Work in Question		
1.	2.	3.	4.	5.	6.	7.	8.	9.

Certified that the details of Dwelling Units indicated in the form are correct & true

Signature of Bidder

FORM -D

Performance report of works referred to in form "B" & "C"

1.	Name of work / Project & Location	
2.	Agreement No.	
3.	Estimated Cost	
4.	Tendered Cost	
5.	Date of Start	
6.	Date of Completion	
	i) Stipulated Date of Completion	
	ii) Actual Date of Completion	
7.	Amount of compensation levied for delayed completion, if any.	
8.	*Levy of compensation not decided.	
9.	Amount of reduced rates items, if any	
10.	Performance Report	
i)	Quality work	Very Good/Good/Fair/Poor
ii)	Financial soundness	Very Good/Good/Fair/Poor
iii)	Technical proficiency	Very Good/Good/Fair/Poor
iv)	Resourcefulness	Very Good/Good/Fair/Poor
v)	General Behaviour	Very Good/Good/Fair/Poor

Date:

Executive Engineer or Equivalent

*In case levy of compensation has not been decided yet, the same should be mentioned as levy of compensation not decided yet.

Signature of the Bidder (s)

FORM -E

Structure and Organization

Sr. No	Description	
1	Name and address of the Bidder	
2	Telephone No. / Fax No.	
3	Legal Status [Attach copies of original document defining the legal Status of the Bidder with Names and Title of Directors/partners] (a) An Individual (b) A proprietary firm (c) A Firm in Partnership (d) A Limited Company or Corporation	
4	Particulars of registration with various Government Bodies (Attach Attested Photo Copy) (i) (ii) (iii)	Registration Number
5	Names and Title of Directors and Officers with designation of concerned with this work	
6	Designation of individual Partner/Director authorized to act for the organization	
7	Was the applicant ever required to suspend construction for a period of more than six months continuously after he commenced the construction? If so, give the name of the project and reasons thereof	
8	Has the applicant or his constituent partner ever abandoned the work awarded to him incomplete? (If so, give name of the project and reasons for abandoning the work).	
9	Was the applicant or his constituent partner ever debarred/ black listed For Biding in any organization at any time? If so, give details.	
10	Was the applicant or any constituent partner in case of partnership firm, ever been convicted by a court of law? If so give details.	
11	In which field of civil engineering the applicant has got specialization and interest?	
12	Any other information considered necessary but not included above.	

Signature of Bidder (s)

FORM E-1

Details of Technical and Administrative personnel to be employed for the work

Sl. No	Designation	Total number	Number Available for this work	Name	Qualification	Professional and details of work carried out	How these would be involved in this work	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1	Project Manager (Civil)							
2	Site/ Field Engineer(s) (Civil) (Quality Control)							
3	Graduate Engineer(s) (Civil) (Qty. Surveyor) i) Degree Holder ii) Diploma Holder							
4	Technical Representative (Electrical) i) Degree Holder ii) Diploma Holder							
5	Others							

The Bidder shall list out the details of Project Manager, Material/Planning Engineer, Quality Control and Site Engineers etc. having experience in Building & Development & Electrical works, along with their qualifications (Graduate Engineer/Diploma holder) proposed to be deployed for the project.

Signature of Bidder(s)

FORM-F

Details of Construction Plant & Equipment likely to be used in carrying out the work

S. No.	Name of equipment	Nos.	Capacity or type	Age	Condition	Ownership Status			Current location	Remarks
						Presently Owned	Hire/ Leased	To be purchased		
1	2	3	4	5	6	7	8	9	10	11
1.	Tower Cranes	6								
2.	Hopper mixers with weigh	5								
3.	Dumpers/trucks/tipper/transit mixers & pump for concreting	12								
4.	Road Rollers 8 – 10 ton	4								
5.	Vibratory Roller 8 – 10 ton	1								
6.	**Aluminium Form Work system for monolithic construction (Shear Wall) technology**	**20,000 Sqm**								
7.	Needle vibrators	10								
8.	Earth compactors	2								
9.	(i) Generator 100 KVA & above	1								
	(ii) Generator 50 KVA	2								
10.	Computerised Concrete Batching Plant for R.M.C. - 30 cum / per hour	2								
11.	Excavators	6								
										Total

Signature of the Bidder (s)

FORM-G

DECLARATION

NAME & ADDRESS OF BIDDER: ----------

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.
2. The undersigned hereby authorize (s) and requests any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the DSIIDC, Delhi to verify this statement or regarding my (our) competence and general reputation.
3. The undersigned understands and agrees that further Qualifying information may be requested and agrees to furnish any such information at the request of the DSIIDC, Delhi.
4. I/We confirm that the General Condition & Specification and Special Conditions appended in the Tender Documents have been fully examined and full cognization taken therein for arriving at the item unit prices and total amount and tendered sum contained in my/ our tender.

Signature of Authorized Signatory

Date: -

Name:-

Designation:-

GENERAL SPECIFICATIONS

1. Specifications to be followed for execution of work shall be as under:

1.1.1. The entire Civil & Electrical work shall be done as per CPWD specifications with upto date correction slip upto the date of publication of NIT.
In case of any discrepancy, the following order of preference shall be observed.

i) Description of Schedule of quantities
ii) Particular specification and Special condition, if any.
iii) Drawings
iv) C.P.W.D. specifications
v) Indian Standard Specifications/ B.I.S code.
Whenever any reference to any Indian Standard specifications occurs in the documents relating to this contract the same shall be inclusive of all amendments issued there to or revisions thereof if any, upto the date of receipt of Bids.

1.2 For items and works involving monolithic construction (Shear Wall) technology, the specifications and guidelines of CBRI and BMTPC shall be followed. In case, any ambiguity in interpretation of specification for such items of monolithic construction (Shear Wall) technology, the decision of the Engineer-in-Charge shall be final.

2. The Bidder shall cut, leave or form holes, recesses, chases etc. in concrete, brick work, walls, ceilings, floors preferably with electrical appliances and in any other situations as required or as directed by the Engineer-in-Charge and make good, the same in cement concrete / cement mortar and finished to match the adjoining surfaces. The agency shall leave the sleeve of appropriate size to cross the water supply & sanitary pipe through RCC slab/walls.

3. Any hole and / or opening required be leaving / making for any fittings or fixtures or pipes shall be made / left as the work proceeds, cutting the RCC works, subsequently shall not be permitted under any circumstances. The agency shall keep the provision in the formwork to house the electrical boards/ wires/ water supply & sanitary pipes without any later on dismantling.
All clamps, bolts, fittings / fixture etc. required to be embedded in RCC works shall be done as the work proceeds, embedding subsequently by cutting / drilling or dismantling RCC work shall not be permitted under any circumstances.

4. Welding wherever required in the work like in grill, railing, etc. shall be done in full length of the contact area.

5. i) uPVC sanitary/ RW pipes shall be fixed in R.C.C. members through expansion hold fasteners.
ii) The door/window frames shall be fixed by the expansion dash fastener after machined drilling.
The agency shall get prior approval of committee (constituted by the Chief Engineer(H)) to use major material required in the work of Civil & Electrical.
iii) The agency shall bring three to five samples of the each item ISI marked & as per CPWD specifications. If ISI marked material is not manufactured then it will be as per relevant IS code. If the committee is not satisfied with the samples brought by the agency, committee can ask for additional three to five samples and so on. The committee shall approve these samples. The committee may recommend more than one brand of item to be used in the work depending on the quality and its availability.
iv) Material for the work shall be procured from the approved manufacture or their authorized dealers only. The Engineer-In-Charge reserves the right to ask the agency to produce original invoice / bill in support of genuine procurement .

Scope of the Work & Details of Specifications

Name of Work: - Construction of Low Cost Housing for Urban Poor/Slum Rehabilitation at Tikri Kalan, Delhi. Comprising of 8420 DU's (G+4) in Phase-1

(SH: C/o 3380 DU's (G+4) (Package-II)

Scope of work:- Construction of 3380 DU's complete in all respect including internal water supply/ sanitary installations & electrification.

S. No.	Item of work	Description
1	Foundation and Plinth	Raft foundation as per drawing attached.
		Depth of excavation 1500 mm from NGL.
		75 mm thick C.C. 1:5:10 (1 cement: 5 coarse sand:10 graded stone aggregate 40 mm)
		Depth of Water table 6 met. (approx.)
		130 mm thick RCC walls up to plinth level except Stair Case walls. 160 mm thick RCC walls of Stair Case
	Plinth filling	
	(a) Earth filling :	The earth shall be filled up to formation level as indicated in drawing transported from Bawana Industrial area of DSIIDC without any royalty but with necessary administrative permission by the agency.
	(b) Sand filling under floor (on Ground Floor):	Jamuna sand 75 mm thick
	(c) Concrete under floor (on Ground Floor):	100 mm layer of CC 1:5:10 with stone aggregate (1cement :5 coarse sand :10 graded stone aggregate 40 mm nominal size)

2	Filling up depression /sunken portions in bath WC & Kitchen	Water proofing treatment with tape Crete / armour rete as per CPWD specifications on 12 mm bed of plaster, treatment again protected by 12 mm cement plaster 1: 3 (1 cement: 3 coarse sand) finished with floating coat of neat cement. Encasing joints of pipes and traps with CC 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm) with sunken floor. The filling shall be with CC 1:5:10 with stone aggregate (1 cement: 5 Coarse sand: 10 graded stone aggregate 40 mm nominal size) for WC, bath & kitchen sunken portions. The filling under plinth shall be part of "Building work" The floor of WC & Bath shall be lowered by 400 mm and for kitchen 150 mm . A40 mm dia uPVC spout with chamfered edge at 45 degree shall be provided of length 200 mm in each balcony and 250 mm in sunken portion of Bath & WC at bottom after waterproofing treatment. A uPVC floor trap in Bath/Kitchen of specified size shall be provided as per direction of Engineer-in -charge properly jointed with PVC adhesive solution to sanitary pipe
3	Super Structure	
	RCC work	Superstructure will be with RCC monolithic construction (shear wall) technology with thickness of RCC wall as 130 mm thick and slab 120 mm thick using aluminium or any suitable shuttering form work used for monolithic construction as per approved design to achieve smooth finishing without plaster. The walls of stair case shall be 160 mm thick of RCC The wall of balcony shall be of RCC of 1050 mm high with semicircle groove of 10 mm (app) size along the all corner edges. Parapet shall be 130 mm thick and 300 mm high. The RCC shall be M25 grade based on design mix.
4	Staircase	Staircase shall be of RCC M25 grade with thickness of waist slab and landing 120 mm thick. Steps of stair shall be of Brick Work (Non Modular) in cement mortar 1:6 (1cement:6coarse sand). Width of stair 1500 mm wide, Tread 250 mm &

		Riser 161 mm. The MS staircase railing shall be as per drawing with hand rail of standard D- Type The nosing of MS angle 25 x 25 x3 mm shall be provided on each step as indicating in drawing. 25 mm thick CC 1:2:4 (1 cement: 2 coarse sand: 4 stone aggregate) shall be laid on treads / landings of stair case with floating coat of neat cement. The riser of steps shall be plastered with 18 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) with floating coat of neat cement. Side portion of stair case flight shall be plastered with 12 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) with neat cement punning. The top of steps in stair case shall be in chequered pattern. The height of RCC wall at landing shall be 1050 mm high with finished top.
5	Door / Windows	MS angle frame of 40 x 40 x 5 mm for main Door, for other doors / windows frame of MS 35 X 35 X5 mm shall be provided for doors except Door of WC and Bath. The doors / windows frame shall be fixed with dash fastener expandable of appropriate size as per Direction of Engineer-in-Charge .Three number dash fastener of size 10x80 mm in each side of door frame (Total six dash fastener per door) and two number dash fastener of same size on each side of window frames shall be provided (Total four dash fastener per window). MS ring / clamp of sufficient size and strength shall be welded to steel frames of doors / windows to house the each tower bolt provided in doors / windows. 35 mm thick non decorative single leaf flush door shall be on entrance and other doors shall be as 30 mm thick. Window shutter shall be having 30 mm thick of chemically treated and kiln seasoned Mirandi Wood with glass panelling as indicated in Drawings. The width of style / rails shall be as per Drawing. The 4 mm thick glass panes shall be provided in window shutter with wooden beading of appropriate size. WC and Bath door and frame shall be of FRP. Size as per Drawings.
6	Door/ Windows Fitting	Oxidised MS fitting shall be provided on Door / Windows shutter including WC and Bath. Arrangement shall be made in RCC walls to house the sliding bolts in a proper manner as per direction of Engineer-in-Charge. One MS eye and hook shall be provided in each

		openable window shutter. MS grill of pattern as indicated in Drawings shall be welded with all window frame at all floors.
7	Sunshade	Sunshade shall be cast in situ RCC of M25 grade as per Drawing on all the windows with slant top surface and drip course on all the three side of edges. 40 mm thick CC jalli shall be provided in opening for ventilators in WC and Bath.
8	Flooring	40 mm thick CC 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate of 20 mm nominal size) shall be provided in all the rooms , Kitchen, WC, Bath, Balcony and all circulation area except staircase with 40 x 4 mm dividing glass strips. 18 mm thick 100 mm high skirting with Cement Mortar 1:3 (1 Cement : 3 Coarse sand)with floating coat of neat Cement shall be in all Rooms / Kitchen, Balcony & circulation area. Ceramic tiles of approved design color and size shall be provided in WC walls up to 600 mm high and 1200 mm high in Bathroom.
9	Kitchen	20 mm Kota stone flooring (not more than in two pieces) with semi round edge shall be provided on the Ferro cement shelf 600 mm wide and 30 mm thick supported on both ends and middle 115 mm thick Brick walls plastered with cement mortar 1:4(1 cement : 4 coarse sand). The pre-cast Ferro cement slab shall be casted with 1:1.5 (1 cement:1.5 coarse sand) with one layer of welded wire fabric (WWF) of 12 gauge 25 x 75 mm in two layers of chicken mesh 12.5 x 12.5 mm spacing. A hole of appropriate size shall be drilled mechanically in each kitchen platform at appropriate location to house the gas pipe. 600 mm high ceramic glazed tiles shall be provided on the wall along the Ferro Cement Slab. A stainless steel kitchen sinks of size 610 x 460 x 200 mm with PTMT waste and flexible waste pipe of length up to PTMT grating. The kitchen sink shall be supported on two MS / CI brackets of sufficient size fixed on wall with dash fasteners of required size including painting of brackets.
10	Finishing	Internal Finishing: 1mm thick (average) cement based putty shall be provided on all the internal walls except Bath, WC, and Kitchen. Dry distemper shall be provided in all the rooms with ceiling except WC / Bath and Kitchen.

		White washing shall be done on all internal walls and ceilings of WC, Bath, kitchen including circulation area and ceiling and internal walls of balcony/ staircase. External Finishing: Acrylic smooth exterior paint on all the external walls including all outer surfaces of balcony. Synthetic enamel paint on all steel and wood work. (On Wood work with wood primer)
11	Roofing	A cutout/ manhole of appropriate size as indicated in drawings shall be left in the RCC slab of top floor. Brick bat coba waterproofing treatment shall be done on terrace upto 300 mm on parapet, with concave shape Gola at Junction with parapet wall. Two khurra per block of 20 DU'S shall be made with PTMT grating of appropriate size. 110 mm uPVC rain water pipe with specified clamp with shoe bend shall be provided. The steel shutter shall be welded with three number MS hinges of 100 mm size and MS sliding bolt of sufficient strength and of size 300 x 16 mm including arrangement in the RCC wall to house the bolt. A 450 mm wide M 25 grade RCC projection shall be provided at lintel level of mumty door of thickness as per Drawing.
12	Internal water supply / sanitary installation	UPVC SWR pipes (ISI mark) type-B with necessary uPVC fittings shall be provided as sanitary pipe. i) 110 mm dia pipe for WC. ii) 75 mm dia pipe for Bath & Kitchen. iii) 75 mm dia pipe for vent pipe.
		One number white vitreous China, 580 mm Orissa pattern pan with uPVC P or S trap with 10 litre low level PVC flushing cistern of approved quality.

		Brick masonry blocks of 9" x 4.5" with 6" high or Cement Concrete block 1:2:4 approved as per requirement, shall be made at every junction / turning of water supply pipes or spacing as per direction of Engineer-in-Charge to support all supply pipe on terrace.
		The gun metal gate valve/ scour valve of suitable size shall be provided on each inlet / out let of external PPR pipe network on terrace / walls. The location and size as per Drawing.
		In each WC a connection for recycled water shall be provided only for cistern and tap.
		PTMT bib / angle cock shall be provided.
		32 mm dia Inlet pipe (PPR) for GF to OH Tank.
		25 mm dia Outlet pipe (PPR) from OH Tank to each DU.
		32 mm dia Inlet pipe (PPR) for PVC OH Tank from GF to OH Tank.
		20 mm dia Overflow pipe (PPR) in RCC OH Tank at the end opposite to inlet.
		25 mm dia Outlet pipe (PPR) from PVC OH Tank to each WC of every DU.
		Note:- The Inlet/Outlet pipes upto the ground floor of each block shall be part of each DU in lump-sum bid portion.
13	Door frame & shutter for WC & bath.	FRP frames and shutter one each in WC & Bath.
14	Gully trap & Manhole of specified size with SFRC cover	Five Gully trap for one block of 20 (twenty) DU's shall be provided. The uPVC SWR pipe upto Gully trap shall be considered part of lump-sum bid for each DU.
15	Door fittings	Oxidized MS fittings :- Sliding door bolt 250 x 16mm, Two on each entrance door. One on balcony door. One MS tower bolt 250x10 mm in each door upper side. One MS tower bolt 150x10 mm in each door lower side. Two MS handles 125 mm in each door. Aluminium single door stopper, one no in each door except WC/Bath. Copper oxidized MS pull bolt lock of 85 x 42 mm, one on each bed room door.
16	Window fittings	Each window shutter shall have following fittings:- Two MS tower bolts 100 x 10 mm

	(for openable shutters)	One MS handle 100 mm One MS eye & hook in each shutters.
	Water supply / Sanitary Fittings	
17	Orissa pattern WC pan 580 x 440 mm with low level PVC system	One in each DU
18	Stainless steel kitchen sink 610 x 460 x 200 mm	One in each DU
19	PTMT bib cock	
	15 mm bore with 122 mm long	One in each sink in each DU
	15 mm bore with 86 mm long	Two in each DU
20	PTMT angle stop cock 15 mm	One in each cistern
21	PVC connection pipe with PTMT union 30 cm in length with 15 mm bore	One in each DU
22	PTMT waste coupling 38 / 40 mm	One in each sink in each DU
23	PVC waste pipe 32 mm dia flexible	One in each sink in each DU
24	PTMT grating circular	
	100 mm	One in each DU
	125 mm dia with 25 mm waste hole.	One in each DU in Kitchen
25	40 mm dia uPVC spout	One in each WC, Bath & Balcony.(Total 3 Nos. per DU)
26	Overhead Tank	
a		RCC overhead tank of capacity of 11000 litre (300 litter per DU's + 5000 litter for Fire for 20 DU's) (without independent staging) portioned in five compartments with 100 mm thick M25 RCC baffle wall of specified capacity as per drawing with waterproofing treatment shall be provided. Ceramic tiles shall be provided in bottom and wall faces of OH tanks with properly grouted at all joints
b		Provision of extra inlets/ outlets points in RCC OH Tank shall be made for future.
		Top slab of RCC overhead tank shall be with Precast RCC circular cover of 500 mm dia (LD10) with frame shall be provided.

		Total manhole in RCC OH Tank shall be six in number.
c		Two separate PVC overhead tank of 1500 litter per block of 20 DU's (to store the recycled Water (@ 150 Liter per DU) anchored properly and placed on tharry of cement concrete.
d		PTMT float valve of appropriate size shall be provided in each RCC / PVC tank.
e		20 mm dia PPR pipe shall be provided as over flow pipe ending at khurra.
27	Recirculation	The water supply is dual supply system including recirculation of treated water for WC only.

Note: -

i) The work shall be executed a**s per drawing and directions of Engineer-in-Charge**
ii) **Plinth protection is not part of lump sum tender for Building work.**
iii) **The brackets/clamps for water supply/ sanitary pipes shall be fixed by dash fastener of 50x6 mm size with hole by machine drilling./**
iv) **The proper sleeve shall be left for any water supply/ sanitary pipe crossing the RCC wall of each DU.**

PARTICULAR SPECIFICATIONS FOR MONOLITHIC CONSTRUCTION (SHEAR WALL) TECHNOLOGIES FOR HOUSING

BUILDING WORK:-

In the monolithic concrete technology, walls and slabs are cast in one operation in specially designed light weight form /moulds of aluminum in concrete. Concrete is poured in the forms & forms are removed after the setting of concrete takes place. The pre-designed formwork also acts some sort of assembly line production and enables rapid construction of multiple units of repetitive type. In monolithic concrete construction with aluminium forms system, Concrete walls and slabs are cast monolithic at one pour. The system allows reduction in thickness of concrete members below the minimum value than the conventional of natural resources. The technology reduces the cost of repair and maintenance compared to conventional system.

The panels of aluminium formwork are made from high strength aluminium alloy, with the face or contact surface of the panel, made up of 4mm thick plate, which is welded to a formwork of specially designed extruded sections, to a form a robust component. The panels are held in position by a simple pin and wedge arrangement system that passes through holes in the outside rib of each panel. The panels fit precisely, securely and require no bracing. The walls are held together with high strength wall ties, while the decks are supported by beams and props.

PRE-CONCRETE ACTIVITIES:-

1. RECEIPT OF EQUIPMENT ON SITE:-

Unload components from transport and where possible, stack by code and size. Panels can normally be stacked safely up to 25 panels high on skids or pallets.

When stacked, holing in the formwork should be aligned allowing easy identification by code.

Ensure the first panel at the bottom of the stack has the contact face upwards.

All pins, wedges, wall ties, P.E. sleeves, L.D.P.E. sheet and special tools to be put into proper storage and only distributed as required.

A check requires to be carried out against the packing list ensuring all items stated are received

2. LEVEL SURVEYS:-

A concrete level survey should be taken on all sites and remedial work carried out prior to the erecting of formwork.

All level surveys should be taken from a T.B.M. (Temporary Bench Mark). A record of all surveys should be kept on file by the allocated Supervisor.

In certain cases it is good practice to mark the slabs with paint indicating a plus (+) or minus (-) as the survey is being conducted. This eliminates unnecessary circulation of paper copies to site personnel, and the Supervisor can identify at a glance any remedial work required.

High spots along the wall line to be chipped off to the proper level.

Low spots along the wall line should be packed to the required level, using plywood or timber. Packing the corner and the Centre of the wall length to the required level will normally be adequate, as the formwork when pinned together will bridge across low spots.

Concrete up to (+2mm high) is acceptable, above 2mm must be chipped to the (correct level).

After concreting, level surveys should also be carried out on the top of the kickers. One

reason for structural deviation from the Centre line can be on a - level kicker. This in turn means the formwork is not plumb.

Kickers are manufactured with a 26mm slotted hole on the face to allow for adjustment after concreting.

As with the concrete level survey, proper records of the kicker survey should be kept on file by the allocated Supervisor.

Also a deviation survey requires be carrying out and keeping on file.

PRE-CONCRETE ACTIVITIES:-

3. SETTING OUT:-

Setting out lines should continue through openings, external corners etc., by a minimum of
150mm. This makes it easier to fix the formwork in position prior to concreting.

It is very important that the reference points and the setting out points are protected against accidental movement or damage.

