

AGRICULTURAL PRODUCE MARKETING COMMITTEE
MARKET OF NATIONAL IMPORTANCE
NEW OFFICE COMPLEX, NFM- PH-II, SARAI PIPAL THALLA, AZADPUR,
DELHI-33

Name of work: Improvement of lanes and by lanes, ramps etc. including sewer and storm water drainage system in A and D block NSM, Azadpur.

ITEM RATE TENDER AND CONTRACT FOR WORKS

INDEX

S. No.	Description	Page No.
i)	NIT for website	2
ii)	Notice Inviting Tenders (APMC, AZADPUR-6)	3-10
iii)	Description of NIT (PWD-8)	11-18
iv)	General and Salient Points	19-22
v)	General Conditions	23-31
vi)	Additional General Conditions	32-35
vii)	Special Conditions for Cement and HDPE Pipes	36-40
viii)	Particular specifications for concrete, R.C.C. work and other conditions for execution of work	41-52
ix)	List of approved make for civil work	53
x)	Correction slip	54
xi)	Annexures	55-58
xii)	Confirmation	59
xiii)	Schedule of Quantities	60-66

This NIT contains 66 pages marked as Sl. No. 1 to 66

Executive Engineer
APMC, Azadpur

AGRICULTURAL PRODUCE MARKETING COMMITTEE
MARKET OF NATIONAL IMPORTANCE
NEW OFFICE COMPLEX, NFM- PH-II, SARAI PIPAL THALLA, AZADPUR,
DELHI-33

NOTICE OF E-TENDERING

Item rate e-tenders are invited for the under mentioned works on behalf of Secretary, Agricultural Produce Marketing Committee, Azadpur and opened online in the office of Secretary, APMC, Azadpur.

S.No.	Tender ID	Name of Work	Estimated Cost/ Earnest money (In Rupees)	Last Date and Time
1	2018_DAMB_	Improvement of lanes and by lanes, ramps etc. including sewer and storm water drainage system in A and D block NSM, Azadpur	<u>3,07,31,724/-</u> 6,15,000/- Time Allowed: 09 Months	To be Uploaded Tender on 08/08/2018 upto 1300Hrs.
				Opening of Technical Bid 08/08/2018 on 1500Hrs.
				Opening of financial Bid to be intimated separately on website

Date of release of tender through e-procurement solution: 11/07/2018

Further details can be seen at website <https://govtprocurement.delhi.gov.in>

Executive Engineer
APMC Azadpur

AGRICULTURAL PRODUCE MARKETING COMMITTEE
MARKET OF NATIONAL IMPORTANCE
NEW OFFICE COMPLEX, NFM- PH-II, SARAI PIPAL THALLA, AZADPUR,
DELHI-33

1.0 NOTICE INVITING TENDER

1.1 Item rate tender is invited through Delhi Govt. e-procurement website <https://govtprocurement.delhi.gov.in> on behalf of the Secretary, APMC, Azadpur, by Executive Engineer, APMC, Azadpur, Delhi-110033 for under mentioned work from approved and eligible contractors of CPWD & those on appropriate list of MES, Railways, P & T, DDA, NDMC, MCD, I&FC Deptt. (Delhi), DJB.

N/ W: - Improvement of lanes and by lanes, ramps etc. including sewer and storm water drainage system in A and D block NSM, Azadpur

The enlistment of the contractor's should be valid on the last date of uploading the tender.

In case on last date of uploading the tender is extended, the enlistment of contractors/vendors should be valid on original date of submission of tender.

1.2 The work is estimated to cost Rs. 3,07,31,724/-.

1.3 Criteria for eligibility.

Only those agencies shall be eligible for tender who Submit definite proof of following:-

1.3.1 Having successfully completed similar works during the last 7 years ending 31/07/2018.

a. Three similar completed work, costing not less than the amount equal to Rs. 123.00 Lakhs

i. Or

b. Two similar completed works, costing not less than the amount equal to Rs. 184.40 Lakhs

i. Or

c. One similar completed work of aggregate cost not less than the amount equal to Rs. 246.00 Lakhs

“Similar work means “The work of construction of sewers line/ drains/ road works”. Having successfully completed similar works during the last 7 years .