Transferring of reference points from the level below requires to be done quite accurately. Incorrect reference points give incorrect deviations therefore creating unnecessary work for the formwork erection. It is suggested a theodolite be used for transferring the points through openings provided in the slab

4. CONTROL / CORRECTING OF DEVIATIONS:-

A study of the deviation and kicker level survey should confirm what, if any, corrective action is required.

Once the vertical formwork is fixed in position, the external corners should be checked for plumbness. This will determine if further action is required to control the deviation

5. ERECT FORMWORK:-

All formwork begins at a corner and proceeds from there. This is to provide temporary lateral stability. A single panel at a corner will give sufficient lateral support to a very long section of wall. Ensure all edges of the formwork and contact face are properly cleaned and oiled prior to fixing in place.

When satisfied the corner is stable, continue erecting the formwork to one wall. Use only 2 no pins and wedges to connect the formwork at this stage as the pins and wedges will have to be removed later to insert the wall ties. Alternatively the wall ties can be positioned as the formwork is erected. For ease of stripping, pin the wall panels to the internal corners with the head of the pin to the inside of the internal corner if possible.

Wall ties should be coated with the releasing agent provided before being fixed to the formwork. Fit the wall ties through slots in the wall formwork and secure in position with pins and wedges.

Prior to closing the formwork, pre-wrapped corrugated PVC sleeves are placed over the wall ties. Please ensure, since preparation of the sleeves they have not been abused in any way before installing, as this can have an adverse effect on the removal of the wall

tie after concreting. Also, ensure they are located properly to the contact face of the formwork on each side of the wall.

Sleeves installed with one end fixed between the side rails of two adjoining panels, exposes the wall tie at the opposite end, therefore impossible to retrieve the wall tie after concreting.

When deviations of external walls occur, they must be brought back to the correct plan location as quickly as possible. This is done by slightly tilting the external wall forms in

one plane. A re- alignment in two directions should not be attempted on a single lift.

A maximum of 6mm in vertically improvement in one lift is sufficient.

METHOD OF ERECTING FORMWORK:-

It is important maximum efficiency to define a sequence of erection to be followed by each team. One side is erected using only on upper and lower pin and wedge connection. Later, ties are inserted at the other connections and fixed with pin and wedge. Then the previously installed pins is removed and those ties inserted and pinned. Subsequently, panels for the other side are inserted between the existing ties and fixed with pins and wedges.

Special care must be taken at the lift shafts. The interior panels will align properly on their own because they are set on the kicker from the formwork below. Ensure the kickers are level and will not affect the verticality of the lift shaft. However, the matching panels are set on the concrete that may not be level. If the concrete is too high in place, it can distort the alignment of the four sides of the lift shaft and must be broken out to allow a level base.

Care must be taken so that the concrete and in particular the reinforcement does not become contaminated due to excessive or negligent application of the releasing agent.

The ends of walls and door openings should be secured in position by nailing timber stays to the concrete slab. Walls require to be straightened by using a string line and securing in place by nailing timber stays to the concrete slab. During this operation verticality of door openings also requires to be checked for plumb.

6. ERECT DECK FORMWORK:-

Before fixing in position the soffit lengths (SL) and soffit corners (SC) should be coated on the contact face plus the top and bottom rails with a release agent.

When connecting the soffit lengths and soffit corners to the vertical formwork, the pins should be inserted from the top prevent the possibility of the pin falling out during concreting. After fixing of the soffit lengths the deck panels can be pinned at the corners again ensuring oil has been applied to the edges only.

In most cases the deck beams to support the deck formwork, can be assembled on the concrete slab. Lay the beam components on the floor as per the deck layout drawing.
Components are held together by pinning BB 350 through two adjoining beams with a D.P. 200 (Deck Prop) located between using the 132mm pin.

Fit the prop lengths to the preassembled beam with the shoe of the prop facing in the direction of the beam. This protects the bottom of the prop length when striking the prop.

Using the prop lengths lift the beam into position. The beam is held in place by inserting a pin from the beam, through the end of the deck panel already fixed to the corner.

Ensure side rails of the Deck beam has been oiled prior to fixing.

The first panel in a row has to be pinned to the soffit length and the deck beam. The second panel should be pinned to the first deck panel only, (two pins are normally enough).

Ensuring the second panel is not fixed to the deck beam will leave sufficient movement in the beam to place the third panel of that row. Fix the third panel to the second panel, and then pin the second panel to the deck beam. Place the remaining panels in the row using the same method.
A numbers of rows can be fixed simultaneously. The face of the deck panels on completion can be oiled prior to the placing of the slab reinforcement.

On the completion of fitting the deck panels a survey team is required to check the level of all soffit formwork and adjust accordingly if required, by shimming the bottom of the PL's.

7. SETTING KICKERS:-

Where there is a continuous vertical wall, e.g. lift shaft, external face of the building etc., a kicker forms the perimeter of the slab and also acts as the connecting component for the vertical formwork on the next level.

After casting of the first level of formwork, two levels of kicker are required, one coming off the previous floor to which the formwork is fixed and the other fixed to the top of the wall formwork which forms the perimeter of the slab.
This kicker remains in place after concreting and is used to start the wall form on the next level.

Connecting Kickers To Wall Panels

Ensure kickers are properly cleaned and oiled prior to fixing in position. To prevent the pin being dislodged during concreting, pins should be inserted in a downward direction through the bottom rail of the kicker and top rail of the wall panel.

Kickers are manufactured with a 26mm x 16.5m vertical slotted hole. Prior to concreting, a 16mm dia M.S bolt is fixed to the kicker, located tight to the bottom of the slot. This bolt remains fixed to the casted concrete with a flat washer and nut to act as anchor.
After concreting the slotted hole allows for an adjustment if required for improvement on the level of the kicker which also controls the verticality of the formwork.

Aligning Kickers

Kickers should be checked for alignment using a string line : A straight kicker will ensure the wall on the next level is also straight.

The method used to align kickers.

Steel vertical soldiers fixed in place using a tie-rod, through the cast in PVC sleeve,

which will be used later for the fixing of the wall mounted scaffold brackets.

Where the end of two kickers meat, a B.K.S. (strap across the top of the kickers) should be used, keeping the two adjoining components flush.

8. STAND BY DURING CONCRETING:-

At least two operatives should be on standby during concreting, to cover both sides of the wall being casted. During concreting, the ideal position is slightly in front of the pour, checking pins, wedges and wall ties as the pour is in progress.

Pins, wedges or wall ties missing could lead to a movement on the formwork and the possibility of the formwork being damaged. This effected area will then require remedial work after striking of the formwork.

Things to look for during concreting:-

(a) Dislodging of Pins/Wedges due to vibration.
(b) Beam/Deck props adjacent to drop areas slipping due to vibration.
(c) Ensure all bracing at special areas stays intact.
(d) Overspill of concrete at window openings etc.

Operatives on standby should have the following equipment (at hand):-

(a) Pins and Wedges
(b) Adjustable props
(c) Masonary nails
(d) Joinery saw and hammers
(e) A few lengths of timber for additional bracing, (if required).

9. STRIKE WALL FORMWORK:-

Normally wall formwork can be struck after 12 hours. Striking times are confirmed on a project to project basis.

Before striking wall formwork ensure the following are removed:-

(a) All timber stays nailed to the concrete slab.
(b) Walers (if any).
(c) Vertical soldiers.
(d) All pins and wedges from the panels identified for striking.
(e) Care must be taken when removing pins and wedges on the external and void areas, especially on the safety issue. Also considerable amount of pins and wedges can be lost over a short period of time due to inadequate care taken when removing.

Ensure commencement of work on the thickest walls first therefore enabling commencement of extracting the wall ties as soon as possible. The wall ties can be removed before the removal of the formwork. The sooner they are extracted from the wall, less force required and less time consuming.

External walls are also critical to enable the progress of installing the scaffold bracket for placing of the formwork on the next level. While removal of the wall ties is in progress ensure they are kept neatly in an appropriate area where they can be prepared for the next level.

As soon as the removal of ties is progressing then striking of the formwork can commence.

All components must be cleaned as soon as they are removed. The longer the cleaning process is delayed, the more difficult it will be. Wall panels are designed to be struck by

pulling the top of the panel away from the concrete where a rocker is fitted.

The rocker at the bottom of a panel enables the panel to pivot about a point against the concrete slab. Where the wall formwork is pinned to a kicker, the panels are removed by pulling the bottom away first.

The first panel in a row is the most difficult to remove as it is also held by the adjacent panels. If properly cleaned and oiled prior to concreting and using the panel pullers provided, the panels will come away with ease.
The remainder of the wall panels on this wall will strike easily by breaking the bond to the adjacent panel using the panel puller as mentioned above.

To strike internal corners the wall ties are removed first as the wall ties prevent the removal of the internal corner.

As the wall panels are being removed, removal of the sleeves can commence. The same situation applies to the sleeves as to removal of the wall ties, the sooner they are extracted from the wall the less time consumed. Also less damage will occur therefore maximum uses can be achieved per sleeve.

Sleeves are removed by using long nose pinch pliers. Ensure the sleeves are being stored in a proper container when removed and returned to the preparation location as they can be prepared for the next use.

When moving the formwork to the next area, proper stacking of panels is a clear sign of a well-run operation. Stacking at the right place and in the right order greatly benefits the following erection work, and prevents clutter that impedes all activities.

Striking of the external walls also requires urgent attention to enable the installation of the working platform bracket.

STRIKE DECK FORMWORK:-

Normally deck panels can be struck after 36 hours.
The striking begins with the removal of deck beam. Remove the 132mm pin and the beam bars from the beam which has been identified for removal.
This is followed by removing the pins and wedges from the deck panels adjacent to the deck beam to be removed.
The Deck beam can now be taken out.

As the first panel in a row rests on the support lip of the soffit length, the adjacent panel should be removed first. After removing the pins and wedges from the panel to be removed, a panel puller can be used to break the bond from the adjacent formwork.

Pins and wedges only to be removed on the identified component that is to be struck.
Deck panels remain in place longer than wall panels and will not come away easily unless proper cleaning and oiling is done during the erection process. Panels should be cleaned immediately after striking.

Consequently the sequence of striking should confirm to the sequence of erection.

PROP LENGTHS:-

Whenever the PL's is to be removed, use a wooden mallet to strike the bottom of the PL in the same direction as the beam and holding the PL with your other hand.

10. CLEAN, TRANSPORT AND STACK FORMWORK:-

Cleaning:-

a) All components should be cleaned with scrapers and wire brushes as soon as they are struck. Wire brush is to be used on side rails only.
b) The longer cleaning is delayed, the more difficult the task will be.
c) It is usually best to clean panels in the area where they are struck.

Transporting

There are 3 basic methods recommended when transporting to the next floor level:-

(a) The heaviest and longest which is full height wall panels can be carried up the nearest stairway.
(b) Passed up through void areas.
(c) Raised through slots specially formed in the floor slab for this purpose. Once they have served their purpose they are closed by casting in concrete filler.

Striking

Once cleaned and transported to the next point of erection, panels should be stacked at the right place and in the right order.
Proper stacking is a clear sign of a well-managed operation and greatly aids the next sequence of erection as well as preventing clutter and impeding other activities.

11. STRIKE KICKER FORMWORK:-

Only the kicker pinned to the bottom of the wall panels should be struck. The top kicker will be used for starting the wall formwork on the next floor level.

Once the wall panels are removed, disconnect the lower kicker, remove the cast in bolt.

This leaves the kicker free to be taken off and prepared of reuses. i.e. cleaned and oiled.

Ensure the cast in bolts are also cleaned by wire brush after each use.

Each level of kicker will "leap-frog" up the building.

12. STRIKE WALL - MOUNTED WORKING PLATFORM:-

The lower level of scaffold must be struck on the day of casting the floor above, and prepare for fixing the following day.

Safety should be the priority in everyone's mind during this operation first principle is to ensure the working platform is free from any debris.

One member of the team should be on the working level above to receive the material from the level below. Another team member should be on the lower level and it is **COMPULSORY** that this person wears an approved **Safety Harness and Fall Arrest Block.**

The Fall Arrest Block is attached to the bracket above, using a quick release shackle. The fall Arrest Block will be moved to its next fixing point by the helper on the level above.

Remove the toe-board and decking, passing them to the helper above. This is followed by the removal of the handrail.

The scaffold's must ensure that no part or parts are left partially removed, as this will endanger themselves and their fellow workers.

Another section of the team will follow behind to remove the scaffold brackets and the same crew will be responsible for fitting the scaffold bracket on the next level.

As there are two complete levels of scaffold brackets, one team member will be on the upper level and another inside the building on the level below.
The worker on the upper level will require a rope attached to a S type steel hook which he will hook to the scaffold bracket below.

The worker inside the building will then commence to unscrew and remove the tie nut, thus releasing the scaffold bracket, and allowing the worker holding the rope on the upper level, to gently raise the rope while the tie rod is being gently knocked through from the inside, until the bracket is completely free from the building. At this stage, the safety bracket is pulled to the next level in preparation for fixing to the level above.

13. ERECT WALL MOUNTED WORKING PLATFORM:-

Before commencing the operation, ensure the following equipment has been procured :-

(a) Scaffold brackets and all the necessary fixings.
(b) Scaffold bracket, vertical safety post.
(c) Safety harness and fall arrest block.
(d) Timber and all materials for the platform decking and handrails.

For the initial set up of the formwork and when using the wall mounted scaffold brackets, 20mm diameter holes require to be drilled through the formwork to position the PVC sleeves, which when cast in the concrete, should be used for fixing the scaffold brackets. This hole also accommodates the bolting up of the formwork to control the alignment at the kicker level.

As the external formwork is being removed, a team of allocated people working in pairs will commence erecting the working platform. With the tie-rod through the hole provided in the working platform bracket, and using a small ladder, fix the bracket by pushing the tie rod through the PVC sleeve which is cast in the concrete. A helper inside the building can fix and tighten the locking nut.

During this operation, the person on the external must have his safety belt secured to the kicker above. As this operation progresses along the building, another pair of the team should follow, placing the decking, toe-board and hand rails. One person should remain on the lower platform and pass the decking to his helper on the upper level.
When working on the outside edge, safety equipment **MUST** be worn at all times.

SITE INFORMATION

1. GENERAL

These additional specifications shall be applicable to the Construction of Building works as well as for electrical works and Infrastructure Development Works. These specifications shall be read in conjunction with other parts of the Bid Documents including but not limited to Conditions of the Contract, Clauses of Contract. General Specifications and Special Conditions, Bill of Quantities and Drawings.

SITE INFORMATION

The site of work is situated at Tikri Kalan of Delhi (West) on National Highway 10.
The information's given hereunder and provided elsewhere in these documents is given in good faith by DSIIDC but the Bidder shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by DSIIDC is erroneous or insufficient.

GENERAL CLIMATIC CONDITIONS

a) The variation in daily temperature in this region is as under:

i) During summer months, from about 24°C minimum to 46°C maximum.
ii) During winter months, from about 3℃ minimum to 20℃ maximum.

b) The average annual rainfall in the area is 620 mm, a good portion of which is concentrated during the months of July to September each year.
c) The range of relative humidity varies from a minimum of 60% to a maximum of 90%.

d) Seismic Zone

The Site is located in Seismic Zone IV as defined in National Building Code.

GEOTECHNICAL DATA:-

a) The main road level and Natural Ground Level (NGL) have been marked on drawing. The main road level has been taken as bench mark (i.e. ± 0).
b) The plinth level of Building shall be + 750 mm from main road level.
c) The average NGL is about (–) 350 mm, from the Road level (± 0). Formation level is (+) 300mm. The schedule of quantities mentioned as guidelines only are based on the averages of existing Levels of site.
d) The Bidder shall get the soil investigation done for ensuring the correctness at his own cost. The above are general information of project site for information of the prospective Bidders. However, the Bidders should ensure the correctness of the statement. Nothing extra shall be paid on account of any discrepancy pointed out by the Bidders at later stage during the execution. Min. Sixty Five bores of fifteen meter depth is to be done for ensuring safe bearing capacity of soil.
e) The structure has been design for SBC of 13T/m2 at 1.50 met. depth from NGL

SPECIAL CONDITIONS

All works included anywhere in the Bid Documents will be carried out by the Bidder. The Scope of work under this contract will include, but will not be limited to the following:

1. The Bidder shall quote lump sum rates for building works (Civil & Electrical Part-B &Part C) for each dwelling units and for development works (Part-D) the percentage rates (upto 2 decimal) shall be quoted.

   i) The rates of all items or lump sum rates of work shall, unless clearly specified otherwise, include cost of all labour, material, tools, plants and other inputs involved in the execution of the items. The Bidder shall be responsible for executing all the items required for completing the project of houses in all respect to make dwelling units habitable and ready for occupation.

   ii) The quantities mentioned in the Bid under the head of Building work are indicative only and the rates are to be quoted per dwelling unit on Lump sum basis. All the quantities mentioned for external development works in the schedule of quantities are approximate and can deviate as per conditions of contract.

   iii) The lump sum price quoted by the Bidder shall also include for any minor details of works and/ or constructional details which are obviously and fairly intended and which may not have been specifically referred to in the Bid document and are essential for the execution and completion of the work in an workman like manner and sound construction.

   iv) Although the location of blocks have been shown in the layout plan. There may be readjustment of the layout of blocks/clusters due to site conditions or otherwise. No claim for any such alteration shall be allowed.

2. The agency may be asked to construct a sample dwelling unit in all respect on priority basis by the Engineer-in-Charge (i.e. including all fittings and fixtures)
3. The agency shall arrange complete layout including setting up benchmark at site as specified in CPWD specifications 2009 Vol I, taking and fixing levels for all works required to be executed under the project. The levels will have to be got authenticated from Engineer-in-charge or his authorized representative. All instruments and manpower required for accurate layout of works and levelling shall be arranged by the Bidder at his own cost at site. Execution of works initially and in subsequent layers shall start only after the layout and levels taken by the Bidder are approved by the Engineer-in-charge.
4. The agency shall setup complete field testing laboratory to comply the provisions of CPWD specifications & relevant BIS code. The lab shall be manned by trained technical person with all the functional and calibrated instruments to perform the various tests as specified in NIT for achieving desired quality of work. The calibration shall be accepted by the NABL accredited organisation & as per direction of Engineer in charge.
5. i) The list of equipment's of laboratory shall be as prescribed as mentioned in CPWD specification under each sub head of work. The list of outside approved labs for material testing is as per enclosed list. The testing shall be done as per procedures/method laid down in CPWD specification & relevant BIS codes. All testing charges shall be borne by the Bidder including all necessary assistance to collect the samples with packing & transportation. Department will not pay any amount on account of testing & related operations required. All samples of the materials including Cement Concrete Cubes shall be taken by Bidder in presence of J.E. /SPM(C) concerned.

   ii) all the registers of tests carried out at construction site or in outside laboratory should be maintain by the Bidder as per format prescribed in CPWD specification/BIS codes, which shall be issued to the Bidder by the Engineer-in-Charge. The Bidder shall be responsible for safe custody of test registers & samples to be tested at site.

6. The agency shall have to construct site office consisting of four rooms & one toilet having total area not less than 100 sqm for DSIIDC staff. The location plan & specification for site office shall be got approved from Engineer –In-Charge. In addition a conference room shall also be constructed for a sitting capacity of 30 persons. Noting extra shall be paid on his account. The maintenance of site office & conference hall shall be responsibility of the agency.

   The agency will have to provide the following new furniture of reputed brand for use of DSIIDC staff at site office:-

   For CPM Office :-

Executive Chair	-	01 Nos.
Executive Table – 2.50x1.20 m	-	01 Nos.
Visitors Chair	-	06 Nos.
Big Steel Almirah	-	01 Nos.

   Computer of latest configuration with, internet facility & landline telephone, Colour monitor with laser printer, Scanner and fax as approved by the Engineer-In-Charge. The agency shall also provide a trained computer operator on regular basis.

   For Sr. P.M. office / J.E.'s & other project staff office :-

Executive Chair	-	04 Nos.
Visitor chair	-	12 Nos.
Tables – 04 Nos.	-	
Steel Almirah Big	-	04 Nos.
Steel Almirah Small	-	04 Nos.
Steel rack five tier	-	04 Nos.
Steel Bench	-	01 Nos.

   In summer season AC of 1.5 tonne capacity shall be provided in running condition in each room & one water cooler with Mineral Water dispenser of sufficient capacity in Camp office.

7. One inspection vehicle model not less than 2012 and of capacity of engine not less than 1390cc & another inspection Vehicle not less than 2500 cc, having functional Air Condition with driver having valid Driving Licence will be provided by the Bidder on the sole disposal of DSIIDC, free of cost including running cost of fuel and maintenance of vehicle. The vehicle shall be provided from the date of letter of commencement to date of completion including extended period.
8. Taking all safety measures to safe guard against any accident for Bidder's employees, labour, general Public and supervisory staff of by providing all necessary equipment's, helmets etc. at work site. The safety manual of DSIIDC and circulars issued time to time in this regard shall also have to be followed for execution of the works. The Bidder shall take all precautions by exhibiting necessary caution boards, red flags, red lights, and barriers to avoid any accident during execution of work. The Bidder shall be responsible for all damages and accidents due to negligence on his part. The Bidder shall be fully responsible for barricading of the trenches, putting of sign boards with

fluorescent paint lettering for day and red fluorescent flickering lights and caution boards and red lamp for the night and for employing chowkidar as well as for taking any other precautions as per traffic police authority for safety of the public and workman. If any penalty for violating the rules is imposed by any department/authority, the Bidder shall have to bear this at his cost. The agency will carry out regular maintenance checks of all electrical and mechanical equipment every month. The agency shall employ skilled persons having valid license for operating the Earth moving equipment's/machine.

The agency shall depute Safety officer to monitor the all safety aspects and to ensure prescribed safety provisions of CPWD & DSIIDC safety code at site.

9. Whenever any reference to any Indian standard specifications occurs in the document relating to this contract the same shall be inclusive of all the amendments issued there to or revisions thereof, if, any up to the date of receipt of Bids.
10. The Bidder shall be deemed to have fully acquainted himself with the nature and extent of the work and working conditions at site before submitting the Bid. The work shall be executed as per programme in the form of CPM/PERT Net Work Chart to be submitted by Bidder indicating all activities & events for timely completion of the project including Human Resources/material & cash flow management & approved by Engineer-in-charge. If the materials, drawings, designs, etc. are not available due to any conditions the programme of Bidders shall be modified accordingly and no compensation / damages shall be payable.

    Progress Monitoring: - Bidder shall submit monthly progress report indicating the financial as well as physical progress of the work till the works are completed. The work will be executed as per computer based PERT chart, to be submitted by Bidder duly signed along with Bids. The Bidder will be responsible for completion of job as per computer based PERT chart in line with the mile stones mentioned in the Bid document.
11. No payment will be made to the Bidder for damages caused by rains or other natural calamities or riots during execution of the work and no claims on this account will be entertained.
12. The Bidder shall make all efforts to mechanize the construction work to the maximum possible extent by using the latest T&P / machinery and equipment.
13.
    i) The time of completion shall be the essence of the contract and will be strictly adhered to by the Bidder. He shall provide a computer based PERT/CPM chart showing all the activities and events for timely completion of the project including Human Resource Management & Material Management etc.

    ii) The Bidder shall ensure stage wise completion of the dwelling units i.e. Block wise schedule of completion shall be given before start of work and shall hand over the units block wise.

    iii) Handing over of DU's: - The Bidder shall handover the DU's block wise as per the programme of handing over given by the Bidder and accepted by the Engineer-in-Charge.

14. The various items of the work shall be taken up simultaneously wherever possible to speed up the work. Nothing extra shall be paid on this account.
15. The Bidder shall make arrangement for sufficient quantity of all the

materials required for construction work conforming to required / related specifications for which the prior approval of the source /make from the Engineer-in-charge is required.

16. The Bidder will coordinate and cooperate with other Bidders working in the area.

17. It will be duty of the Bidder to bring to the notice of the Engineer-in-charge about discrepancies/variations in the drawings given to him and actual site conditions. The Bidder will incorporate such modifications in the drawings as suggested by the Engineer-in-charge and submit the same for approval of the Engineer-in-charge. The work will be carried out based on such revised approved drawings. The revised approved drawings will be deemed to be part of the Contract and nothing extra shall be paid on this account.

18. The Engineer-in-Charge will have the liberty to change location, size and other parameters if so considered necessary as per site conditions or based on technical considerations. Any such additions, deletions or substitution by the Engineer-in-charge communicated to the Bidder will form part of the contract.

19. The Bidder shall arrange water fit for construction work as prescribed in CPWD specification/ relevant BIS code at his own cost. The Bidder has to produce the test certificate for the suitability of water for above uses from the approved laboratories. The water shall be tested quarterly or as directed by Engineer-in-Charge. No payment shall be made for any treatment required to make the water suitable for construction suggested by the approved lab./expert agency.

20. The batch mixing plant to produce RMC plant set up at the land allotted by DSIIDC shall exclusively used for this project only. Any spare capacity of these plants cannot be used to produce the RMC for any other sites. For producing RMC, batch mixing plant shall be setup at site allotted by DSIIDC shall be free of cost

21. Condition for RCC and design mix work:-

21.1 (a) The Bidder can install his own batch mix plant or arrange Ready Mix Concrete (RMC) from the approved manufactures approved by Engineer-in-charge as per the requirement of concrete per day for pre casting and other RCC works .

(b) The cement concrete mix design shall be got done by the Bidder through approved organization / testing labs. The necessary charges of material, transportation and fees of design mix shall be borne by the Bidder.

(c) The maximum water cement ratio and minimum cement content of various Grade concrete mix shall be as under

Grade of Concrete (Design Mix).	Maximum W/C Ratio	Minimum Cement Content (in Kg.)
M-25	0.50	Minimum cement contents shall be 330 Kg./Cum.

The workability of concrete shall be as per CPWD specifications for all grade of concrete.

(d) Approved plasticizers/Super plasticizers / Admixtures(Polycarboxil Ether) can be used for improving workability, shall be permitted in accordance with IS456 & IS9103 and their performance shall be monitored as per CPWD Specifications/ IS456-2000

(e) No extra payment shall be paid for using transit mixer to move the concrete from batch mixing plant to various points of site including plasticizers/ Admixtures required.

(f) At least two fully computerized/ automatic batching plant of sufficient capacity shall be installed by the Bidder at site for production of design mix concrete.

(g) The mixing of Cement Concrete, transportation & placing shall be strictly as per CPWD specification. The concrete mix shall not be handled twice at the site of

work. Either concrete shall be pumped or sent through chute. For placement of concrete at various levels, Tower Crane of appropriate size/ capacity or concrete pump shall necessarily be deployed by the Bidder. However, mechanical hoist can be used by the Bidder for other material.

(h) Nothing extra shall be payable to Bidder if cement used in design mix is more than 330 Kg/cum. Minus deviation in cement content shall not be permissible.

(i) Design mix concrete shall be used in the work for all structural members. The design mix concrete shall be as per CPWD Specification 2009.

(j) The concrete surface at each joint of formwork shall be grinded properly to achieve kink free surface without any extra payment.

21.2 RMC (BIDDER AT HIS DISCRETION MAY USE RMC) IN CASE HE CHOOSES RMC FOLLOWING CONDITIONS WILL APPLY:-

(i) Ready mix concrete as per approved design mix from the agencies shall be arranged by the Bidder from ACC, UltraTech, Birla Vikram, and L&T plant or as approved by Director (Works). RMC producing plant should be within 50km distance from the work site and no extra payment will be made on account of lead involved. The rates are inclusive of all leads/lifts at site.

(ii)For procurement of ready mix concrete from RMC Plants, the Bidder shall, within 15 days of award of the work, submit a list of at least three RMC Plant Companies of repute along with details of such plants, including details of transit mixer & pumps etc. to be deployed indicating name of owner / company, its location, capacity, technical establishment, past experience and text of MOU proposed to be entered between purchaser (the Bidder) and supplier (RMC Plants) to the Engineer-in-charge who shall give approval in writing (subject of drawl of MOU). The Bidder shall draw the MOU with approved RMC Plant Owner / Company and submit to Engineer-in-charge within a week of such approval. The Bidder will not be allowed to purchase ready mixed concrete without completion of above stated formalities for use in this project.

(iii) The concrete mix design with or without admixture will be carried out by the Bidder through one of the following laboratory/test house and no payment will be made to the Bidder on account of fee to be paid to the agencies.

a) IIT Delhi
b) National Council of Cement and Building Materials Ballabhgarh.
c) CRRI Delhi
d) Delhi Technological University, Delhi

(iv) In the event of all the four laboratories mentioned above being unable to carry out the requisite design/testing the Bidder shall have to get the same done from any other laboratory with prior approval of the competent authority.

(v) Notwithstanding the approval granted by Engineer-in-charge in aforesaid manner, the Bidder shall be fully responsible for quality of concrete including input concrete, transportation and placement etc.

(vi) The Engineer-in-charge will reserve right to inspect any such stage, and reject the concrete if he is not satisfied about quality of product. The Bidder should therefore, draw MOU / Agreement with RMC Owner / Company very carefully keeping all terms and conditions / specifications forming a part of this Bid document.

(vii) Computerised production slip with other relevant records of RMC shall be made available to the Engineer-in-charge or his authorised representative. Engineer-in-charge shall, as required, specify guidelines and additional procedure for quality control and other parameters in respect of material and production and transportation of concrete mix, which shall be binding on the Bidder and the RMC Plant.

(viii) OPC43 grade (Conforming to IS-8112) of brand / make / source as approved by Engineer-in- charge shall only be used for production of concrete.

22. The date of casting of concrete invariably be mentioned at prominent locations of Concrete Casted each day by the enamel paint.

23. The Bidder will be responsible for obtaining "Bidder All Risk Policy" towards entire cost of the work and will obtain workmen compensation policy at his own cost. The policy should cover entire tenure of contract inclusive of extended period, if any.

24. (a) The work is being executed as part of GOI scheme of BSUP under JNNURM. As mentioned in the scheme the work shall be inspected by

(i) TPIM agency appointed by GNCTD.

(ii) TPIM agency appointed by GOI.

(b) The work will also be periodically inspected by M/s Shri Ram Institute for Industrial Research or any other TPIM agency appointed by DSIIDC to carry out the work of inspection in its behalf.

25. The work may be inspected by any external agency like Central Vigilance Commission. Any deductions/compensation proposed by TPIM/TPQC/CVC/QMS or any agency approved by DSIIDC in regard to defective work or work not confirming to specification, loss of time, amount shall be deducted from their bills or by sale of their properties at site.

26. The department will be responsible only to the Bidder and his authorized representative and none else, with whom Bidder may be in liaison or associated in any manner. the agency shall intimate the details of authorised representative with notarised signature immediately after the acceptance of work . The agency shall also submit employed man power statement indicating the name of the staff with designation and functional Mobile number.

27. Any excavated material of the site shall not be disposed of prior to the written permission of the Engineer-in-Charge. The material should be disposed at the place authorized by Engineer-in-Charge. No extra shall be payable on this account.

28. **Running Account Bill:-**

Generally the payment will be made only when the gross amount of work done since previous bill is more than Rs. 8 Crores. However, in special case the Engineer-in-charge can release the payment for the value of the work done since previous bill is less than Rs. 8 Crores.

29**.Payment:-**

Low cost Housing Project under JNNURM Scheme is funded by Government of India & Delhi State. There may be delay in making regular payment and therefore the Bidder has to make financial resources to sustain the contract cash flow for at least three months at the peak of construction during execution of the work. Corporation will make all efforts to release the payments as per Clause 7 of G.C.C. However, claim of interest shall not be entertained for delay in payment.

30. All arrangement for required power, electricity & water (i/c potable) is to be done by Bidder. The payment for electric connection and consumption is to be borne by the Bidder.

The Bidder shall also make necessary arrangements at his own cost diesel generator sets of sufficient capacity and complying the norms of pollution control authority for the work, so that the same can be used by him during failure/non-

availability of electricity. Necessary permission etc. if required shall be taken by him form the concerned authorities.

31. The Bidder shall assist for connections of vertical stacks of water pipe lines with the water pipe lines laid in external areas of different blocks. Similarly the arrangement of sewer connection with Manholes and external municipal sewer shall be done. Nothing extra shall be paid on this account.
32. The Bidder shall construct the labour hutments in a systematic way. Complete plan shall be submitted by him showing the details like disposal of solid waste, sewerage and water supply facilities. The hutments shall be removed immediately after the completion of work. There should be no encroachments on the berms and carriage way of the roads.
33. No T&P / materials shall be stacked on the adjoining roads. The Bidder, at his own cost, shall cordon off the site of work from adjoining areas so as to avoid spreading/spillage of the construction material/dust/dirt in the adjoining area. No obstruction shall be caused to the pedestrian/vehicular traffic, during the execution of work.
34. 1% of the amount of Running & final bills of the Bidder shall be deducted from each bill on account of Labour Welfare Cess to be deposited with the Govt. as per "Building & other Construction Workers Welfare Cess Act-1996" and to be got registered with labour department of Delhi Government.
35. The site is although a barren land, with some vegetation for which no extra payment shall be made for any clearance of vegetation/wild growth. No trees shall be uprooted without the permission of the engineer-in-charge.
36. The costly parts such as brass spindles etc. shall be removed by the Bidder from the valves and kept in his safe custody and re-fixed before handing over the line to the department. No payment for removing and re fixing of the spindles will be entertained.
37. a) If certain details are missing and the details indicated elsewhere in the drawings which are similar or nearby to the missed out items of works shall be executed without any extra cost. In the absence of any other similar and nearby details, the minimum essential requirement for the completion of work from the structural and utility point of view shall be deemed to be included in the quoted lump sum price.

    b) In case of difference of opinion between the Bidder and the DSIIDC as to whether or not a certain item of work is minor, extra or constructional details include in the lump sum amount quoted or not, the decision of the Chief Engineer shall be final, conclusive and binding on the Bidder.

    c) In case of any missing dimension, the Engineer-in-Charge shall decide the same considering the intent of the detail/drawing. In case of any difference between dimensions arrived by adding the details and over all dimension, overall dimension shall be followed. The lump sum amount quoted shall include such eventualities.
38. The lump sum price quoted by the Bidder shall also include for painting & writing of BLOCK / FLAT number with black paint of 15 mm size over circular plastered surface of size 300mm dia for BLOCK No. and 250 mm dia for FLAT No. on plastered surface as per direction of Engineer-in-charge. The Bidder shall also provide necessary locks of sufficient size to lock each DU.s.
39. The Bidder (s)/ Bidder (s) will not, directly or through any other person or firm, offer, promise of give to any of the Principle's employees in the Bid process or the execution of the Bidder or to any third person, any material of other benefit which he/she is not legally entitled to, in order to obtained in exchange any advantage of any kind whatsoever during the Bid process or during the execution of the contract.
40. The agency shall engrave one logo of JNNURM in size & pattern at every one meter height in cement plaster 1:4(1 cement:4 fine sand) on each block of houses as per

design given by Engineer – in- charge. Nothing extra shall be paid on this account.

41. Any discrepancies and omissions can be sorted out through mutual consultation as far as possible but decision of Engineer-in-Charge shall be final and binding to on all such items.

42. The material brought at site to be used in the work like Cement, TMT steel bars, and bitumen, etc. will be kept in joint custody of department and the Bidder. The record of its consumption would be signed by the Bidder and the Junior Engineer or any other official of DSIIDC and Bidder shall maintain & preserve these records.

43. SFRC/Pre cast RCC Covers for manholes/Gully trap, shall be provided with engraving year of manufacture and along with logo of DSIIDC

44. The Bidder shall employ licensed plumber for water supply and sewerage work.

45. The Bidder shall be responsible for all protection of sanitary, water supply, electrical fittings & fixture against pilferage breakage during period of installation until the completion of work and handed over to the DSIIDC.

46. For the **"Building Works"** schedule of quantities are appended with the Bid document which are for the guidance only. Quantity shall be executed as per drawings good for construction approved by the technical sanctioning authority.

47. The contract shall include free maintenance of the dwelling units in terms of leakages, cracks, sapling etc. for a period of 12 Months after the date of completion of the project.

48. Service tax is not applicable on these housing projects under JNNURM schemes as per notification No. 28/2010 service tax date 22nd June 2010 circulated by Ministry of Finance, GOI.

49. Bidder will submit a Guarantee on non-judicial stamp paper of Rs. 100/- in the form (as per Annexure-C attached) against guarantee for water proofing of the portions of the structure including terraces or wherever water proofing treatment has been provided by the Bidder for a period of five years after the completion of the project.

50. Permission from the administrative authorities for carriage of earth from any DSIIDC site or any designated place to Tikri Kalan site or vice versa, shall be obtained by the agencies. Nothing extra on this account shall be paid.

51. The Bidder shall make all efforts to mechanize the construction work to maximum possible extent by using T & P/ machines and equipment etc. he shall use steel scaffolding & shuttering, whenever it is not possible the other type of shuttering used shall be proper size & shape, similarly scaffolding other than steel shall be as per site requirement & prior approval of Engineer-in-charge shall have to be obtained in writing.

52. Various items of the work shall taken up simultaneously wherever possible to speed upto the work nothing extra shall be on this account.

53. The Bidder should makes necessary arrangement for round the clock working including working an holidays, Sundays accept national holidays the planning should be done accordingly & shall make arrangement for sufficient quantity of all the material required for construction of work conforming to required and related specification.

54. The Bidder shall comply with proper and legal orders & directions of the local or public authority or municipal etc. and abide by their rules & regulations and pay all fees & charges which may be liable at his own cost.

55. The Bidder shall give a satisfactory performance test of installation individually and as a whole to ensure their proper functioning before the work in finally declared of completed and accepted. No extra payment shall be made to carry out such tests

56. Any structural detailing requirements even if not shown in drawings shall be provided by the executing agency for which nothing extra shall be paid.

57. The water table as per soil report is approximately 6.00 metre below NGL. The water table is likely to rise during rainy season but nothing extra shall be paid for the work under subsoil water. Nothing extra will be payable on account of bailing out of subsoil water, if emerges during excavation.

58. Recording of hindrance in the hindrance register on part of Bidder – It is mandatory on part of Bidder to record the hindrance in the hindrance register & it is to be produced in division office at the time of running account bill.

59. Site Test Registers & MAS Registers as per Format of CPWD to be maintained by Bidder. All test registers and material at site registers on specified formats shall be maintained by the Bidder which shall be reviewed by the officers of DSIIDC at regular intervals.

60. The Bidder is liable for registration of the construction workers under Delhi Building and other construction workers (Regulation of Employment and Conditions of Service) Act, 1996 and the rules framed there under with the Delhi Building and other Construction Worker Welfare Board.

61. The agency shall arrange at least two sets of self-speaking photographs of appropriate size covering the progress of the work at each stage as per direction of Engineer-In-Charge without any payment.

62. Necessary non asbestos fibre cement board of size (200 mm wide x 6 mm thick) with providing & fixing 12 mm thick bitumen impregnated fibre board upto 150 mm depth between gap of joints including proper treatment of horizontal joints without any extra payments. No deductions shall be made for exterior paint on common walls.

63. The agency shall have to erect a steel frame sign board at site of appropriate size mentioning the details of Project as per the direction of Engineer-In-Charge.

64. The Bidder shall submit a copy of challan & invoice with details of vehicle for each delivery of Steel & Cement lot at site.

65. The Bidder shall dispose of all rubbish /building mulba from the site to the approved municipal dumping ground or any designated palace in irrespective of all lead and lift as per direction of Engineer-In-Charge without any payment.

66. The agency shall have to provide cement slurry coating on the reinforcement bars as soon as they are brought at site & shall be stacked on bricks/ timber platform above the GL.

SPECIAL CONDITION FOR CEMENT

1. The Bidder shall procure 43 grade (conforming to IS 8112) ordinary Portland cement, as required in the work, from reputed manufacturers of cement having a production capacity not less than one million tonnes or more per annum, such as ACC, UltraTech, J.P.Rewa, Vikram, Shri Cement, Birla Jute & Cement Corporation of India etc., as approved by the Ministry of Industry, Government of India, and holding license to use ISI certification mark for their product. The Bidders may also submit a list of names of cement manufacturers which they propose to use in the work. The Bid accepting authority reserves right to accept or reject name(s) of cement manufacturer(s) which the Bidder proposes to use in the work. No change in the tendered rates will be accepted if the Bid accepting authority does not accept the list of cement manufacturers, given by the Bidder, fully or partially.

   The supply of cement shall be taken in 50 kg. bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the Bidder shall be taken by the Engineer-in-charge and got tested in accordance with provisions of relevant BIS codes. In case the test results indicate that the cement arranged by the Bidder does not conform to the relevant BIS codes, the same shall stand rejected, and it shall be removed from the site by the Bidder at his own cost within a week's time of written order from the Engineer- in-charge to do so.
2. The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer- in- charge. The cement godown of sufficient capacity to store cement shall be constructed by the Bidder at site of work for which no extra payment shall be made.
3. Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-Charge or his authorized representative and the keys of the other lock shall remain with the Bidder. The Bidder shall be responsible for the watch and ward and safety of the cement godown. The Bidder shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.
4. The cement shall be got tested by the Engineer-in-charge and shall be used on the work only after satisfactory test results have been received. The Bidder shall supply free of charge the cement required for testing including its transportation & cost to testing paid to approved laboratories. The cost of all tests shall be borne by the Bidder.
5. The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to made.
6. The cement brought to the site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in-charge.
7. The damaged cement shall be removed from the site immediately by the Bidder on receipt of a notice in writing from the Engineer-in-charge. If he does not do so within 3 days of receipt of such notice, the Engineer- in-charge shall get it removed at the cost of the Bidder. Chief Engineers may change the brand of Cement depending upon availability in local market, if needed. Instructions in this respect can be issued by them at regular intervals. The name of manufacturers should be finalized after taking into consideration the suggestions of Bidders during pre-bid meeting, if any.
8. The Bidder shall submit, a copy of challan & invoice with details of vehicle for each delivery of Cement lot at site.

SPECIAL CONDITIONS – STEEL

1. The Bidder shall procure TMT bars of Fe500D/ Fe500 grade from primary producers such as SAIL or TISCO or RINL as approved by Ministry of Steel. In case of non-availability of steel from primary producers the NIT approving authority may permit use of TMT reinforcement bars procure from Secondary producers. In such cases following conditions are to be stipulated in the NIT by NIT approving authority: -

(a) The grade of steel such as Fe500D/ Fe500 grade or other grade to be procure is to be specified as per BIS 1786-2008.

(b) The secondary producers must have valid BIS Licence to produce HSD bars conforming t IS 1786: 2008. In addition to BIS licence, the secondary have valid licence from either of the firms Tempcore, Thermex, Evcon Turbo & Turbo Quench to produce TMT bars.

(c) The TMT bars procured from primary producers shall conform to manufactures specifications.

(d) The TMT bars procured from secondary producers shall conform to the specifications as laid by Tempcore, Thermex, and Evcon Turbo & Turbo as the case may be.

(e) TMT bars procured either from primary producers or secondary producers, the specifications shall meet the provisions of IS 1786:2008 pertaining to Fe 500/500 D grade of steel as specified in the Bid .

2. The Bidder shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.
3. Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the Bidder does not conform to the specifications as defined under para (1) (d) & (1) (e) above, the same shall stand rejected, and it shall be removed from the site of work by the Bidder at his cost within a week time of written orders from the Engineer-in-charge to do so.
4. The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-charge.
5. The steel reinforcement bars shall be stored by the Bidder at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
6. For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:-
7. All ductility requirement as per IS Code 4326, 1893, SP34 should be followed

Size of bars	For consignment Below 100 tonnes	For Consignment Over 100 tonnes.
Under 10mm dia bars.	One sample for each 25 tonnes or part thereof	Sample for 40 tonnes or part thereof.
10mm to 16mm dia bars	One sample for each 35 tonnes or part thereof.	Sample for 45 tonnes or part thereof
Over 16 mm dia bars	One sample for each 45 tonnes or part thereof	Sample for 50 tonnes or Part thereof.

8. The Bidder shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the Bidder
9. The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.
10. The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.
11. In case Bidder is permitted to use TMT reinforcement bars procured from secondary producers then:-

    (i) The base price of TMT reinforcement bars as stipulated under schedule 'F' shall be reduce by Rs**. 4,320/-** per MT.

    (ii) The rate of providing & laying TMT reinforcement bars as quoted by the Bidder in the Bid shall also be reduced by **Rs. 4.80** (Rs. Four Rupees and Eighty Paisa only) Per Kg.
12. Reinforcement steel shall be of following grade with respect to dia metre.

    (ii) 8 and 10mm dia TMT shall be Fe-500.

    (iii) 12mm and above dia shall be Fe-500D.

    (iv) 500D/550D can be used for which nothing extra will be paid.

SPECIAL CONDITIONS FOR BITUMEN

The following special conditions will be applicable for the procurement and use of the bitumen.

Conditions for Bitumen

1. The Bidder shall procure Bitumen VG30 grade (Department will not supply any material for the project) in conformity with IS – 73, IRC: SP: 53 – 1999 or other relevant code, from reputed manufacturers of bitumen / distributors such as Bharat Petroleum / India Oil / Hindustan Petroleum whose name shall be got approved from the Engineer-in-Charges. Supply of bitumen shall be taken in drums or in bulk bearing manufacture's name and ISI marking from the approved suppliers. Samples of bitumen arranged by the Bidder shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant IS-73 code. In case, test results indicate that the bitumen arranged by the Bidder does not conform to the case, the same shall stand rejected and shall be removed from the site by the Bidder at his own cost within a week's time or written instructions from the Engineer-in-Charge to do so.
2. The Bidder will furnish detailed planned schedule of the delivery of bitumen in advance.
3. The Bidder should furnish proof of purchase of Bitumen of specified Quality from refinery of IOC / Bharat Petroleum / Hindustan Petroleum, to the satisfaction of Engineer-in-Charge. The Bidder shall submit the following documents as proof purchase referred herein with every running bill:
   (a) Test Report of Refinery
   (b) Original Invoice of bitumen supplied by the refinery for each tanker/truck
   (c) Transporters receipt who has transported the bitumen from refinery to plant or site of work.
   (d) Gate-pass of the refinery.

   No running payment shall be released without submission of the above document.
4. The Bidder shall obtain a complete reconciliation statement of the bitumen supplied for the project from the refinery on completion of 50%, 75% and 100% supply of bitumen. A certificate from the refinery from where bitumen is supplied for the project indicating that "the refinery has supplied……qty. of bitumen by …
   ……..invoices……dated……tanker no…….to
   M/s…….. against the work of …… ……..