The eligible contractor must have executed at least one similar work (either part of above or a separate one) with some Central/State Govt./Central Autonomous body/ Central Public Sector undertaking. In case the work experience in private

sector the completion certificate shall be submitted along with corresponding TDS certificate. Value of work will be considered equivalent to the amount of TDS certificate.

The value of 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 last date of receipt of tender.

- (i) PAN card.
- (ii) Registration certificate under GST
- (iii) RTGS/NEFT Challan

1.4 Technical & Financial bid shall be uploaded simultaneously. Only documents required for Technical Bid be uploaded under Technical Bid Part and Financial Bid shall only be uploaded under Financial Bid Part.

Technical Bid shall be uploaded through E-tendering with scanned copies of:-

- (i) RTGS/NEFT Challan for Rs. 6,15,000/- (Rupees Six Lakhs Fifteen Thousand Only)
- (ii) Valid **Registration Certificate** of appropriate category.
- (iii) Work experience certificates*.
- (iv) PAN card.
- (v) Registration certificate under GST
- (vi) An affidavit duly notarised that upto date GST returns have been filed and agency has no dues towards GST with acknowledgment of latest copy of return filed.
- (vii) Affidavit duly notarised regarding non execution of similar work on back to back basis as elaborated under clause 5 of next page.
- (viii) Affidavit duly notarised regarding Self declaration that firm has not blacklisted or abandoned as per details herein under tender.
- (ix) Scanned copy of canceled cheque of the agency for refund the EMD
- (x) Any other documents specified in the tender document.
- (xi) An Earnest Money Deposit (EMD) of Rs. 6,15,000/- (Rupees Six Lakhs Fifteen Thousand Only) should be remitted by RTGS /NEFT Challan in favour of APMC, Azadpur, Account No.50276843057 of (Allahabad Bank Azadpur). IFSC Code: ALLA0210711, MICR Code 110010004.

Note :- (i) Agency shall enclose/upload all requisite papers/ under taking (on non judicial stamp paper of Rs. 50/- each). In the event of failure to enclose/upload above, bid of the participating firm shall not be considered for Technical Evaluation.

(ii) No Financial Bid/ Rate be given under Technical Bid. In case if any agency upload financial Bid/ rate with above Technical Bid documents, his bid shall not be considered for Technical Evaluation and his tender shall be treated as invalid.

(iii) The tenderer shall require to produce definite proof from the appropriate authority, in line with the above eligibility criteria and it should be to the satisfaction of competent authority of having satisfactorily completed similar work of magnitude specified above. Work executed with private sector, be supported by TDS certificates.

(iv) Only scanned and uploaded documents through E-tendering process shall be considered for eligibility. No other document later on submitted manually shall be considered. The tenderer shall have no claim on this account afterwards.

1.5 “I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, If such a violation comes to the notice of Department, then I/we shall be debarred for tendering in APMC, AZADPUR in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/ Performance Guarantee.”

1.6 Scope of work:

1. Relying of Sewer Lines with HDPE Pipe (manually) of different diameters like 160 mm, 355 mm & 450 mm as per the requirement/ supporting calculations as per discharge.
- 2 Construction of open surface storm water drain at both sides of each lane to accommodate the storm water of catchment area, covered with precast SFRC perforated drain covers with frame (M25) in size 500x400x75 mm.
- 3 Relying of Sewer Lines with HDPE Pipe by trenchless method wherever required specially to make connection with main truck lines beneath road surface so that the existing road surface does not get disturbed for smooth traffic management.
- 4 Construction of manholes at required spacing.
- 5 Construction of lanes by providing and lying RMC M-25 over sub base laid in 1:4:8 (cement: 4coarse sand: 8 stone aggregate).

1.7 The contractors/ agencies are required to fulfill the provisions of PF Act (under EPF Scheme) and other Labour Laws as applicable time to time.

1.8 Agreement shall be drawn with the successful tenderer on prescribed PWD 8 Form which is available with APMC, Azadpur office. Tenderer shall quote his rates as per various terms and conditions of the said form, which will form part of the agreement.