   This certificate shall require to be attached with the running bill succeeding to the bill in which stipulated % of quantity as mentioned above will be completed. Running Bill payment after the stage for submission of such consolidated statement will not be made without production of such consolidated statement from refinery.
5. The bitumen shall be stored by the Bidder at site of work or plant in such a way as to prevent damage and nothing extra shall be paid on this account. The Bidder shall be responsible for watch and ward and ward and safety of the bitumen stored. The Bidder shall facilitate the inspection of bitumen stored at site by the Engineer-in-Charge at any time.
6. The Bidder shall supply from the stores the bitumen required for testing. The cost of such tests inclusive of carriage and transportation shall be borne by the Bidder.
7. Bitumen brought to site and remaining unused after completion of the work shall not be removed from site without written permission of the Engineer-in-Charge.
8. The theoretical quantity and actual quantity of Bitumen used shall be compared with CPWD specification with upto date correction slips.

Approved List of Laboratories Other than Field Tests

The following Government & Non – Government Laboratories are approved for testing of samples

(A) Government Laboratories

i) NTH, Ghaziabad
ii) CRRI, Delhi
iii) IIT, Delhi
iv) C.P.W.D. Lab, I.P. Estate, New Delhi
v) R.T.C. Okhla
vi) C.B.R.I. Roorkee
vii) FRI, Dehradun
viii) NCCBM, Ballabhgarh
ix) Delhi Technological University, Delhi

(B) Non-Government Laboratories

i) Sri Ram Test House, Delhi
ii) Sun Beam Auto Lab, Gurgaon
iii) Spectro analytical Lab, Ballabhgarh / Okhla
iv) Delhi Test House, G.T. Karnal Road, Azadpur, Delhi
v) Bharat Test House, Azadpur, Delhi

Note: 75% tests shall be got undertaken from the Govt. labs and rest 25% shall be from the approved Non-Govt. labs.

LIST OF EQUIPMENTS REQUIRED IN SITE TESTING LABORATORY OF BIDDER

1. Sieves : as per IS 460:
   i) IS Sieve – 450mm internal dia. of sizes-100mm, 80mm, 63mm, 50mm, 40mm, 25mm, 20mm, 10mm, 6.3mm, 4.75mm complete with lid and pan.
   ii) IS Sieve – 200mm internal dia. (brass frame) consisting of 2.36mm, 1.18m, 504 microns, 90 microns, 75 microns with lid and pan.
2. **Fine mesh**
3. Thickness gauge
4. **Length gauge**
5. Electronic Balance
6. Weighing machine
7. Oven :- Electrically operated, thermostatically controlled upto 110℃- Sensitivity 1℃.
8. Airtight containers
9. Open-ended steel cylinder 15 cm dia with plunger & base plate
10. Cylindrical tamping rod
11. Compressive testing machine/cube testing machine: - 100 tones compression testing machine, electrical-cum-manually operated.
12. Funnels
13. Measuring cylinders: - Graduated measuring cylinders, 200ml capacity – 03 Nos. broken one, if any to be replaced by the Bidder at his own cost.
14. Moisture meter
15. Testing kits for testing chlorides & sulfhates
16. PH testing strips
17. Titration equipment with pipette
18. Vicat Apparatus
19. Le chatellier test apparatus
20. Vibrating machine
21. Standard weights
22. Water bath
23. Gauging trowel
24. Pocking rod
25. 150mm size cube moulds MS :-adequate numbers
26. Vernier calliper
27. Micrometre
28. Dial gauges (Minimum 5) :- 25mm travel – 0.01mm/ division least count – 02 Nos.
29. Slump cone :- Equipment for slump test – slump cone, steel plate, tamping rod, steel scale, scoop.
30. Equipment for checking field density of earth.
31. Dial groups for measuring deflects
32. Any other equipment required for testing
33. **Survey Instrument**
    i) Dumpy Level with staff -
    ii) Theodolites
    ii) Total Station
34. Equipment to measure distance
35. Other instruments like steel tapes – 3m & 30m, Vernier Callipers, a good quality plumb bob, sprit level minimum 30cm long with 3 bubbles for horizontal, vertical, wire gauge (circular type) disc, foot rule, long nylon thread, magnifying glass, screw driver 30cms long, ball pin hammer 100 gms, plastic bags for taking samples etc:
    a. Micrometre screw 25mm gauge.
    b. Rebound hammer for testing concrete dynamic penetrometer.

FORM OF EARNEST MONEY (BANK GUARANTEE)

Whereas, Bidder..... (Name of Bidder) (hereinafter called "the Bidder") has submitted his Bid dated ..... (date) for the construction of ..... (name of work) (hereinafter called "the Bid")

Know all people by these presents that we ..... (name of bank) having our registered office at ..... (hereinafter called "the Bank") are bound unto ..... (Name and division of Executive Engineer) (hereinafter called "the Engineer-in-Charge") in the sum of Rs. ..... (Rs. in words .....) for which payment well and truly to be made to the said Engineer-in-Charge the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this ..... day of ..... 20...

THE CONDITIONS of this obligation are:

i) If after Bid opening the Bidder withdraws, his Bid during the period of validity of Bid (including extended validity of Bid) specified in the Form of Bid;

ii) If the Bidder having been notified of the acceptance of his Bid by the Engineer-in-Charge:

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidder, if required; OR

(b) fails or refuses to furnish the Performance Guarantee, in accordance with the provisions of Bid document and Instructions to Bidder, OR

(c) fails or refuses to start the work, in accordance with the provisions of the contract and Instructions to Bidder, OR

(d) fails or refuses to submit fresh Bank Guarantee of an equal amount of this Bank Guarantee, against Security Deposit after award of contract.

We undertake to pay to the Engineer-in-Charge up to the above amount upon receipt of his first written demand, without the Engineer-in-Charge having to substantiates his demand, provided that in his demand the Engineer-in-Charge will note that the amount claimed by his is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date* ..... after the deadline for submission of Bid as such deadline is stated in the Instructions to Bidder or as it may be extended by the Engineer-in- Charge, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE..... SIGNATURE OF THE

BANK WITNESS..... SEAL (SIGNATURE, NAME AND ADDRESS)

*Date to be worked out on the basis of validity period of 6 months from last date of receipt of Bid.

FORM OF BANK GUARANTEE BOND
(PERFORMANCE GUARANTEE)

In consideration of the Managing Director of DSIIDC (hereinafter called "The DSIIDC") having offered to accept the terms and conditions of agreement between ……. And…… (hereinafter call "the said Bidder(s)" …… for the work……. (Hereinafter called "the said agreement") having agreed to production of a irrevocable Bank Guarantee for Rs. ……. (Rupees …… only) as a security/ Guarantee from the Bidder(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement,

1. We …….. (hereinafter referred to as "the Bank") hereby undertake to pay to the DSIIDC an amount not exceeding Rs. …….. (Rupees …….. only) on demand by the DSIIDC.
2. We …… (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from the DSIIDC stating that the amount claimed is required to meet the recoveries due or likely to be due from the said Bidder(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs.……. (Rupees……..only).
3. We the said bank further undertake to pay to the DSIIDC any money so demanded notwithstanding any dispute or disputes raised by the Bidder(s) in any suit or proceeding pending before any court or tribunal related thereto, our liability under this present being absolute and unequivocal.
   The payment so made by us under this bond shall have been a valid discharge or our liability for payment there-under and the Bidder(s) shall have no claim against us for making such payment.

4. We ……..(indicate the name of the Bank) further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the DSIIDC under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the DSIIDC certified that the terms and conditions of the said agreement have been fully and properly carried out by the said Bidder(s) and accordingly discharges this Guarantee.
5. We …… (indicate the name of the Bank) further agree with the DSIIDC that the DSIIDC shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Bidder(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the DSIIDC against the said Bidder(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, extension being granted to the said Bidder(s) or for any forbearance, act of omission on the part of the DSIIDC or any indulgence by the DSIIDC to the said Bidder(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Bidder (s).

7. We …… (indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Delhi State Industrial & Infrastructure Development Corporation Ltd. in writing.
8. This guarantee shall be valid up to …… unless extended on demand by Delhi State Industrial & Infrastructure Development Corporation Ltd. Notwithstanding anything mentioned above, out liability against this guarantee is restricted to Rs. ……. (Rupees……only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the ……. Day of …… for ……. (Indicate the name of Bank)

GUARANTEE TO BE EXECUTED BY BIDDERS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

The Agreement made this…….day of Two Thousand and ……between….. …….....……son of..... …… of (hereinafter called the Guarantor of the one part) and the Chairman & Managing Director, DSIIDC (hereinafter called DSIIDC).

WHEREAS THIS agreement is supplementary to a contract (hereinafter called the Contract) dated and made between the GUARANTOR OF THE ONE part and the DSIIDC of the other part, whereby the Bidder, *inter alia*, undertook to render the buildings and structures in the said contract recited completely water and leak-proof.

AND WHEREAS GUARANTOR agreed to give a guarantee to the effect that the said structures will remain water and leak-proof for five years from the date of giving of water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak-proof and the minimum life of such water proofing treatment shall be five years to be reckoned from the date after the maintenance period prescribed in the contract:

Provided that the' guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose:

(a) Misuse of roof shall mean any operation, which will damage with proofing treatment, like chopping of firewood and things of the same nature, which might cause damage to the roof;

(b) Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts;

(b) The decision of the Engineer-in-Charge with regard to cause of leakage shall be final.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect being found render the building water proof to the satisfaction of the Engineer-in-Charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other Bidder at the GUARANTOR'S cost and risk. The decision of the Engineer-in- Charge as to the cost, payable by the Guarantor shall be final and binding.

That if Guarantor fails to execute the water proofing or commits breach there under then the Guarantor will indemnify the Principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in 'performance and observance of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the DSIIDC the decision of the Engineer-in-Charge will be final and binding on the parties.

WITNESS WHEREOF these present have been executed by the Obligor .....……..…….and by……..and for and on behalf of the Managing Director, DSIIDC on the day,…… month and year first above written

SIGNED, SEALED and delivered by OBLIGOR in the presence of:

1.

2.

SIGNED FOR AND on behalf of The Chairman & Director of DSIIDC by …….. in the presence of:

1.

2.

STAGES OF PAYMENT FOR BUILDING WORK (CIVIL)

Low Cost Housing (G + 4 Storeyed) at Tikri Kalan, Delhi (Phase-II)

S.No	Description	Individual (%)	Cumulative (%)
1.	Construction of structure upto DPC level/ Plinth level (level 1)	15.00	15.00
2.	Construction of structure upto floor 2 level.	12.00	27.00
3.	Construction of Structure upto floor 3 level.	12.00	39.00
4.	Construction of structure upto floor 4 level.	12.00	51.00
5	Construction of structure upto floor 5 level.	12.00	63.00
6.	Construction of structure upto floor 6 level (Terrace level) with parapet wall.	12.00	75.00
7.	Providing & fixing Door& window frames. (GF, FF, SF, Third Floor, Fourth Floor)	2.50	77.50
8.	Providing & fixing Door & Window shutters (excluding glass panes) (GF, FF, SF, Third Floor, Fourth Floor)	4.00	81.50
9.	Providing & fixing Stair case railing, Window grills (GF, FF, SF, Third Floor, Fourth Floor, Fifth Floor)	1.00	82.50
10.	Internal Flooring i/c skirting including kitchen & toilet. (GF, FF, SF, Third Floor, Fourth Floor, Fifth Floor)	2.00	84.50
11.	Sanitary installation work for all floors.	2.00	86.50
12.	Water Supply installation work for all floors.	1.00	87.50
13.	Water proofing of terracing, all complete with R.W.P. fittings including overhead RCC & PVC Tank.	1.00	88.50
14.	Providing / Fixing W.C. Seats, kitchen sink and taps of all floors including manhole & gully trap.	1.50	90.00
15.	Providing / Fixing glazed tiles dado in kitchen & toilet and kota on kitchen platform at all floors	1.50	91.50
16..	Internal Finishing: putty/white washing/painting etc. for all floors	2.50	94.00
17.	External Finishing: with exterior acrylic paint & synthetic enamel paint for all floors	2.50	96.50
18.	Providing / Fixing Door & window fittings and fixtures i/c glass panes for all floors.	1.50	98
19.	Handing over of flats defect free in all respects and testing of all services to satisfaction of Engineer-in-Charge.	2	100%

Note: - The work will broadly proceed as per the stages indicated above. However for work between two consecutive stages, the payment will be released for the lower stage. If some work is not executed as per the above sequence and later sequence is executed first, then the payment for that stage will be released at the discretion of the Engineer-in-Charge and his decision in this regard will be final and binding.

QUANTITIES FOR GUIDENCE ONLY

QUANTITIES FOR ONE BLOCK OF 20 DU'S

NAME OF WORK & LOCATION : CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR /SLUM REHABILITATION AT TIKRI KALAN ,DELHI .

S.No.	Item of work	Qty.	Unit
1	EARTH WORK		
I	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drain (not exceeding 1.5 m in width or 10 sqm in plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m , including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 .0 meter.		
	All kinds of soil	314.62	Cum
II	Filling available excavated earth (excluding rock) in trenches , plinth sides of foundations etc. in layers not exceeding 20 cm in depth , consolidating each deposited layers by ramming and watering , lead up to 50 m and lift up to 1.5 m.	331.09	Cum
III	Carriage of earth from Bawana Industrial area of DSIDC by mechanical transport including loading, unloading complete without any royalty but necessary administrative per mission by the agency .	16.47	Cum
IV	Supplying and filling in plinth jamuna sand under floors including,watering , ramming consolidating and dressing complete .	7.81	Cum
2	**CONCRETE WORK**		
	Providing & laying in position cement concrete of grade 1: 5:10 with (1cement : 5 coarse sand : 10 graded stone aggregate with 40 mm nominal size) excluding cost of form work complete.	35.18	Cum
3	**REINFORCEMENT CEMENT CONCRETE WORK**		
	Providing & laying in position machine batched, machine mixed & machine vibrated design mix of M-25 grade for reinforced cement concrete work , using cement content as per approved design mix, including pumping of concrete to site of laying of laying but excluding the cost of centering , shuttering, finishing and reinforcement , including admixtures in recommended proportion as per IS :9103 to accelerate , retard setting of concrete improve workability without impairing strength and durability as per direction of Engineer-in-charge.		
	cement content considered in this items is @330 kg / cum. Excess cement content is not payable and minus cement content not to be permitted.		
I	All work Up to floor five level	407.87	cum
II	Reinforcement for R.C.C work including straightening, cutting, bending, placing in position & binding all work complete . (Fe-500)	27490.00	Kg
III	Centering and shuttering including strutting , propping etc.and removal of form for -		
a	foundations, footings, bases of columns etc.	21.31	Sqm
b	Walls (any thickness) including attached pilasters, buttresses, plinth and string course .	751.02	Sqm
c	Suspended floors, roofs, landings, balconies and access platfom	31.50	Sqm
IV	Providing ,erecting and fixing in position ,prefabricated, predesigned ALUMINIUM FORM WORK SYSTEM, true toline to line , level and plumb (as per manufactured form work manual) for concrete members like walls , slab, chhajas, sills, pardis, staircases , brackets, fins and all other architectural features of any shape and profile having provision formaking groove, so as to achive slab cycle of average 6days perfloor for each building.The rate shallinclude applying of approved formwork oil for easy removal of formwork. Component edges must be cleaned properly after de-shuttering of formwork after every concrete pour. After removal joints between panels should be grinded properly to achieve form finish surface,which does not require any plaster.The thickness of sheet shall be 4mm.	3935.30	Sqm
V	Providing , pre-cast cement concrete jalli , 1:2:4(1 cement : 2 coarse sand :4 graded stone aggregate 6 mm nominal size) reinforced with 1.6 mm dia mild steel wire including centering and shuttering , roughening , cleaning , fixing and finishing in cement mortar 1:3 (1 cement :3 fine sand) etc. complete excluding plastering of the jambs, sills and soffits.	21.60	Sqm
	40 mm thick		
4	**BRICK WORK**		

I	Brick work F.P.S. bricks of class designation 75 in foundation and plinth in :		
	cement mortar1:6 (1 cement : 6 coarse sand)	0.28	Cum
II	Brick work with F.P.S. bricks of class designation 75 in superstructure above plinth level up to floor V level in all shapes and sizes in:		
	Cement mortar 1:6 (1 cement : 6 coarse sand)	3.55	cum
III	Half brick masonry with bricks of class designation 75 in super structure above plinth level up to floor V level.		
	Cement mortar 1:4 (1 cement : 4 coarse sand)	27.00	Sqm
5	**STONE WORK**		
I	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of 1:4 (1 cement : 4 coarse sand) (Not more than in two pieces) 20mm thick	27.02	Sqm
II	Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab (for Kitchen slab).	38.60	meter
III	Extra for Kota stone/sand stone in treads of staps and risers using single length upto 1.05 meter	27.02	Sqm
6	**WOOD WORK AND PVC WORK**		
I	Providing & fixing ISI marked fully flush doors shutters conforming to I.S. 2202 part I non decorative type core of block board construction with frame of Ist class hard wood and well matched commercial 3 mm ply veneering with vertical grains or cross bands and face veneers on both face of shutters 30 mm thick .		
a	35 mm thick external door	44.10	Sqm
b	30 mm thick external door	69.30	Sqm
II	Providing and fixing glazed shutters for windows and clerestory windows using 4 mm thick plain glass including ISI marked M.S.pressed butt hinges bright finished of required size and beading of size 19 mm x 12 mm with necessary screws, complete as per drawing and direction of Engineer-in-charge.		
	30 mm thick of Klin Seasoned and chemically treated Mirandi wood.	58.50	Sqm
III	Providing and fixing fibre Glass Reinforced plastic (FRP) Door Frames of cross-section 90mm x 45mm having single rebate of 32mm x 15mm to receive shutter of 30mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat .Doorframe laminate shall be 2mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered withFibreglass from all sides. M.S. stay shall be provided at the bottom to steady the frame.	201.20	RMT
IV	Providing and fixing to existing door frames. 30 mm thick Glass Fibre Reinforced plastic (FRP) panelled door shutter colour and approved brand and manufacture , made with fire -retardant grade unsaturated polyester resin , moulded to 3 mm thick FRP laminate for forming hollow rails and styles , with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings ,cast monolithically with 5 mm thick FRP laminate for panels conforming to IS : 14856, Including fixing of frame .	63.00	Sqm
V	COPER OXIDISED MILD STEEL FITTINGS (COPPER OXIDISED AS PER IS : 1378)		
a	Providing and fixing ISI marked Oxidised M.S sliding door bolts with nuts and screws etc. complete 250 x16 mm .	60.00	Nos
b	Providing and fixing ISI marked oxidised M.S. tower bolt black finish, (Barrel type) with necessary screws, etc. complete 250 x10 mm	100.00	Nos
c	Providing and fixing ISI marked oxidised M.S. tower bolt black finish, (Barrel type) with necessary screws, etc. complete 150x10mm	100.00	Nos
d	Providing and fixing ISI marked oxidised M.S. tower bolt black finish, (Barrel type) with necessary screws, etc. complete 100x10mm	240.00	Nos
e	Providing and fixing ISI marked oxidised M.S handles conforming to IS :4992 with necessary screws etc. complete 125 mm	200.00	Nos
f	Providing and fixing ISI marked oxidised M.S handles conforming to IS :4992 with necessary screws etc. complete 100 mm	120.00	Nos
g	Providing and fixing oxidised M.S. Eye & hook in each shutter in each shutter.	120.00	Nos
h	Providing and fixing aluminium hanging floor door stopper ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade with necessary screws etc. complete. Single rubber stopper	60.00	Nos
i	Providing and fixing ISI marked 85 mm x 42 mm oxidised M.S pull bolt lock conforming to I.S 7534 with necessary screws bolts, nut and washers etc. complete.	20.00	Nos
7	**STEEL WORK**		

I	Providing and fixing T-iron frames for doors ,windows and ventilators of mild steel Tee sections, joints mitred and welded including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.		
	Fixing with dash fastener of required dia and and size	1701.22	kg
II	Providing and fixing 1 mm thick M.S sheet door with frame of 40 x40x 6mm T iron and 3mm M.S gusset plates at the junctions and corners all necessary fittings complete including applying a priming coat of approved steel primer.		
	Using M.S angle 40 x 40 x 6 mm for diagonal bracces	0.54	Sqm
III	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. Fixed to steel windows by welding	468.00	kg
IV	Providing and fixing M.S. angle 25x25x3 mm to act as nosing with lugs of M.S. bar 6mm dia 20 cm long forked at end 60cm apart (minimum three lugs to be provided) including necessary welding and applying a priming coat of approved primer on exposed surface etc. complete.	133.92	kg
V	Providing and fixing hand rail of approved size welding etc. to steel ladder railing, balcony railing and stair case railing including applying a priming coat of approved steel primer .		
	M.S tube (D type) 40 mm for stair case railing .	86.40	kg
VI	Steel work welded in built up sections/framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.		
	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works. railing in stair case	172.80	kg
8	**FLOORING**		
I	Cement concrete flooring 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry but excluding the cost of nosing of steps etc. complete.(On steps check ring to be done as per design)		
	40 mm thick with 20 mm nominal size stone aggregate	528.07	Sqm
II	25 mm thick cement concrete on steps 1:2:4 (1 cement : 2 coarse sand :4 stone aggregate 20 mm nominal size) with a neat coat of cement slurry .	70.24	Sqm
III	Extra for making chequers of approved pattern on cement concrete floors, steps, landing , pavements etc.	42.90	Sqm
IV	P/L ceramic glazed wall tiles confirming to IS: 15622 (thickness to be specified by the manufacture) of approved makes and shades over 12 mm thick bed of cement mortar 1:3 (1cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	218.47	Sqm
V	Providing and fixing 40mm wide and 4 mm thick glass strips in joints of cement concrete floor .	786.60	RMT
9	**FINISHING**		
I	12 mm thick cement plaster of mix 1:4 (1 cement :4 coarse sand) mortar	47.25	Sqm
II	12 mm thick cement plaster in 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement using water proofing compound in side of water tank	58.17	Sqm
III	Cement plaster skirting (up to 30 cm height) with cement mortar 1:3 (1 cement :3 coarse sand) finished with a floating coat of neat cement .		
	18 mm thick	79.18	Sqm
IV	Providing and applying white cement based putty of average thickness 1 mm of approved brand and manufacture over the plastered wall surface to prepare the surface even and smooth complete.	1540.70	Sqm
V	Applying priming coat : With ready mixed pink or grey primer of approved brand and manufacture on wood work (hard and soft wood) .	285.30	Sqm
VI	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade:		
	Two or more coats on new work .	373.68	Sqm
VII	White washing three or more with lime to give an even shade over new work.	1171.93	Sqm
VIII	Distempering with dry distemper of approved brand and manufacture (two or more coats) and of required shade on new work over and including priming coat of whiting to an even shade.	1526.25	Sqm
IX	Finishing walls with acrylic smooth exterior paint of required shade on new work two or more coats applied & 1.67 lit / 10 sqm over and including base coat of water proofing cement paint applied @ 2.2 kg / 10 sqm as per	2506.55	Sqm
X	Extra for providing and mixing water proofing material in cement concrete work in proportion recommended by the manufacture.	48.00	Per Bag of 50 Kg
XI	Extra for addition of synthetic polyester traingular fibre of length 12 mm , effective diameter 10- 40 microns and specific gravity of 1.34 to 1.40 in cement concrete /RCC / Flooring / water retaining structures by using 125 gms of synthetic Polyestar traingular fibre for 50 kgs cement used asper direction of Engineer-in-Charge.	74.00	125 gram /bag of cement.

10	**ROOFING**		
I	Providing and fixing on wall face unplasticised-Rigid PVC rain water pipes conforming to IS :13592 Type A including jointing with seal ring conforming to IS:5382 leaving 10 mm gap for thermal expansion.		
	Single Socketed Pipes		
	110 mm dia	30.00	RMT
II	Providing and fixing on wall face unplasticised - PVC moulded fittings / accessories for unplasticised Rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS:5382 leaving 10 mm gap for thermal expansion.		
	Bend 87.5"		
	110mm bend	2.00	Nos
	Shoe (Plain)		
	110 mm Shoe	2.00	Nos
III	Providing and fixing to the inlet mouth of rain water pipe PTMT (an Engineering thermoplastic) grating square (Slit) 150 mm square with a height of 8 mm and weighing not less than 100 gms.	2.00	Nos
IV	Providing and fixing 40 mm dia UPVC spout with chamfered edge at 45 degree of length 200 mm in balcony.	16.00	Nos
V	Providing and fixing 40 mm dia UPVC spout with chamfered edge at 45 degree of length 250 mm in WC & Bath.	32.00	Nos
VI	Making khurras 45 x 45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C sheet 1m x 1m x 400 micron , finished with mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement rounding the edge sand making and finishing the outlet complete .	2.00	Nos
11	**SANITARY INSTALLATIONS**		
I	P/F water closet squatting pan white vitreous china Orissa pan(580 X 440) with 100 mm uPVC -P or S trap, 10 lit low level white P.V.C flushing cistern with manually controlled device (hand lever) confirming to IS: 7231, With all fittings and fixture complete including cutting and making good the walls and floors wherever required. (uPVC P trap shall be paid seperately)	20.00	Nos
II	P/F Stainless steel KITCHEN SINK with C.I brackets including painting of brackets cutting and making good the walls and floors wherever required .		
	Kitchen sink without drain board (610 x 460 x 200)	20.00	Nos
III	Providing and fixing PTMT grating of approved quality and colour.		
	Circular type		
	100 mm nominal dia	20.00	Nos
	125 mm dia	20.00	Nos
IV	Providing and fixing UPVC - SWR pipes / fittings as per Confirming to IS 13592,type-B including jointing with seal ring & adhesive solution complete.		
	SWR PIPE for soil , waste & vent pipe.		
a	110 mm dia	68.00	RMT
b	75 mm diameter	73.00	RMT
V	Providing and fixing UPVC - SWR fittings as per Confirming to IS 13592,type-B including jointing with seal ring & adhesive solution complete.		
a	UPCV P-Trap		
	110 mm x 110 mm	20.00	Nos
b	Door Tee		
i	110 mm x 110 mm	16.00	Nos

ii	75 MM DIA	16.00	Nos
c	Bend 87.5 Degree		
i	110 mm	4.00	Nos
ii	75 MM DIA	4.00	Nos
d	Vent Cowel		
i	110 mm	4.00	Nos
ii	75 MM DIA	4.00	Nos
e	Floor trap		
	110 mm inlet and 75 mm outlet	60.00	Nos
f	Door Double Y		
	75 MM DIA	16.00	Nos
VI	Providing and fixing clamps for vertical UPVC pipes with carbon steel galvanised dash fastener of 6 mm dia and 50 mm long.		
	For Rain water / sanitary pipe 110 MM DIA	60.00	Nos
	76 mm dia pipe (Kitchen & bath)	60.00	Nos
VII	Providing and fixing square-mouth S.W. qully trap grade 'A' complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :		
	150 x 100 mm size P type		
	With F.P.S. Bricks class designation 75	5.00	Nos
12	**WATER SUPPLY**		
a	Providing and fixing 3 layer PP-R (Poly propylene Random copolymer) pipes SDR 7.4 U V stabilized & anti - microbial fusion welded, having thermal stability for hot & cold water supply including all PP - R plain & brass threaded polypropylene random fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes testing of joints complete as per direction of Engineer in Charge.		
	Internal work - Exposed on wall.		
i	PN - 16 Pipe, 16 mm OD	90	RMT
ii	PN - 16 Pipe, 25 mm OD	290	RMT
iii	PN - 16 Pipe, 20mm OD	6	RMT
iv	PN - 16 Pipe, 32 mm OD	30	RMT
b	Providing and fixing PTMT bib cock of approved quality conforming to IS : 8931		
i	15 mm nominal bore 122 mm long.	20	Nos
ii	15 mm nominal bore 86 mm long	40	Nos
c	Providing and fixing PTMT angle stop cock of approved quality and colour.		
	15mm nominal bore, weighing not less than 85 gms	20	Nos
d	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :		
i	25 mm nominal bore	22	Nos
ii	32 mm nominal bore	2	Nos
e	Providing and fixing PTMT Waste coupling for wash basin and sink of approved quality and colour.		

	Waste coupling 38 / 40 mm dia of 83 mm length and 77 mm breadth weighing not less than 60 gms	20	Nos
f	Providing and fixing P.V.C Flexible Waste pipe for sink or wash basin including P.V.C waste fittings complete .		
	32 mm dia.	20	Nos
g	Providing and fixing unplasticised PVC connection pipe with PTMT Nuts collar and bush of approved quality and colour.		
	15 mm nominal bore with 30 cm length.	20	Nos
h	Providing and placing on terrace (at all floor level s)polyethylene water storage tank ISI : 12701 marked with cover and suitable locking arrangement and marking necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank .	3000	Lit
i	Providing and fixing ball valve (brass) of approved quality , high or low pressure with plastic floats complete .		
	25 mm nominal bore	2.00	Nos
13	**DRAINAGE**		
	Providing and fixing in position pre-cast R.C.C manhole cover and frame of required shape and approved quality. (For tank)		
	MD-10		
	Circular shape 500 mm internal diameter.	6.00	Nos
14	**WATER PROOFING**		
I	Providing and laying integral cement based waterproofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc. consisting of following operations.		
	Applying a slurry coat of neat cement using 2.75 kg. / sqm of cement admixed with waterproofing compound conforming to IS:2645 and approved by Engineer-in-charge over the R.C.C. slab including adjoining walls up to 300mm height including cleaning the surface before treatment.		
	Laying brick bats with mortar using broken bricks/brick bats 25mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with waterproofing compound conforming to IS:2645 and approved by Engineer-in-charge over 20mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with waterproofing compound conforming to IS:2645 and approved by Engineer-in-Charge over 20mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.		
	After two days of proper curing applying a second coat of cement slurry using 2.75 Kg/Sqm of cement admixed with waterproofing compound conforming to IS:2645 and approved by Engineer-in-charge.		
	Finishing the surface with 20mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with waterproofing compound conforming to IS : 2645 and approved by Engineer-in-charge laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making of 300x300 mm square 3mm deep.		
	The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed & specified by the Engineer-in-charge.		
	With average thickness of 120 mm and minimum thickness at Khurra as 65 mm		
	Terrace	125.80	Sqm
II	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm. This layer will be allowed to air cure for 4 hours. b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	115.84	Sqm
15	**MISC.WORK**		
	Providing and fixing pre-cast 600 mm wide & 30 mm thick Ferro cement slab shall be casted with 1:1.5 (1 cement :1.5 coarse sand) with one layer of welded 12 gauge steel wire fabrics forming mesh of 25 x 75 mm and two layers of steel wire chicken mess 12.5 x 12.5 mm spacing complete.	21.60	Sqm

QUANTITY FOR GUIDENCE ONLY (PER BLOCK OF 20 DU's)

NAME OF WORK & LOCATION : CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR /SLUM REHABILITATION AT TIKRI KALAN ,DELHI .			
EXTRA/ LESSER MEASURMENTS OF CIVIL WORK DUE TO CHANGE IN GROUND LEVELS			
S.No.	**Item of work**	**QTY**	**UNIT**
1	**2**	**3**	**4**
1	Carriage of earth from Bawana Industrial area of DSIDC by mechanical transport including loading, unloading complete at site without any royalty.	17.85	Cum
2	Filling available excavated earth (excluding rock) in trenches , plinth sides of foundations etc. in layers not exceeding 20 cm in depth , consolidating each deposited layers by ramming and watering , lead up to 50 m and lift up to 1.5 m. as per DSR 2007 / 2.25	17.85	Cum
3	Providing & laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work , using cement content as per approved design mix, including pumping of concrete to site of laying of laying but excluding the cost of centering , shuttering, finishing and reinforcement , including admixtures in recommended proportion as per IS :9103 to accelerate , retard setting of concrete improve workability without impairing strength and durability as per direction of Engineer-in-charge. cement content considered in this items is @330 kg / cum. Excess cement content is not payable and minus cement content not to be permitted.	2.78	Cum
4	Centering and shuttering including strutting , propping etc.and removal of form for -		
a	Walls (any thickness) including attached pilasters, buttresses, plinth and string course	41.84	Sqm
5	Reinforcement for R.C.C work including straightening, cutting, bending, placing in position & binding all complete up to plinth level (Fe-500)	216.66	Kg

PROFORMA OF SCHEDULES A to F (MINOR COMPONENT)

SCHEDULE `A`

BUILDING WORKS:-

Lump sum price bid (For Internal Electrical Works, all complete)

SCHEDULE `B`

Schedule of materials to be issued to the contractor: - Not applicable

As All Materials to be arranged by the contractor

SCHEDULE `C`

Tools and plants to be hired to the contractor

S. No.	Description	Hire charges per day	Place of Issue
1	2	3	4

NIL

All Tools & Plants are to be arranged by the Contractor.

SCHEDULE `D`

Extra schedule for specific requirements/documents for the work, if any --------.

Not Applicable

SCHEDULE `E`

Schedule of component of Cement, Steel, and other materials Labour etc. for price escalation.

--Not applicable--

SCHEDULE `F`

REFERENCE TO GENERAL CONDITION OF CONTRACT (DSIIDC FORM- 12)

Name of Work : - Construction of low cost housing for urban poor/slum rehabilitation at tikri kalan Delhi comprising of 8420 DU's (G+4) in phase – I (SH: C/O 3380 DU's Package -1)

Estimated cost of work:	Rs. 758.13 Lacs
Earnest Money:	As per schedule A to F of major component
Performance Guarantee	As per schedule A to F of major component
Security Deposit	5% of Tendered value of electrical component

GENERAL RULES & DIRECTIONS:

Officer Inviting Tender	CPM (CD)-XI
Maximum percentage for quantity of items of work to be Executed beyond which rates are to be determined In accordance with the clause 12.2 & 12.3	see below

Definitions:-

Engineer-in-charge	CPM (ED-III), for electrical component
Accepting Authority	WORKS ADVISORY BOARD
Percentage on cost of materials and labour to cover all overhead and profits	15%
Standard Schedule of Rates	DSR 2007 (Internal Electrification)
Department	D.S.I.I.D.C.
Standard contract Form	CPWD FORM 12 as modified & corrected up to the date of Tender

CLAUSE-1

i) Time allowed for submission of Performance Guarantee from the date of issue of letter of award of work. — As per schedule A to F of major component

ii) Maximum allowable extension beyond the period provided in (i) above. — As per schedule A to F of major component

CLAUSE-2

Authority for fixing compensation under clause 2. — PD (H) / SE (H)

CLAUSE- 2A

There is a provision of incentive for early Completion as per clause 2A of clauses of contract as contained in DSIIDC-8 contract Form, forming part of the agreement. — As per schedule A to F of major component

CLAUSE-5

Number of days from the date of issue of letter of acceptance for reckoning date of start — As per schedule A to F of major component

TABLE OF MILE STONE(S)

S.No.	Financial Progress	Time allowed (from date of start)	Amount to be withheld in case of non-achievement of mile stone
1	1/8th (of the whole work)	1/4th (of the whole work)	In the event of not achieving the necessary progress as assessed from the running payment. 1% of the tendered value of work will be withheld for failure to achieve each mile stone.
2.	3/8th (of the whole work)	½ (of the whole work)	
3.	3/4Th (of the whole work)	3/4Th (of the whole work)	
4.	Full	Full	

Time allowed for execution of work	**12 months**
Authority to decide:-	
(i) Extension of Time	**PD(H)/ SE(H)**
(ii) Rescheduling of milestones	**PD (H)/ SE(H)**
CLAUSE – 6 A	Applicable
CLAUSE-7	
Gross work to be done together with Net Payment/adjustment of advances for Material collected, if any, since The last such payment for being Eligible to interim payment.	50 Lacs OR as mutually agreed
CLAUSE 10C	Not Applicable
CLAUSE 10CA	Not Applicable
CLAUSE 10CC	Not Applicable
CLAUSE-11	
Specifications to be followed for execution of work.	CPWD General Specifications 2005 (Internal) For internal I. E. work and for non schedule item ISI specifications/Manufacturers specifications shall be followed
CLAUSE-12	
1. For Construction of Houses:- (Electrical works)	
A. Number of Houses	Deviation in respect of Dwelling units can be **30%** and the contractor shall have to execute the work on the agreement's rates only.
B. Deviation in omission, alterations, addition to / or substitution from the Original specifications, drawings & instructions	
i) Foundations	100%
ii) Super Structure	30%
C. Deviation in Individual Items	30%
CLAUSE-16	
Competent Authority for deciding	

Reduced rates PD (H)/ SE(H)

PROVISION UNDER CLAUSE 36(i)

REQUIREMENT OF MINIMUM TECHNICAL REPRESENTATIVE(S) AND RECOVERY RATE

S.No	Minimum Qualification of Technical Representative	Discipline	Designation (Principal, Technical/ Technical representative)	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i).	
						Figures	**Words**
1.	Degree Holder	Elect.	Technical Representative	5 Years	1 No	Rs. 35000/- PM	Rs. Thirty five thousand PM
	Degree Holder **OR** Diploma Holder	Elect.	Technical Representative	Nil 5Years	2 Nos.	Rs. 30,000/- PM	Rs. Thirty thousand PM.

* Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

CLAUSE-42

i)	Schedules/statement for determining Theoretical quantity of cement & Bitumen.	NA
ii)	Variations permissible on theoretical quantities	NA
(a)	Cement	NA
(b)	Bitumen	NA
(c)	Steel reinforcement and structural Steel sections for each diameter, Section and category	NA
(d)	All other materials	NA

Eligibility Criteria of Agency (L-1) for ELECTRICAL WORKS

1. Main Eligible Agency (L-1) should have experience as mentioned below for execution of electrical work

(a) The agency should have completed successfully in their own name in last 7 years ending last day of the previous month to the one in which tenders are invited.

(i) At least three similar electrical works of value not less than 40% each of the estimated cost of Electrical work contained in the Vol- II of tender.

OR

(ii) At least two similar electrical works of value not less than 60% each of the estimated cost of Electrical work contained in Vol-II of tender.

OR

(iii) One similar electrical work of value not less than 80% of the estimated cost of Electrical work contained in Vol-II of tender.

and

(iv) One electrical work of any nature (either part of (i), (ii) & (iii) above or separate one) value not less than 40% of the estimated cost should necessarily be executed in central / state govt. department/ central autonomous body/ central public sector undertaking.

Similar work means Internal and External electrification works

(b) **The main agency should possess valid electrical license to undertake electrical works of this nature in Delhi**.

2. If the main agency could not fulfill the above condition No.:-1, then the main agency has to associate with electrical agency fulfilling the following criteria.-

(a) The associate agency must be registered with CPWD, those are on appropriate list of Department of Telecommunications, MES, Railways, DDA, NDMC, MCD, I&F deptt. (Delhi), DJB & State PWD as electrical contractors **in appropriate class**.

(b) They should have completed successfully in their own name in last 7 years ending last day of the previous month to the one in which tenders are invited.

(i) At least three similar electrical works of value not less than 40% each of the estimated cost of Electrical work contained in the Vol- II of tender.

OR

(ii) At least two similar electrical works of value not less than 60% each of the estimated cost of Electrical work contained in Vol-II of tender.

OR

(iii) One similar electrical work of value not less than 80% of the estimated cost of Electrical work contained in Vol-II of tender.

and

(iv) One electrical work of any nature (either part of (i), (ii) & (iii) above or separate one) value not less than 40% of the estimated cost should necessarily be executed in central / state govt. department/ central autonomous body/ central public sector undertaking. Similar work means Internal and External electrification works

(c) They should possess valid electrical license authorizing them to undertake electrical works of this nature in Delhi.

(d) The following documents shall be required from associate electrical agency

(i) Copy of Registration certificate under Delhi VAT 2004.
(ii) Copy of completed work experience.
(iii) An undertaking that upto date returns have been filed and agency have no dues towards VAT, with acknowledgement of latest copy of return filed with VAT Deptt.

(iv) Copy of PAN card
(v) Copy of registration with the provident fund commissioner
(vi) Copy of registration for electrical work in appropriate class
(vii) Copy of valid electrical license to carry out the electrical work in Delhi.

(e The main agency shall submit name of the electrical contractor along with their credentials either earlier or within one month from the date of LOA along with Willingness certificate in the enclosed Performa from the associated electrical agency confirming undertaking of this job duly counter signed by the main agency. Main agency is free to nominate more than one agency (Maximum up to three, all eligible) but each nomination should be accompanied with willingness of such nominated electrical contractors.

(f) Engineer-in-charge of electrical component shall approve the eligible electrical contractors as associates electrical agency of the main agency.

(g) After approval of associate agency, the main agency has to enter into an agreement with the associated electrical agency for execution of electrical component within 15 days from the date of approval of associate electrical agency. Certified true copy of such agreement shall be submitted to Chief Project Manager (Electrical) as well as to Chief Project Manager (Civil) in charge of Major component by the main agency.

(h) **If the main contractor fails to associate agency/agencies for execution of minor components of work within prescribed time or furnishes incomplete details or furnishes details of ineligible agencies even after the tenderer is given due opportunity, the entire scope of such component of works shall be withdrawn from the tender and the same shall be got executed by the Engineer-in-Charge at the risk and cost of the main contractor.**

(i) In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of respective Engineer-in-Charge/DDH of the agreement. The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-Charge of respective discipline is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.

Willingness Certificate

Name of Work : - Construction of low cost housing for urban poor/slum rehabilitation at tikri kalan Delhi comprising of 8420 DU's (G+4) in phase – I (SH: C/O 4200 DU's Package -1)

I hereby give my willingness to work as electrical contractor for the above mentioned work.

I will execute the work as per specifications and conditions of the agreement and as per direction of the Engineer-in-Charge for electrical works.

I will employ full time technically qualified engineers & supervisors for the works.

I will attend inspections of officers of the department as and when required.

Associated Electrical Contractor

Main Contractor

General Conditions and Specifications for Electrical Work

1. The work shall be carried out strictly in accordance with CPWD specifications for Electrical Works 2005 (Internal) and 1995 (External) as amended upto date and also in accordance with Indian Electricity Rules 1956 and Indian Electricity Act 1910 as amended upto date.
2. The work shall be carried out according to approved drawings and as per instructions of the Engineer-in-Charge who will have the right to change the layout as per requirement at site and the contractor shall not have any claim due to change in layout.

3. All damages done to the building during execution of Electrical work shall be the responsibility of the contractor and the same will be made good immediately at his own cost to the satisfaction of the Engineer-in-Charge. Any expenditure incurred by the department in this condition shall be recovered from the contractor and decision of the Engineer-in-Charge about recovery shall be final.

4. The bad workmanship will not be accepted and all the defects shall be rectified by the contractor, if the defects are not rectified, the same shall be got done to the entire satisfaction of Engineer-in-charge at the risk and cost of the contractor. The schedule of electrical works is to be co-ordinated in accordance with the building work.

5. All the debris of the electrical works should be removed and the site should be cleared by the contractor immediately after the accruing of debris. Similarly any rejected material should be immediately cleared off from the site by the contractor.

6. Cement, sand etc. for this work is to be arranged by the contractor himself and nothing extra will be paid on this account.

8. The contractor or his authorized representative is bound to sign the site order book as and when required by the Engineer-in-Charge and to comply with the remarks therein.

9. The contractor shall make his own arrangement at his own cost for electrical general tools and plants required for the work including arrangement of water and electricity.

10. No Central/State Sales Tax/VAT/Excise Duty etc. shall be separately paid by the department. Quoted rate should be inclusive of all taxes and duties.

11. The entire installation shall be at the risk and responsibility of the contractor until these are tested and handed over to the department.

12. Not withstanding the schedule of quantities, all items of inter related works considered necessary to make the installation complete and operative are deemed to be included shall be provided by the contractor at no extra cost.

13. The connections, inter connections, switch box earthing and inter earthing shall be done by the contractor wherever required and nothing extra shall be paid on this account.

14. Nothing extra shall be paid for Inter connections with thimbles/wires/tapes etc.

15. The contractor shall submit the completion plan separately in triplicate on blue print with one set on tracing cloth as per clause-8 of the contract within 30 days of the completion of work. In case, the contractor fails to submit the completion plan for electrical works, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to ceiling of Rs.15000/-

16. Watch and ward of the material shall be the responsibility of the Contractor till they are handed over to the department for which nothing extra shall be paid.

17. Piano type switch/sockets outlets and other accessories shall be of single make.

18. The Contractor Shall bear all the expanses for the testing of the electrical material from the designated lab, as desired by Engineer in charge.

19. The Contractor shall abide the specification given in the Tender, where the specification are not given CPWD specification with as on date amendments shall be followed, items which are not covered under CPWD specifications, the decision of Engineer in charge shall be final and binding.

20. Taxes, cess etc. shall be deducted from each running/ final bill at the rate as applicable

21. All hardware items such as screws, thimbles, G.I. wires etc. which are essentially required for completing an item as per specifications will be deemed to be included in the item even when the same have not been specifically mentioned.

22. All materials such as nuts/bolts/screws/washers etc. to be used in the work shall be zinc/cadmium plated iron.

23. Any conduit which is not to be wired by the contractor shall be provided with GI fish wire, nothing shall be paid extra on this account.

24. While laying conduit, suitable junction boxes shall be left for pulling the wires.

25. PVC insulated copper conductor wire used on the work shall be F.R. grade for which nothing extra shall be paid.

26. The MCBs and the MCB Distribution Board shall be of the same make.

27. The earthing shall be carried out in the presence of the Engineer-in-charge or his authorized representative.

28. All fittings/fans will be earthed with 1.5 sq.mm. dia insulated (green colour) copper Wire.

29. The defect liabilities period shall be for one year after the date of actual completion and security shall be released only after actual completion of defect liabilities period.

30. The Contractor shall study the drawing for the internal electrical works as guidance. However, he will get the work plan approved from the Engineer-In-Charge before execution.

31. Any minor item not mentioned in the nomenclature / Drawing or otherwise and if necessary to be executed in views of the Engineer-In-Charge is deemed to be included and the same shall be provided without any extra cost.

32. The Contractor shall make good of all the excavation works to the satisfaction of the Engineer-In-Charge.

33. The Contractor shall provide the required Test Certificates from the manufacture and shall also bear all the expenses for material to be tested from the designated laboratories as desired by engineer-in-charge. Nothing shall be paid on this account.

34. The work is being executed as part of GOI scheme of BSUP under JNNURM. As mentioned in the scheme the work shall be inspected by

    a. TPIM agency appointed by GNCTD.

    b. TPIM agency appointed by GOI.

    c. The work will also be periodically inspected by M/s Shri Ram Institute or any other TPIM agency appointed by DSIIDC to carry out the work of inspection in its behalf.

35. The work may be inspected by QMS Division of DSIIDC besides Central Vigilance Commission ,any deductions/compensation proposed by TPIM/TPQC/CVC or any agency approved by DSIIDC in regard to defective work or work not confirming to specification, loss of time, the amount shall be deducted from bills of agency or by sale of their properties at site.