1.9 Time of completion of this work shall be 09 Months from the date of start as defined in schedule “F” i.e. 10th day from issue of letter of acceptance.

The Contractors are advised to inspect and examine the site and its surroundings and satisfy themselves with the nature of site, the means of access to the site, the constraints of space for stacking material machinery, labour etc.

they shall acquaint the conditions of APMC, Azadpur before tendering, no claim whatsoever themselves with shall be entertained thereafter.

It shall be responsibility of contractor to erect barricading to avoid encroachment by daily visiting vendors at the working site, arrangement of light or generator at his own cost & access to transport material to the site from due to heavy traffic congestion and the weather condition due to rain in monsoon season & it's after effects. No claim whatsoever on account of aforesaid reason shall be entertained including grant of extension of time for delay etc.

The contractor shall deemed to have inspected the site of work and acquainted himself with the site conditions and surroundings including access to the site for transportation of his men and material to the site of work. The department in no way shall be responsible or entertain any claim whatsoever on account of having not inspected site. The general conditions, specific conditions, particular conditions given in the contract are exhaustive but should not be construed to be conclusive any short fall / omission which is necessary for successful completion of the work as per specification shall deemed to have been included in the contract and no claim whatsoever shall be entertained by the department.

It is presumed that the Contractor shall satisfy himself for all possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies. **Nothing extra shall be payable on this account and also no extension of the contract on this account.**

- 1.10** The site for the work is partly available.
- 1.11** Tender documents consisting of plans, specifications, the schedule of quantities of the various classes of work to be done and the set of terms and conditions of contract to be complied with by the contractor from whose tender may be accepted and other necessary documents can be seen in the office of the Executive Engineer APMC, Azadpur, Market Of National Importance Delhi-110033 between 11.00 hours & 15.00 hours of upto 08/08/2018 except on Sundays and Public Holidays. Tender documents is available on web site <https://govtprocurement.delhi.gov.in>
- 1.12** The documents uploaded by the bidders shall be got verified from originals from 4:00 PM of 08/08/2018 to 2:00 PM of 3001/2017 in the office of Engineer-in-charge.

1.13 Submission of tender through e-procurement will be stopped on **08/08/2018 at 13.00** hours and only technical bid will be opened on the same day at **15.00** hours *and result of technically qualified tendered will be displayed on web site <https://govtprocurement.delhi.gov.in> which can be seen by all the tenderers who participated in the process. Information of which shall also be sent to the bidders through e-mail.*

1.14 *The financial bids of only eligible tenderers who have deposited EMD through RTGS/NEFT Challan for Rs. 6,15,000/- (Rupees Six lakhs Fifteen Thousand Only) other documents to the satisfaction of competent authority of APMC, Azadpur and who got verified the documents with originals and have technically qualified , shall only be opened on 08/08/2018 at 15.00 hours. and financial bid shall be opened date to be intimated separately on website.*

1.15 The Contractor, whose tender is accepted, will be required to furnish performance guarantee @ 5% of tendered amount for his proper performance of contract for the period of completion + three months i.e. for a total period of 1 year.

The performance guarantee shall be in the form call deposit receipt /Demand Draft/ Fixed deposit receipt of any Scheduled Bank or the State Bank of India in accordance with the prescribed form.

These performance guarantee shall required to submit within the period specified under schedule “F”. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule ‘F’. including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor..

1.16 All the approved design and drawings for this work are available in the Office of Executive Engineer and the contractor can inspect the drawings in the Office of Executive Engineer, APMC, Azadpur on any working day between 11.00 A.M. to 4.00 P.M. except Sunday & public holidays. The approved design and drawings have been prepared with the existing requirement of the department but any change in the design and drawing subsequently required as per site condition can be incorporated in the design and drawings. The contractor shall be duty bound to execute the work as per the revised / modified design and drawing and nothing extra whatsoever shall be payable for execution of work as per modified drawings. The tenderer shall be responsible for arranging and maintaining at his 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 tender by a tenderer implies that he has gone through and all other contract documents and has made himself aware of the scope of work and specifications/ condition of the work to be done. **The rate quoted by contractor should be inclusive all operation required for successful execution of work and all taxes/ octroi etc. deemed to be included in the rates quoted by him.**

Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.