36. The contractor shall make adequate arrangements for the safety of the workers to avoid any mishappening/ accident at site. However, in case of any accident / mishappening , the contractor shall be fully responsible & liable.

Scope of Internal Electrical work

The internal electrification work of the residential building consists of the following items:

1. Providing recessed/ Surface medium class PVC conduit & FR copper wiring.
2. Providing **Piano type** switch boxes & **Piano type** switches for controlling light points, fan points, power points.
3. Providing MCBDB inside the flat, sub-main wiring through 40A DP isolator in cubical isolator box to MCBDB, circuit wiring covering of light points, fan points, exhaust point, call bell point, light plug points, power plug Points.
4. Providing lockable cubical box for isolators with loose wire box.
5. Providing fittings as and where required

INTERNAL ELECTRIFICATION INSTALLATION SHALL BE CARRIED OUT IN PVC CONDUIT WIRING SYSTEM AS PER SPECIFICATION GIVEN BELOW:

1.	Conduit	►	Surface / Recess medium class PVC conduit (The horizontal chase (where ever required) more than 60 cm shall not be allowed.
2.	Wiring	►	2 x 1.5 sq. mm + 1 x 1.5 sq. mm(E) **FR** copper conductor single core cables for light plugs, Fan/Light/ Call Bell points and Circuit Wiring.
		►	2 x 4.0 + 1 X 4.0 sq. mm sq. mm (E) **FR** copper conductor single core cable for power plug.
		►	2 x 6 sq. mm + 1X6.0 sq. mm (E) **FR** copper conductor single core for sub mains wiring.
3.	Switch & Socket	►	Piano type.
4.	Switch Boxes	►	M.S. Sheet -Galvanised
		►	All boxes shall be surface mounted/recess mounted.
5.	Distribution Board	►	2+4 way SPN DB Consumer Unit. For Dwelling Units
		►	2 nos 40A DP Isolator in incomer for each Flats
		►	4 nos MCB single poles 5 amp to 32 amps for Outgoing Circuits in each flat.
		►	MCB DBs shall be installed at suitable location inside the flat.
6.	Cubical isolator box	►	Cubical type isolator box fabricated with 2.0 mm thick CRCA sheet suitable to accommodate double pole isolator for each flat in individual lockable compartments alongwith earth strip duly multi drilled and lockable loose wire box phosphatized and powder coated but without DP isolators complete in all respect (Provision for 10 Nos. DP isolators and Provision for 1no DP MCB for stair case/ common and provision for 1 no FP MCB in each box total 2 sets) in each block.
7.	Fan Box	►	As per requirement.
8.	Earthing	►	GI Pipe earthing with salt & charcoal.
9.	Connector	►	Porcelain.
10.	Staircase & common	►	One light point along with bulk head type CFL fitting including CFL in each main landing which shall be controlled from 2 nos. two way switches

alongwith circuit wiring through one no DP MCB.

11. Materials ► As per Guidelines for Selection of Material/Product for Internal Electrification work

12. Number of points/items in flats

(Refer Drawing)

Items	Nos
Light points/fan points / Exhaust points	10
Bell Point (Without buzzer)	1
Light plug points 5A	4
Power plug point, six pin 6A/16A	1
SP MCB (5 to 32amps)	4
40 A DP Isolater – No.	1
2 + 4 way single door MCB DB (consumer unit)	1

MODE OF PAYMENT FOR BUILDING WORK

(INTERNAL ELECTRIFICATION)

S.No		Individual	Cumulative
1.	Internal electrification (Walls conducting & fixing boxes for switches etc. i/c drawings of Fish Wire in conduits)		
	i) Ground Floor	7 %	7%
	ii) First Floor	7%	14%
	iii) Second Floor	7%	21%
	iv) Third Floor	7%	28%
	v) Fourth Floor	7%	35%
2.	Cubical Isolator Boxes and Earthings Etc.	5%	40%
3.	Wiring, fixing of sheets, switches, DB's & MCB's		
	i) Ground Floor	10%	50%
	ii) First Floor	10%	60%
	iii) Second Floor	10%	70%
	iv) Third Floor	10%	80%
	v) Fourth Floor	10%	90%
4.	Testing, commissioning and handing over	10%	100%

Note:- The work will broadly proceed as per the stages indicated above. However for work between two consecutive stages, the payment will be released for the lower stage. If some work is not executed as per the above sequence and later sequence is executed first, then the payment for that stage will be released at the discretion of the Engineer-in-Charge and his decision in this regard will be final and binding.

CONSTRUCTION OF LOW COST HOUSEING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN, DELHI [SH: 3380 DU's (G+4)] (package -II)
SCHEDULE OF QUANTITY FOR INTERNAL ELECTRICAL WORKS (FOR 20 DU's)

(FOR GUIDANCE ONLY)

SL NO	DESCRIPTION	unit	qty
1	Wiring for light point /fan point /exhaust fan point/call bell point with 1.5 sqmm FR pvc insulated copper conductor single core cable in surface / recessed pvc conduit, with piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sqmm FR pvc insulated copper conductor single core cable etc as required.)[group A]	each	223
2	Wiring for twin control point with 1.5 sqmm FR pvc insulated copper conductor single core cable in surface / recessed pvc conduit, 2 way piano type switch , ,phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sqmm FR pvc insulated copper conductor single core cable etc as required.	each	12
3	Wiring for light plug /power plug point with 2x4 sq mm FR pvc insulated copper conductor single core cable in surface/recessed pvc conduit along with 1 no 4 sqmm FR pvc insulated copper conductor single core cable for loop earthing as required.	mtr	200
4	S/F of metal box150 mmx75mmx60 mm deep [nominal size] on surface or in recess, with suitable size of phenolic laminated sheet cover in front including providing and fixing 3 pin 5/6 A piano socket out let and 5/6 A piano switch ,connection ,painting etc. as required	each	80
5	S/F of metal box180 mmx100mmx60 mm deep [nominal size] on surface or in recess, with suitable size of phenolic laminated sheet cover in front including providing and fixing 6 pin 5/6 A/15/16A piano socket out let and 15/16 A piano switch ,connection ,painting etc. as required	each	20
6	Wiring for circuit & sub main wiring along with earth wire with the following size of pvc insulated copper conductor ,single core cable in surface/recessed pvc conduit as required. [2x1.5 sqmm+1x1.5 sqmm]	mtr	800
7	Wiring for circuit & sub main wiring along with earth wire with the following size of pvc insulated copper conductor ,single core cable in surface/recessed pvc conduit as required. [2x6 sqmm+1x6 sqmm]	mtr	300

8	S/F metal box of following size [nominal size]on surface or recess with suitable size of phenolic laminated sheet cover in front including painting etc as required [75mmx75mmx60mm]	each	10
9	S/F 3pin 5 AMP ceiling rose on the existing junction box /wooden block including connections etc as required	each	69
10	Supplying & fixing brass angle/batten holder including connection etc. as required	each	100
11	S/F of following way SPN sheet steel ,MCB DB consumer unit 240 V on surface /recess , complete with tinned copper bus bar ,neutral bus bar , earth bar , din bar ,hinged front acrylic cover for the MCB knobs , detachable gland plate & interconnections ,phosphatized and powder painted including earthing etc [but without MCB/RCCB/ ISOLATOR] as required . [2+4WAY]	each	20
12	Supplying & fixing 5 A to 32 A rating ,240 V 'B ' series, miniature circuit breaker suitable for lighting and other loads of following poles in the existing MCB DB complete with connections ,testing and commissioning etc. as,required [Single pole]	each	80
13	Supplying & fixing 5 A to 32 A rating ,240 V 'B ' series, miniature circuit breaker suitable for lighting and other loads of following poles in the existing MCB DB complete with connections ,testing and commissioning etc. as.required [single pole& neutral]	each	1
14	Supplying and fixing following rating double pole 240 V ,isolator in the existing MCB DB complete with connections ,testing and commissioning etc. as required [40Amps]	each	40
15	Erection of wall bracket /ceiling fitting of all sizes and shapes containing up to two nos GLS lamp s as per fitting .complete with all accessories including connections etc .as required	each	9
16	Earthing with G.I. earth pipe 4.5m long 40 mm dia including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe with charcoal & salt complete as required.	set	2
17	Providing and fixing 25 mm x 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode as req.	mtr	9
18	Providing and fixing 25 mm x 5 mm G.I. strip on surface or in recess for earth connections as req.	mtr	9

19	Supplying and fixing of following size PVC conduit along with accessories, in surface/recess including cutting the slab/ wall& making good the same in case of recessed conduit as required [32 mm]	mtr	18
20	Fabrication, supplying, installation, testing and commissioning of cubical type isolator box fabricated with 2.0 mm thick CRCA sheet ,suitable provision for fixing of 12 nos 40 A DP isolator & 1 no 4 pole MCB with individual lockable compartments with lockable loose wire box, along with earth strip dully multi drilled ,phosphatized and powder coated but without DP isolator & MCB , complete in all respect.	sqm	0.72
21	Providing and fixing circular /hexagonal MS sheet ceiling fan box with clamp of internal dia 140 mm 73 mm height , top lid of 1.6 mm thick MS sheet with its top cover properly screwed . The clamp shall be made of 12 mm dia MS bar bent to suitable shape as required	each	40
22	Supply of Bulk head fitting -1x10w CFL ,IP 43 with cast aluminium body heat resistant glass cover and powder coated , along with 10/11 watt CFL Ref. cat no CG ICBH10 or equivalent make	each	9

Construction of Low Cost Housing for Urban Poor/Slum Rehabilitation at Tikri Kalan, Delhi.
Comprising of 8420 DU's (G+4) inPhase-1
(SH: C/o 3380 DU's (G+4) (Package-II)

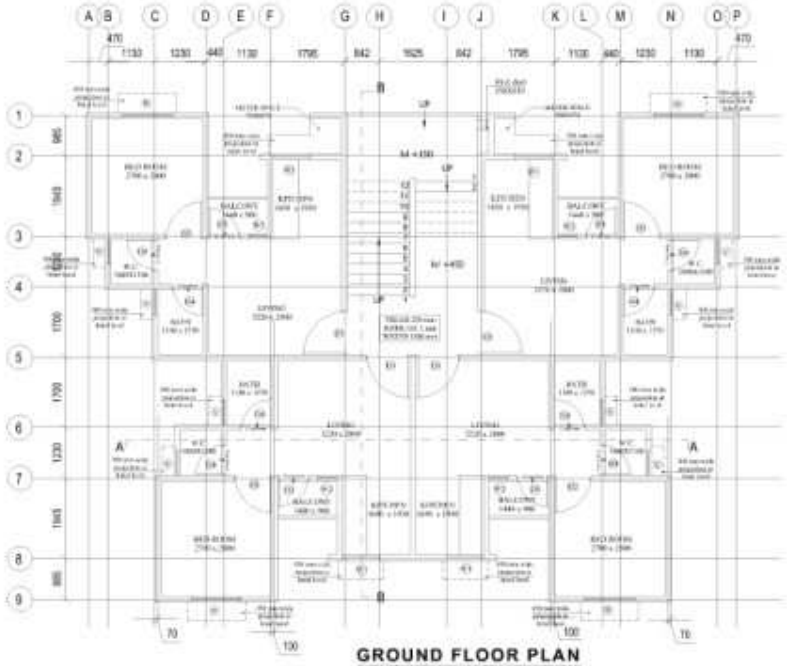
FINANCIAL BID (LUMP-SUM PRICE) (DWELLING UNITS ONLY)

Sl. No.	Description	Qty.	Unit	Rate	Amount
1	Complete civil work i/c internal water supply & sanitary installations Dwelling Units in G+4 blocks using RCC monolithic construction technology (Shear Wall), one dwelling unit comprises of one living room, one bed room, one kitchen, one WC, one bath room, balcony, common stairs. All complete as per drawings and specifications.	3380	Each DU's		
2.	Add or deduct on account of additional/lesser depth from NGL, it shall include all items to be executed below plinth level upto NGL as per drawings of particular blocks (average level of each cluster shall be considered).	-1559.494	Per Centimetre per Block of 20 DU's		
3.	Complete internal electrification of Dwelling Units in G+4 blocks, one dwelling unit comprises of one living room, one bed room, one kitchen, one WC, one bath room, balcony, common stairs. All complete as per drawings and specifications.	3380	Each DU's		


ARINEM
01
N
W
E
S
COMMUNITY CENTER
CREMATION GROUND
AREA ON HOLD
Total no of clusters-42
PACKAGE - 1
168 clusters
PACKAGE - 2
169 clusters
AREA ON HOLD
Total no of clusters-42
PACKAGE - 1
PLOT AREA - 163963.97 SQ. M. (25.42 ACRES)
AMENITIES AREA - 11637.94 SQ. M.
GROUND COVERAGE - 39805.8 SQ. M.
NO. OF CLUSTERS PROVIDED - 219
(42 CLUSTER IN NON ACQUIRED AREA)
PACKAGE - 2
PLOT AREA - 132713.47 SQ. M. (20.56 ACRES)
AMENITIES AREA - 7230.31 SQ. M.
GROUND COVERAGE - 31032.78 SQ. M.
NO. OF CLUSTERS PROVIDED - 211
(42 CLUSTER IN NON ACQUIRED AREA)
CLIENT
dsiidc
PROJECT NAME
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI
DRG. TITLE
DRG. NO.
ARINEM

ARINEM

04



GROUND FLOOR PLAN

AREA CHART		
REQ AREA AS PER NORMS		ACHIEVED FLOOR AREA
LIVING AREA	9.00 SQM	9.55 SQM
BEDROOM	9.00 SQM	7.56 SQM
KITCHEN	5.00 SQM	5.85 SQM
BATHROOM	1.20 SQM	1.32 SQM
W.C	0.9 SQM	1.00 SQM
BALCONY		1.20 SQM
CIRCULATION		1.37 SQM
TOTAL		28.05 SQM

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .

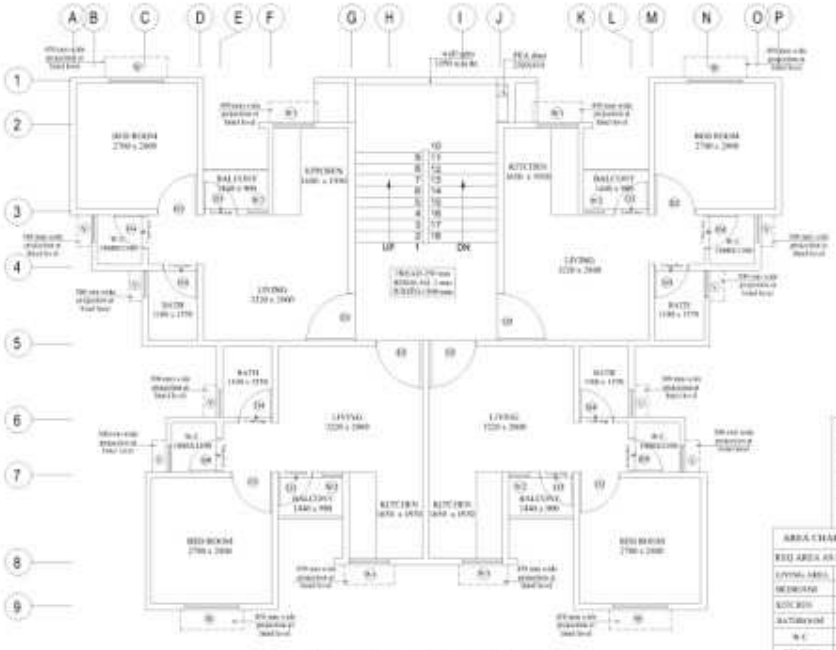
DRG. TITLE: GROUND FLOOR PLAN

DRG. NO:

ARINEM

ARINEM

05



TYPICAL FLOOR PLAN

AREA CHART		
REQ AREA AS PER NORMS		ACHIEVED FLOOR AREA
LIVING AREA	9.00 SQM	9.55 SQM
BEDROOM	9.00 SQM	7.56 SQM
KITCHEN	5.00 SQM	5.85 SQM
BATHROOM	1.20 SQM	1.32 SQM
W.C	0.9 SQM	1.00 SQM
BALCONY		1.20 SQM
CIRCULATION		1.37 SQM
TOTAL		28.05 SQM

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .

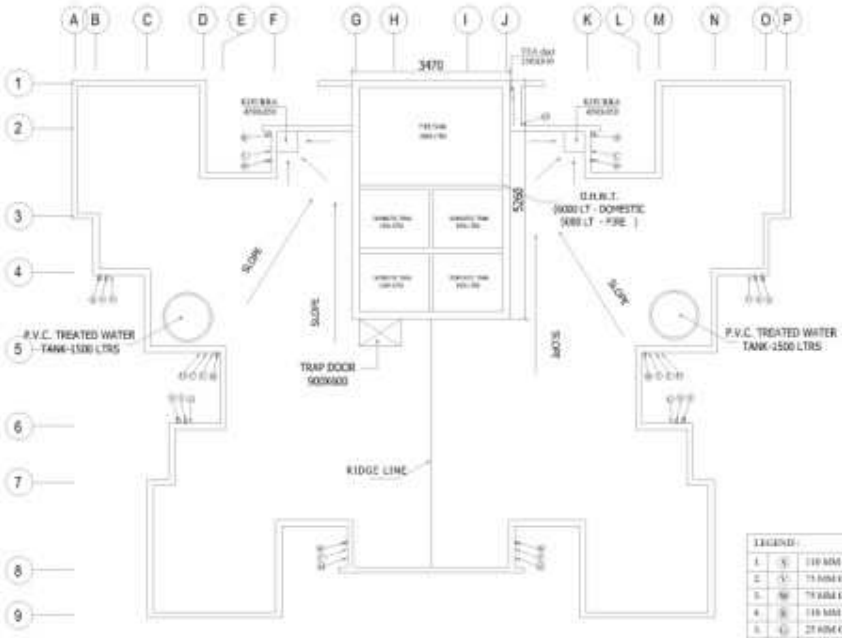
DRG. TITLE: TYPICAL FLOOR PLAN

DRG. NO:

ARINEM

ARINEM

06



TERRACE PLAN

LEGEND :			MATERIAL
1.	S	110 MM Ø SOIL PIPE	uPVC SWR
2.	V	75 MM Ø VENT PIPE	uPVC SWR
3.	W	75 MM Ø WASTE WATER PIPE	uPVC SWR
4.	R	110 MM Ø RAIN WATER PIPE	uPVC
5.	G	25 MM Ø TREATED WATER PIPE	PPR
6.	C	25 MM Ø COLD WATER PIPE	PPR
7.	F1	32 MM Ø COLD WATER FEED PIPE	PPR
8.	F2	32 MM Ø TREATED WATER FEED PIPE	PPR

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .

DRG. TITLE: TERRACE PLAN

DRG. NO.:

ARINEM

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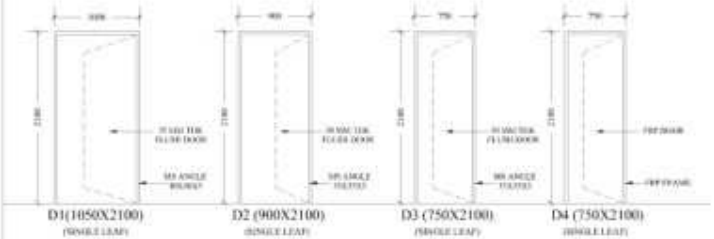
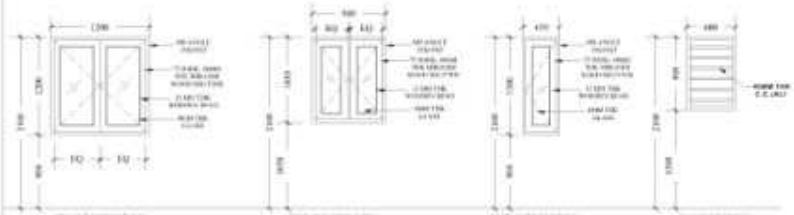
DOOR - WINDOW SCHEDULE (E.W.S.)

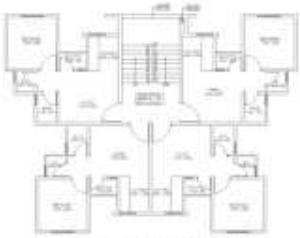
07



D1(1050X2100) (SINGLE LEAF)
D2 (900X2100) (SINGLE LEAF)
D3 (750X2100) (SINGLE LEAF)
D4 (750X2100) (SINGLE LEAF)



W(1200X1200)
W1(900X1050)
W2(450X1200)
V(600X900)



TYPICAL FLOOR PLAN

OPENING SCHEDULE

S. No.	TYPE	SIZE	SILL	LINTEL	REMARK
1.	D1	1050X2100	-	2100	ENTRANCE
2.	D2	900X2100	-	2100	BEDROOM
3.	D3	750X2100	-	2100	BALCONY
4.	D4	750X2100	-	2100	WC/BATH
5.	W	1200X1200	900	2100	BEDROOM
6.	W1	900X1050	1050	2100	KITCHEN
7.	W2	450X1200	150	2100	LIVING
8.	V	600X900	1200	2100	WC/BATH

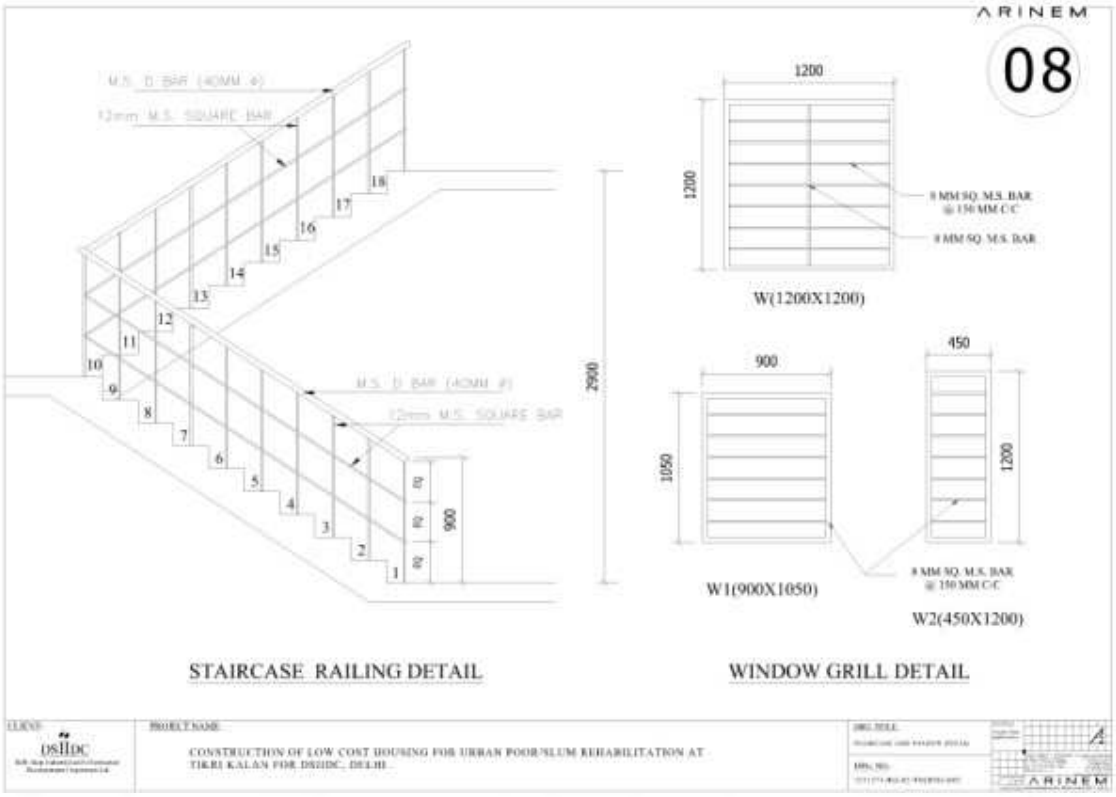
CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .

DRG. TITLE: DOOR & WINDOW DETAILS

DRG. NO.:

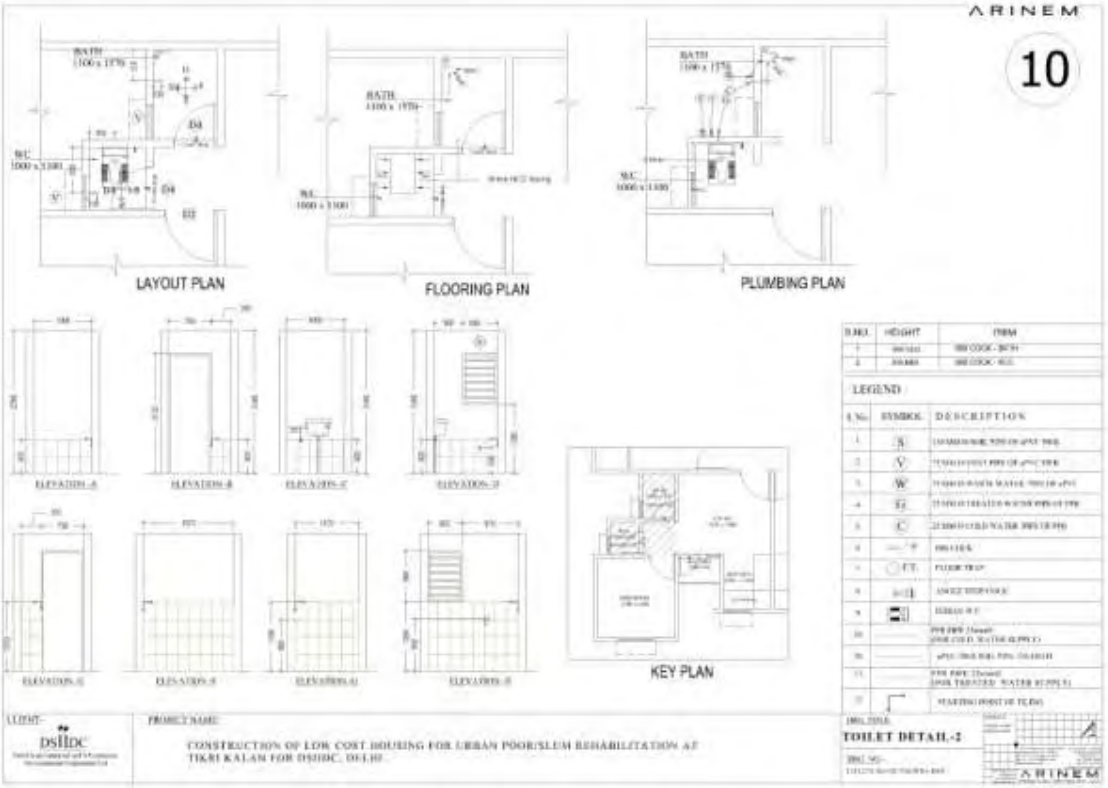
ARINEM


ARINEM
08
M.S. D BAR (40MM Ø)
12mm M.S. SQUARE BAR
M.S. D BAR (40MM Ø)
12mm M.S. SQUARE BAR
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
R2
R2
R2
900
2900
1200
1200
8 MM SQ. M.S. BAR @ 150 MM C/C
8 MM SQ. M.S. BAR
W(1200X1200)
900
1050
450
1200
8 MM SQ. M.S. BAR @ 150 MM C/C
W1(900X1050)
W2(450X1200)
STAIRCASE RAILING DETAIL
WINDOW GRILL DETAIL
CLIENT:
DSIIDC
PROJECT NAME:
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI.
ARINEM


ARINEM
09
W.C 1000 x 1100
BATH 1100 x 1570
LAYOUT PLAN
W.C 1000 x 1100
BATH 1100 x 1570
FLOORING PLAN
W.C 1000 x 1100
BATH 1100 x 1570
PLUMBING PLAN
ELEVATION -A
ELEVATION -B
ELEVATION -C
ELEVATION -D
ELEVATION -E
ELEVATION -F
ELEVATION -G
ELEVATION -H
KEY PLAN
S.NO
HEIGHT
ITEM
LEGEND :
S.No
SYMBOL
DESCRIPTION
CLIENT:
DSIIDC
PROJECT NAME:
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI.
TOILET DETAIL-1
ARINEM

ARINEM

10



CLIENT: DSIIDC

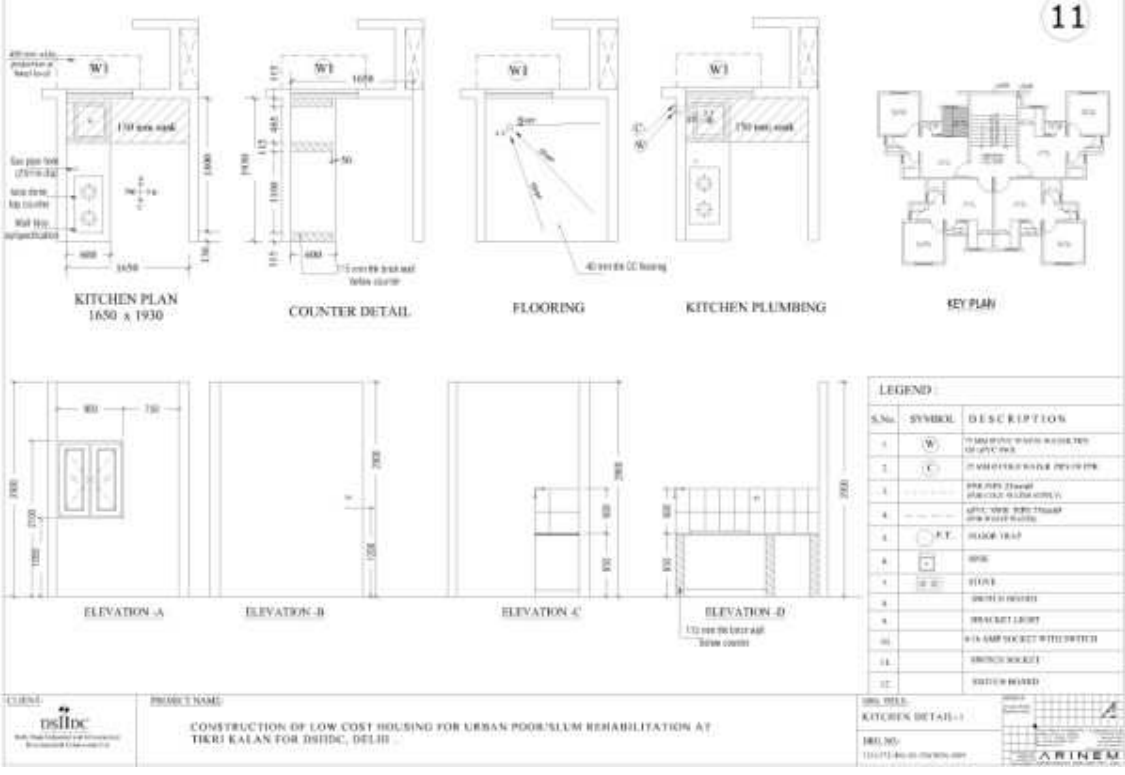
PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI

DRG. TITLE: **TOILET DETAIL-2**

ARINEM

ARINEM

11



CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI

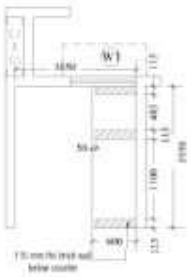
DRG. TITLE: KITCHEN DETAIL-1

ARINEM

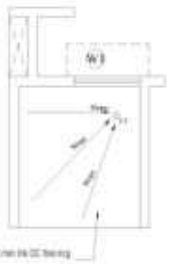
ARINEM

12

KITCHEN PLAN
1650 x 1930

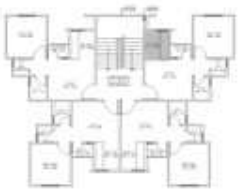


COUNTER DETAIL

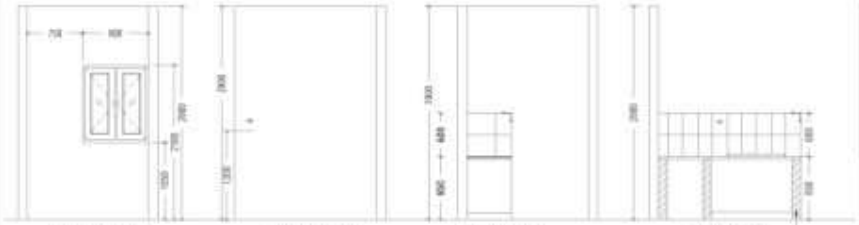


FLOORING

KITCHEN PLUMBING



KEY PLAN



ELEVATION -A ELEVATION -B ELEVATION -C ELEVATION -D

LEGEND :

S.No.	SYMBOL	DESCRIPTION
1.	W	
2.	C	
3.		
4.		
5.	F.T.	FLOOR TRAP
6.		SINK
7.		STOVE
8.		
9.		
10.		
11.		
12.		

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI

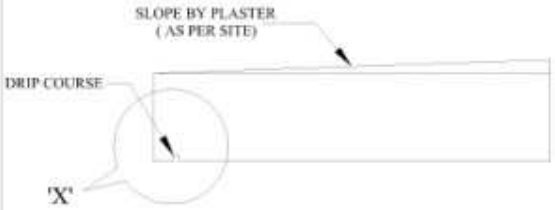
DRG. TITLE: KITCHEN DETAIL-2

DRG. NO.:

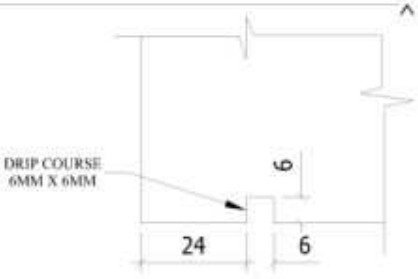
ARINEM

ARINEM

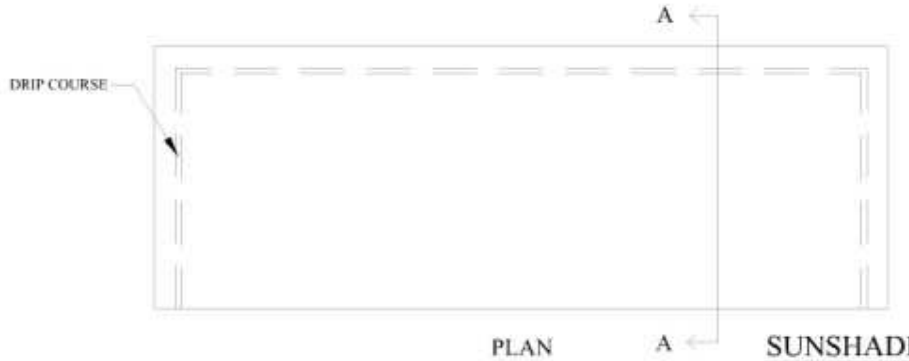
13



SECTION AA



DETAIL 'X'



PLAN

SUNSHADE DETAIL

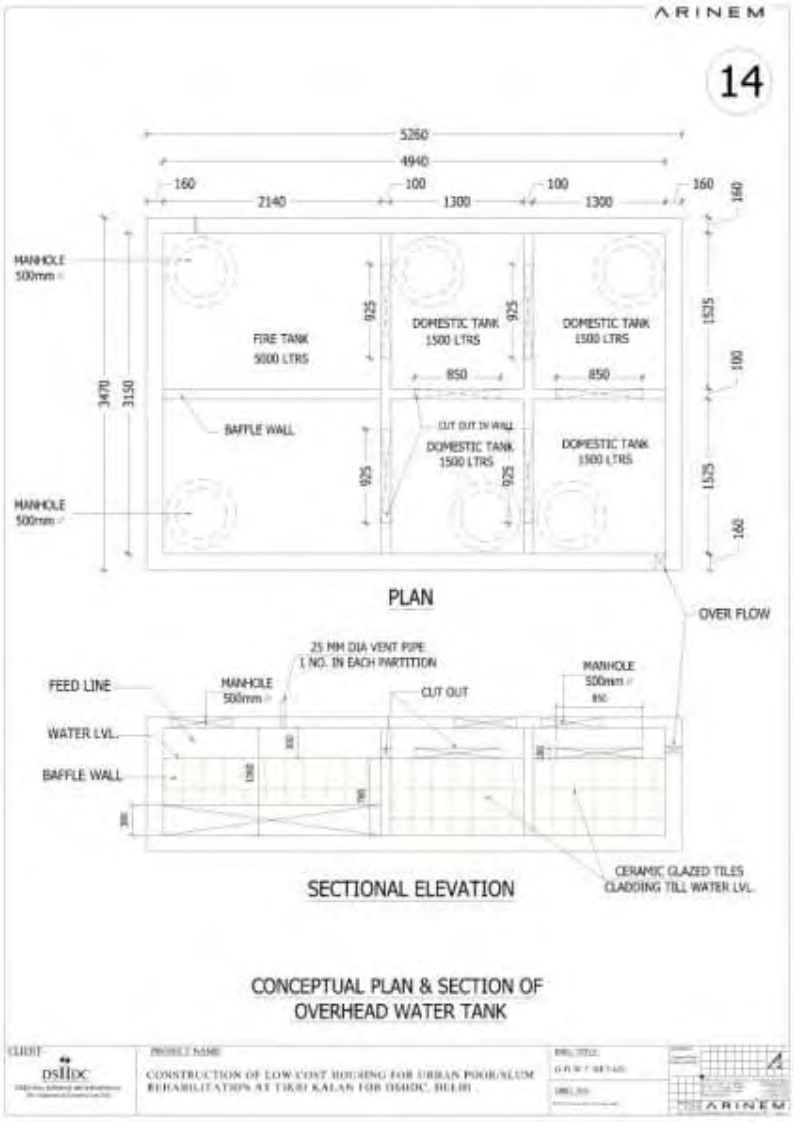
CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI

DRG. TITLE: SUNSHADE DETAIL

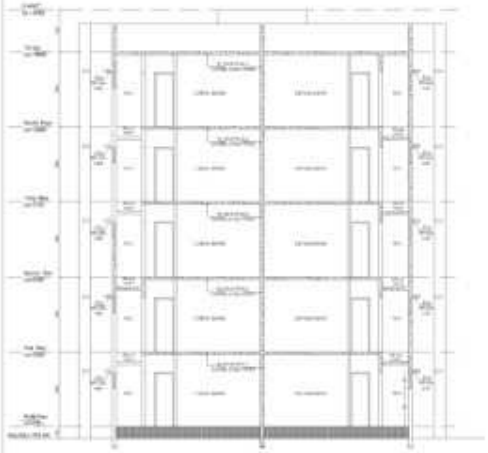
DRG. NO.:

ARINEM

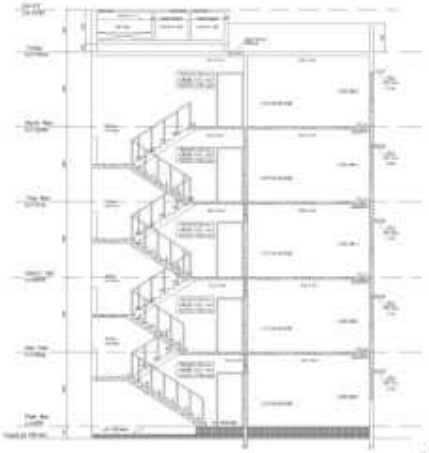

ARINEM
14
5260
4940
160
2140
100
1300
100
1300
160
160
MANHOLE
500mm
FIRE TANK
5000 LTRS
DOMESTIC TANK
1500 LTRS
DOMESTIC TANK
1500 LTRS
925
925
850
850
1525
100
1525
160
3470
3150
BAFFLE WALL
CUT OUT IN WALL
DOMESTIC TANK
1500 LTRS
DOMESTIC TANK
1500 LTRS
925
925
MANHOLE
500mm
PLAN
OVER FLOW
25 MM DIA VENT PIPE
1 NO. IN EACH PARTITION
FEED LINE
MANHOLE
500mm
CUT OUT
MANHOLE
500mm
WATER LVL.
BAFFLE WALL
CERAMIC GLAZED TILES
CLADDING TILL WATER LVL.
SECTIONAL ELEVATION
CONCEPTUAL PLAN & SECTION OF
OVERHEAD WATER TANK
CLIENT
DSIIDC
PROJECT NAME
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM
REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI
ARINEM

ARINEM

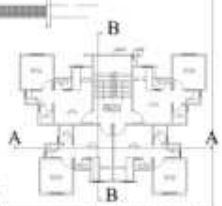
15



SECTION AA



SECTION BB



KEY PLAN

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI

DWG TITLE: SECTIONS

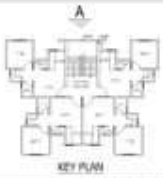
DWG NO:

ARINEM

ARINEM

16

ELEVATION SIDE 'A'



KEY PLAN

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI.

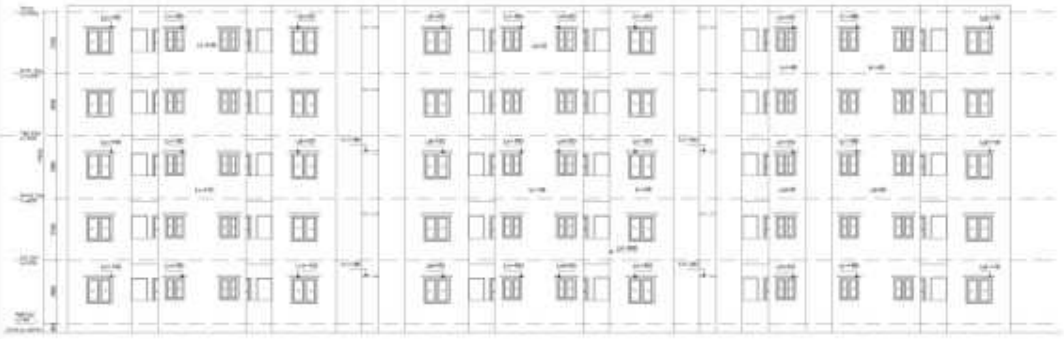
DWG TITLE: ELEVATION

DWG NO:

ARINEM

ARINEM

17



ELEVATION SIDE 'B'

B

KEY PLAN

CLIENT

DSIIDC

PROJECT NAME

CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .

DRG. TITLE

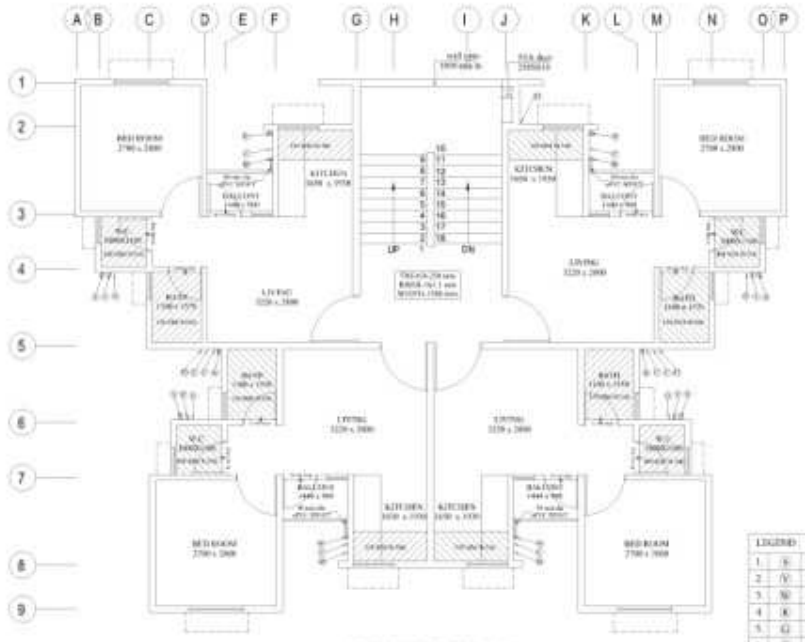
ELEVATION

DRG. NO.

ARINEM

ARINEM

18



SERVICE PLAN

LEGEND			MATERIAL
1.	S	110 MM Ø SOIL PIPE	uPVC SWR
2.	V	75 MM Ø VENT PIPE	uPVC SWR
3.	W	75 MM Ø WASTE WATER PIPE	uPVC SWR
4.	R	110 MM Ø RAIN WATER PIPE	uPVC
5.	G	25 MM Ø TREATED WATER PIPE	PPR
6.	C	25 MM Ø COLD WATER PIPE	PPR
7.	FT	32 MM Ø COLD WATER FEED PIPE	PPR
8.	FT	32 MM Ø TREATED WATER FEED PIPE	PPR

CLIENT

DSIIDC

PROJECT NAME

CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .

DRG. TITLE

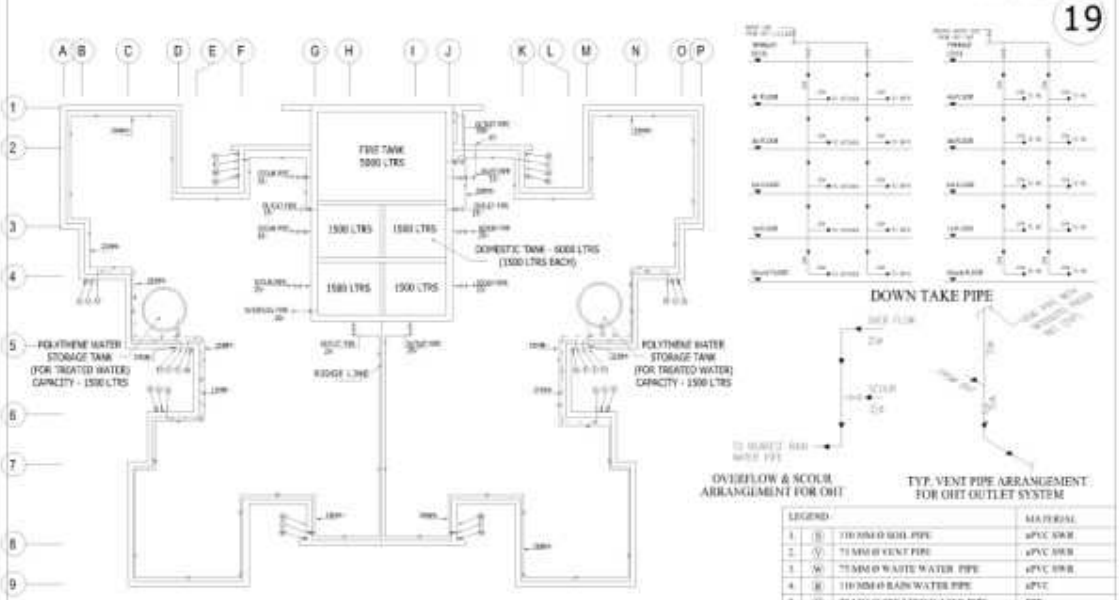
SERVICE PLAN

DRG. NO.