1.17 The competent authority on behalf of Secretary, APMC, Azadpur reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rate quoted.

1.18 In case of any difference / ambiguity between English & Hindi versions, English version shall prevail.

1.19 The 5% security deposit as defined under GCC-2014 shall be deducted from total value of work done and shall be refunded as per GCC 2014.

The contractor shall not be permitted to tender for works in the APMC, Azadpur (responsible for award and execution of contracts) who's near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Secretary, APMC, Azadpur 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 the Agricultural Produce Marketing Committee, Azadpur. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this department. **The contractor shall give a list of both Gazetted and non-gazetted APMC, AZADPUR employees related to him.**

1.20 No Engineer of gazetted rank or other gazetted officer employed in Engineering or Administrative duties in an Engineering Department of the APMC, AZADPUR is allowed to work as a contractor for a period of one year after his retirement from Government service, without the previous permission of the Secretary, APMC, Azadpur in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of the Secretary, APMC, Azadpur as aforesaid before uploading of the tender or engagement in the contractor's service.

1.21 The tender for the work shall remain open for acceptance for a period of one twenty **(120) days** from the date of opening of tender's technical bid. If any tenderer withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier or makes any modifications in the terms and conditions of the tender 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.

Further, the tenderer shall not be allowed to participate in the re-tendering process of the work.

- 1.22** This Notice inviting tender shall form a part of the contract document. The successful tenderer / contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of: -
- 1.22.1 The Notice Inviting Tender, all the PWD form /tender documents including all conditions, specifications with up to date correction slips up to date of opening of tender. Drawings, if any, forming the part of tender as issued at the time of invitation of tender and acceptance there of together with any correspondence leading to award of work.
- 1.23** The contractor shall quote his rates keeping in mind the specifications; terms & conditions, particular specifications and special conditions etc. and nothing shall be payable extra whatsoever unless otherwise specified. If the tenderer does not quote the rate for any item, leaving the space blank, whatsoever, it will be presumed that the tenderer has loaded the cost of this/ these item(s) on other item(s), and he will execute this /these items at zero cost, and the tender will be evaluated accordingly.
- 1.24 The department shall deduct Income Tax on the value of work done from each bill of the contractor as per prevailing Government orders. In lieu, the department shall issue a certificate of deduction of the tax at source to the contractor, in relevant form.
- 1.25 Engineer-in-Charge shall deduct TDS towards GST as per prevailing Government instructions/orders from the total payment made to contractor in pursuance of this contract. TDS shall also be deducted on advance payment to be adjusted in future bills. The TDS certificate shall be issued by the Engineer-in-Charge to the contractor in view of GST- deducted from payments made.
- 1.26 The department shall deduct Labour CESS @1% on the value of work done from each bill of the contractor as per prevailing Government instructions/orders.
- 1.27 In the tender document, the word “CPWD” shall be read as “APMC, Azadpur” and the word “President” may be read as “Secretary, APMC, Azadpur” wherever exists.
- 1.28 The tenderer shall ensure to submit his offer only through E- tendering process.

Executive Engineer

[For & on behalf of Secretary, APMC, Azadpur]

AGRICULTURAL PRODUCE MARKETING COMMITTEE
MARKET OF NATIONAL IMPORTANCE
NEW OFFICE COMPLEX, NFM- PH-II, SARAI PIPAL THALLA, AZADPUR, DELHI-33

2.0 Item Rate Tender & Contract for Works

Tender for the work of: - Re-Development of Cement Godown Area including re-construction of Shed No.1, 2 and 3 along with construction of Cement concrete roads, drains and Allied works

- (i) To be uploaded on website by 13:00 hours of 08/08/2018 .
- (ii) To be opened online in the office of Secretary, APMC through Executive Engineer Azadpur, Delhi-33.
- (a) **Technical Bid at 15:00 Hours on 08/08/2018 .**
- (b) **Financial Bid at 15:30 hours on *-----.*the Date shall be intimated through e-mail and telephonically**

TENDERER

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F. Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Secretary, APMC, Azadpur 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 and with such materials as are provided for, by, and in respects in accordance with, such conditions so far as applicable.