ARINEM

ARINEM

19



TERRACE PLAN SHOWING (OVER HEAD WATER TANK)

DOWN TAKE PIPE

OVERFLOW & SCOUR ARRANGEMENT FOR OHT

TYP. VENT PIPE ARRANGEMENT FOR OHT OUTLET SYSTEM

LEGEND			MATERIAL
1.	R	110 MM Ø RISE PIPE	uPVC SWR
2.	V	75 MM Ø VENT PIPE	uPVC SWR
3.	W	75 MM Ø WASTE WATER PIPE	uPVC SWR
4.	R	110 MM Ø RAIN WATER PIPE	uPVC
5.	G	25 MM Ø TREATED WATER PIPE	PPR
6.	C	25 MM Ø COLD WATER PIPE	PPR
7.	F1	32 MM Ø COLD WATER FEED PIPE	PPR
8.	F2	32 MM Ø TREATED WATER FEED PIPE	PPR
9.	---	GATE WALL	
10.	⊙	INDICATES RISE / DROP	

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI.

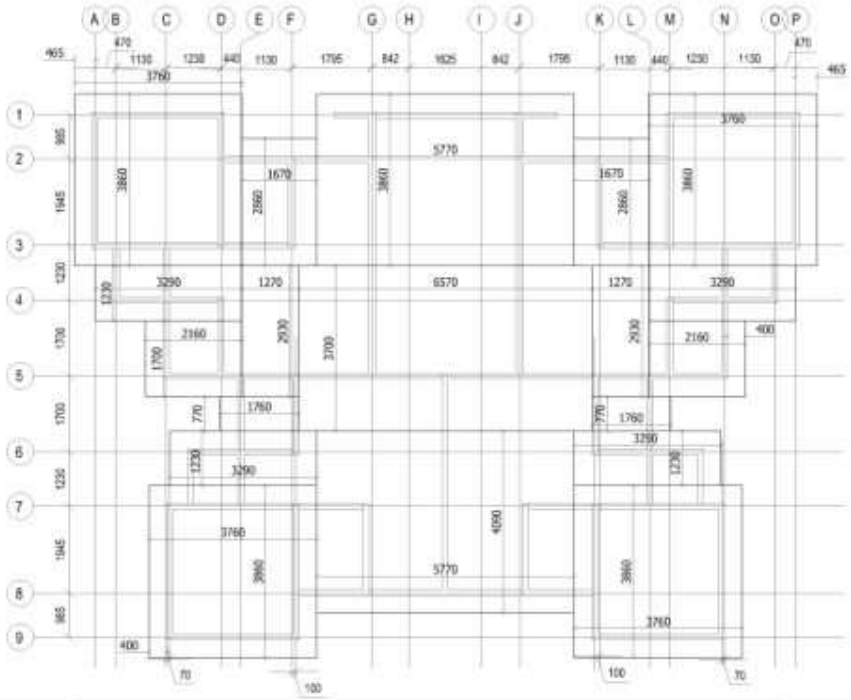
DRG. TITLE: TERRACE PLAN (G.W.T.)

DRG. NO:

ARINEM

ARINEM

20



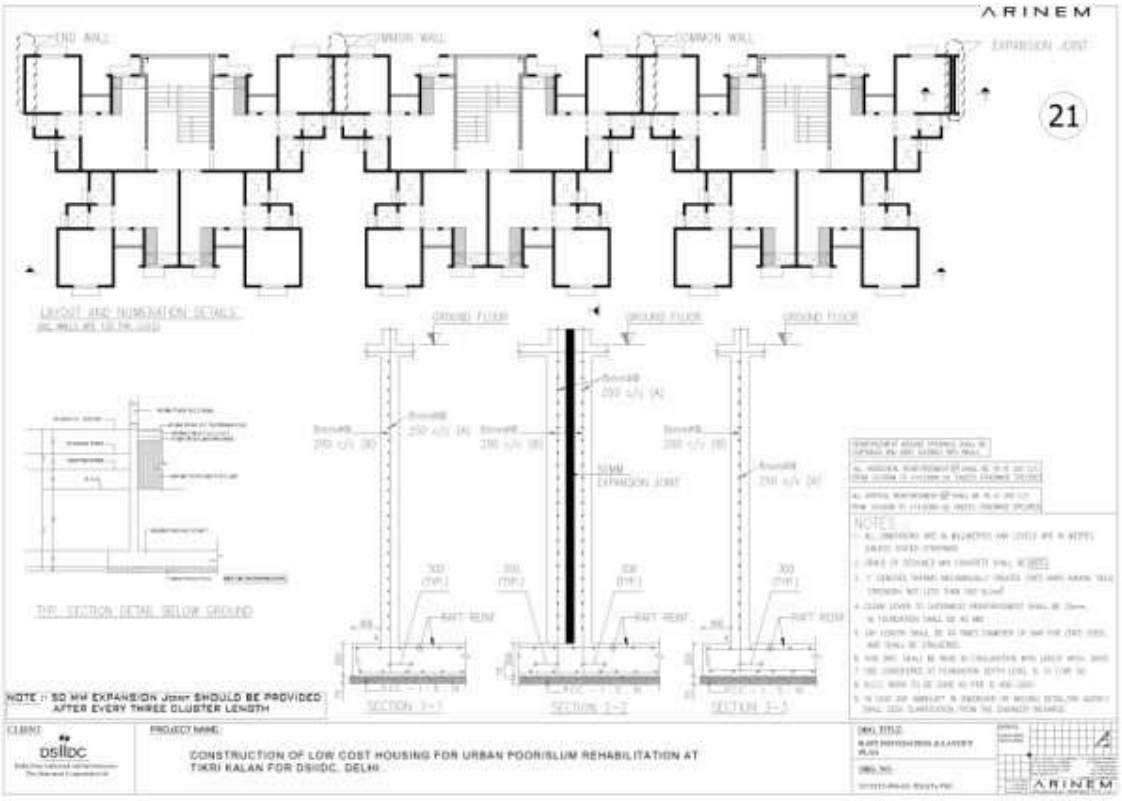
CLIENT: DSIIDC

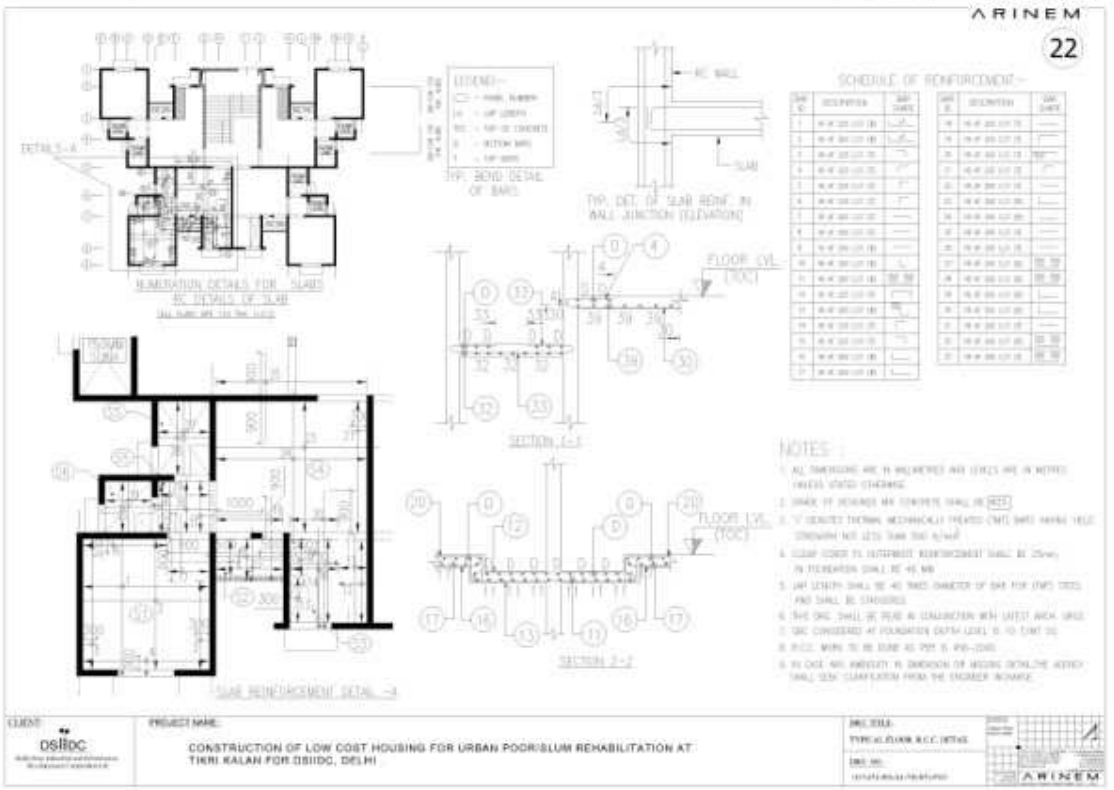
PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI.

DRG. TITLE: TRENCH LAYOUT PLAN

DRG. NO:

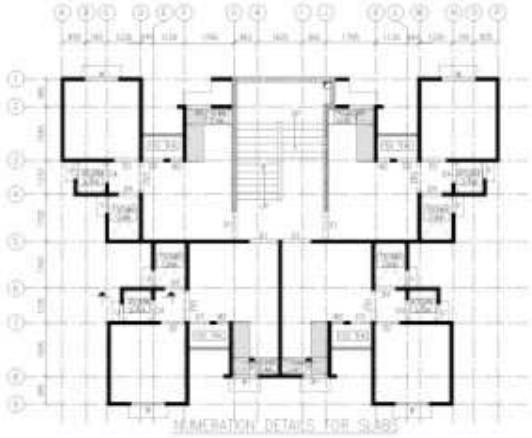
ARINEM


ARINEM
21
END WALL
COMMON WALL
COMMON WALL
EXPANSION JOINT
LAYOUT AND NUMERATION DETAILS
GROUND FLOOR
GROUND FLOOR
GROUND FLOOR
SOMM EXPANSION JOINT
TYP. SECTION DETAIL BELOW GROUND
SECTION 1-1
SECTION 2-2
SECTION 3-3
NOTE :- 50 MM EXPANSION Joint SHOULD BE PROVIDED AFTER EVERY THREE CLUSTER LENGTH
NOTES
CLIENT
DSIIDC
PROJECT NAME
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .
ARINEM

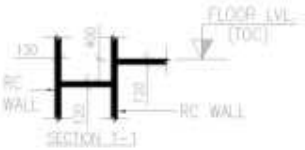

ARINEM
22
LEGEND :-
TYP. BEND DETAIL OF BARS
TYP. DET. OF SLAB REINF. IN WALL JUNCTION (ELEVATION)
SCHEDULE OF REINFORCEMENT :-
NUMERATION DETAILS FOR SLABS W.R.T. DETAIL OF SLAB
SLAB REINFORCEMENT DETAIL -1
SECTION 1-1
SECTION 2-2
FLOOR LVL. (TOC)
NOTES :
CLIENT
DSIIDC
PROJECT NAME
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI
ARINEM

ARINEM

23



NUMERATION DETAILS FOR SLABS



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. GRADE OF DESIGNED RCC CONCRETE SHALL BE M25.
3. 'Y' DENOTES THERMO MECHANICALLY TREATED (TMT) BARS HAVING YIELD STRENGTH NOT LESS THAN 500 N/mm².
4. CLEAR COVER TO OUTERMOST REINFORCEMENT SHALL BE 25mm. IN FOUNDATION SHALL BE 40 MM.
5. LAP LENGTH SHALL BE 40 TIMES DIAMETER OF BAR FOR (TMT) STEEL AND SHALL BE STAGGERED.
6. TMT BRS. SHALL BE USED IN CONJUNCTION WITH LATEST ARCH. DRGS.
7. SBC CONSIDERED AT FOUNDATION DEPTH LEVEL IS 15 T/MT SQ.
8. R.C.C. WORK TO BE DONE AS PER IS 456-2000.
9. IN CASE ANY AMBIGUITY IN DIMENSION OR MISSING DETAILS THE AGENCY SHALL SEEK CLARIFICATION FROM THE ENGINEER INCHARGE.

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .

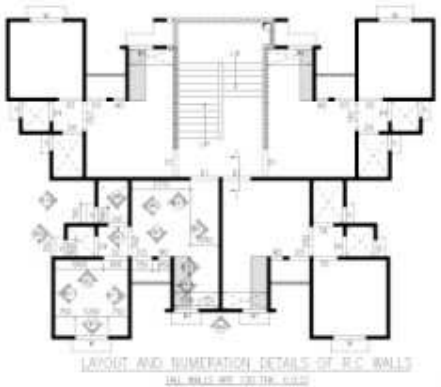
DRG TITLE: NUMERATION DETAILS FOR SLABS

DRG NO.:

ARINEM

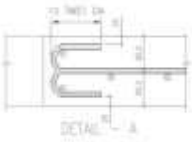
ARINEM

24

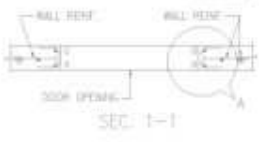


LAYOUT AND NUMERATION DETAILS OF R.C. WALLS

TYPICAL RC WALL ELEVATION



DETAIL 'A'



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. GRADE OF DESIGNED RCC CONCRETE SHALL BE M25.
3. 'Y' DENOTES THERMO MECHANICALLY TREATED (TMT) BARS HAVING YIELD STRENGTH NOT LESS THAN 500 N/mm².
4. CLEAR COVER TO OUTERMOST REINFORCEMENT SHALL BE 25mm. IN FOUNDATION SHALL BE 40 MM.
5. LAP LENGTH SHALL BE 40 TIMES DIAMETER OF BAR FOR (TMT) STEEL AND SHALL BE STAGGERED.
6. TMT BRS. SHALL BE USED IN CONJUNCTION WITH LATEST ARCH. DRGS.
7. SBC CONSIDERED AT FOUNDATION DEPTH LEVEL IS 15 T/MT SQ.
8. R.C.C. WORK TO BE DONE AS PER IS 456-2000.
9. IN CASE ANY AMBIGUITY IN DIMENSION OR MISSING DETAILS THE AGENCY SHALL SEEK CLARIFICATION FROM THE ENGINEER INCHARGE.

CLIENT: DSIIDC

PROJECT NAME: CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI .

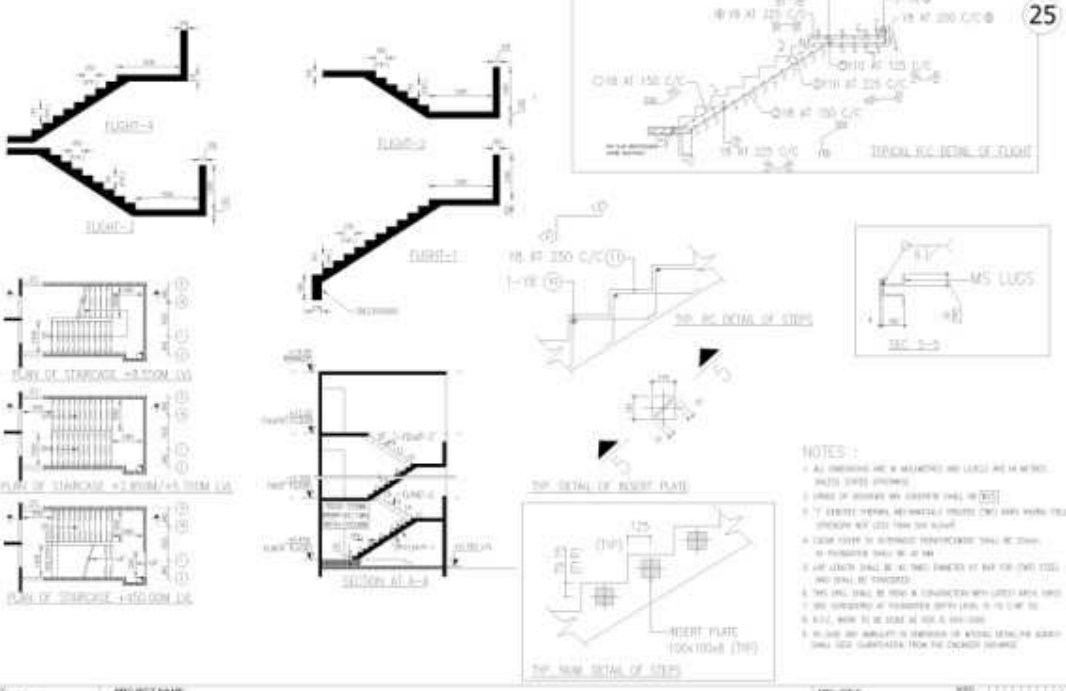
DRG TITLE:

DRG NO.:

ARINEM

ARINEM

25



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. GRADE OF CONCRETE SHALL BE M25.
3. 'Y' GRADED THERMO MECHANICALLY TREATED (TMT) BARS HAVING YIELD STRENGTH NOT LESS THAN 500 N/mm².
4. CLEAR COVER TO OUTERMOST REINFORCEMENT SHALL BE 25mm.
5. LAP LENGTH SHALL BE 40 TIMES DIAMETER OF BAR FOR (TMT) STEEL AND SHALL BE STAGGERED.
6. R.C.C. WORK TO BE DONE AS PER IS 456-2000.

CLIENT :
DSIIDC

PROJECT NAME :
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI

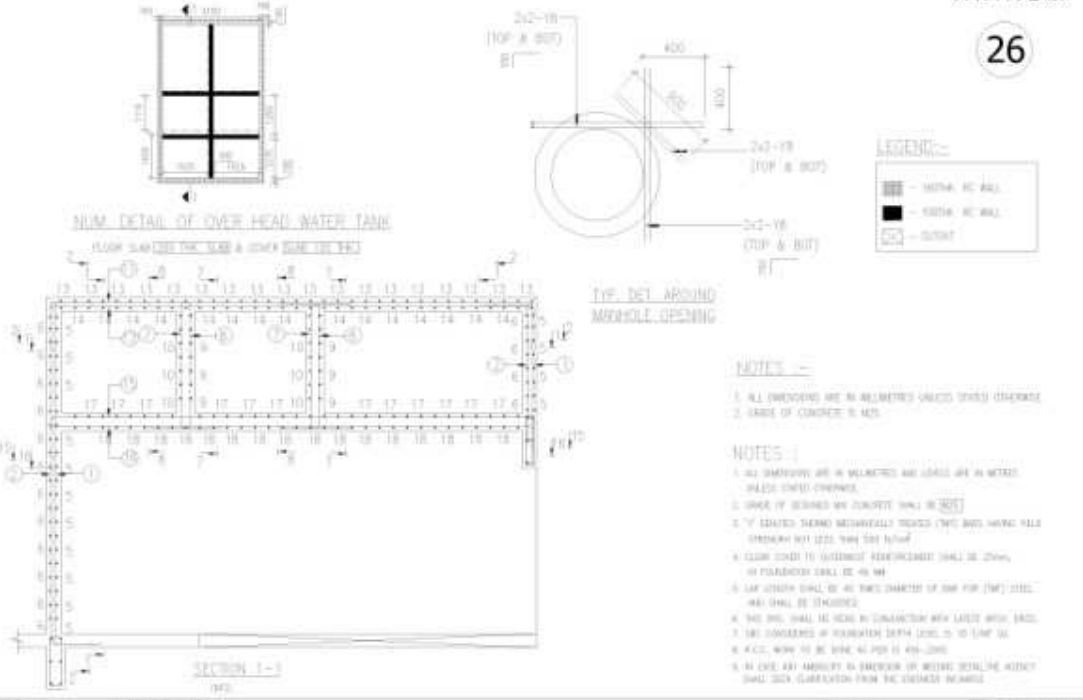
DRG. TITLE :
STAIRCASE DETAIL

DRG. NO. :

ARINEM

ARINEM

26



NUM. DETAIL OF OVER HEAD WATER TANK

NOTES :-

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
2. GRADE OF CONCRETE IS M25.

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS STATED OTHERWISE.
2. GRADE OF DESIGNED MIX CONCRETE SHALL BE M25.
3. 'Y' GRADED THERMO MECHANICALLY TREATED (TMT) BARS HAVING YIELD STRENGTH NOT LESS THAN 500 N/mm².
4. CLEAR COVER TO OUTERMOST REINFORCEMENT SHALL BE 25mm.
5. LAP LENGTH SHALL BE 40 TIMES DIAMETER OF BAR FOR (TMT) STEEL AND SHALL BE STAGGERED.
6. R.C.C. WORK TO BE DONE AS PER IS 456-2000.

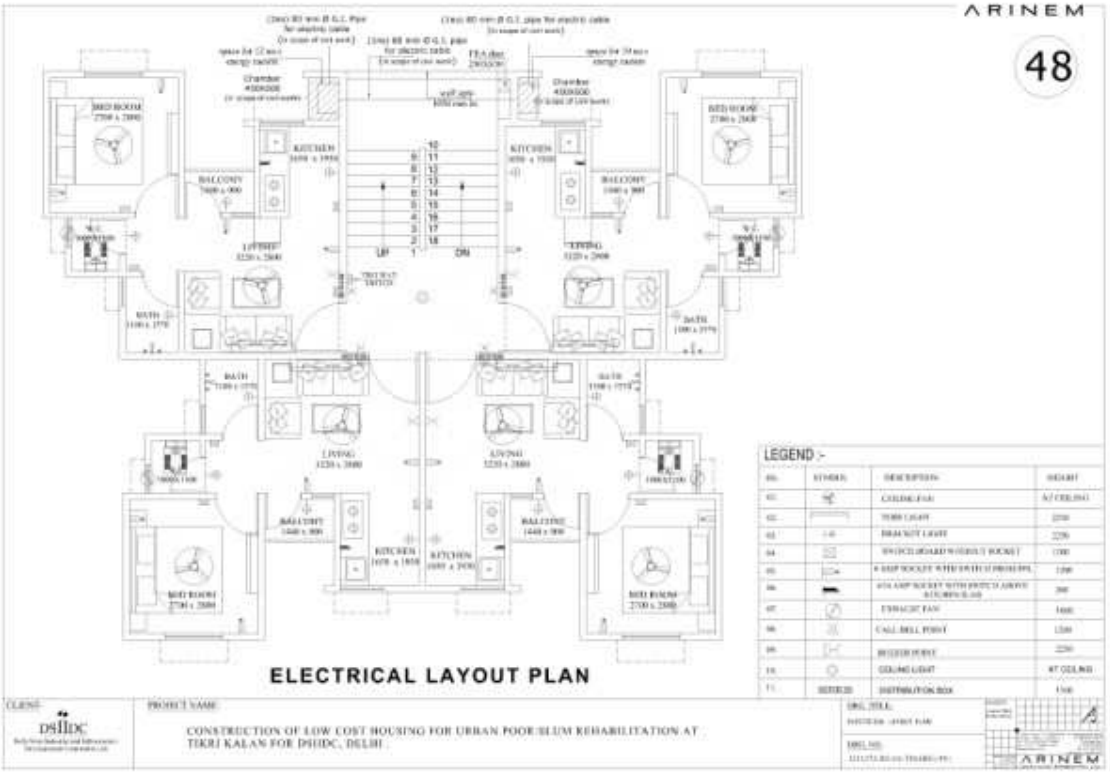
CLIENT :
DSIIDC

PROJECT NAME :
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR/SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI

DRG. TITLE :
ROOF DETAIL OF O.H.W.T.

DRG. NO. :

ARINEM


ARINEM
48
ELECTRICAL LAYOUT PLAN
LEGEND :-
CONSTRUCTION OF LOW COST HOUSING FOR URBAN POOR SLUM REHABILITATION AT TIKRI KALAN FOR DSIIDC, DELHI
ARINEM