I/We agree to keep the tender open for one twenty (120) days from the due date of submission thereof and not to make any modifications in its terms and conditions.

An Earnest Money Deposit (EMD) of Rs. 6,15,000/- (Rupees Six Lakhs Fifteen Thousand Only) should be remitted by RTGS /NEFT Challan in favour of APMC, Azadpur, Account No.50276843057 of (Allahabad Bank Azadpur). IFSC Code: ALLA0210711, MICR Code 110010004. If I/we fail to furnish the prescribed performance guarantee within prescribed period, I/we agree that the said Secretary, APMC, Azadpur or his successors in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/we fail to commence work as specified, I/we agree that Secretary, APMC, Azadpur or his successors in office shall without prejudice to any

other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the work referred to in the tender documents upon the terms and conditions contained or referred to therein and to vary out such deviations as may be ordered, up to maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in **Clause 12.2** and **12.3** of the tender form. Further, I/We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I/We shall be debarred for participation in the retendering process of the work.

I/We hereby declare that I/we shall treat the tender 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.

Dated **.....

Witness:

Address:**

Occupation:**

**

Signature of Contractor **

Postal Address

3.0 ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the Secretary, APMC, Azadpur for a sum of

Rs.* _____ (Rupees* _____
_____)

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

a)*	For & on behalf of the Secretary, APMC
b)*	Signature * _____
c)*	Designation: Executive Engineer , APMC,
Dated*	Azadpur

* To be filled by EE

** To be filled by Contractor

4.0 SCHEDULES A to F

SCHEDULE 'A'

Schedule of quantities (Enclosed.) **As per schedule attached.**

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

S.No.	Description Of item	Quantity	Rates in figures & Words at which the material will be charged to the contractor	Place of Issue
1	2	3	4	5

NIL

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

SCHEDULE 'D'

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

1. General Conditions.
2. Special conditions for civil works.
3. Special conditions for cement and steel.
4. Particular Specifications for Civil works
5. Guarantee Bonds

SCHEDULE 'E&F'

Reference to General Conditions of contract.

Name of work:- Improvement of lanes and by lanes, ramps etc. including sewer and storm water drainage system in A and D block NSM, Azadpur

Estimated cost of work **Rs. 3,07,31,724/-**

(i) Earnest Money **Rs. 6,15,000/-**

(ii) Performance Guarantee = 5% (five percent) of the tendered value.

(iii) Security Deposit A sum @ 5% of the gross amount of the bill shall be deducted from each running account bill of the contractor till the sum along with sum already deposited as earnest money will amount to security deposit of 5% of the tendered value of the works.

SCHEDULE 'G'

GENERAL RULES & DIRECTIONS:

Officer inviting tender

Secretary, APMC, Azadpur through

Maximum percentage for quantity

Executive Engineer, APMC, Azadpur

of items of work to be executed

beyond which rates are to be

determined in accordance with

Clauses 12.2 & 12.3

See below

Definitions:

- 2 (v) **Engineer –in – charge** **Executive Engineer,
APMC, Azadpur**
- 2 (viii) **Accepting Authority** **Vice-Chairman, DAMB**
- 2 (x) Percentage on cost of materials and labour to cover all overheads and profits. 15%
- 2 (xi) Standard Schedule of Rates. DSR 2014 with correction slips issued upto the last date of issue of tender
- 2 (xii) Department **Agricultural Produce Marketing Committee
Azadpur**
- 9 (ii) Standard PWD Form **PWD form 8**, as modified up to date correction slip upto date of opening.

Clause 1

- i) Time allowed for submission of performance guarantee from the date of issue of letter of acceptance, 15 working days
- ii) Maximum available extension beyond the period as provided in (i) above, 7 days

Clause 2**Authority for fixing****Vice-Chairman, DAMB**

Compensation under Clause 2.

Clause 2A**Applicable****Clause 5**

Time allowed for execution of work : 9 Months
To be reckoned from 10th day of issue of letter of acceptance

Mile stone (s) to complete the work As per table given below

Table of Mile Stone(s)

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

Authority to give fair and reasonable extension of time for completion of work. Keeping in view the penalty clause

Vice Chairman, DAMB

Clause 6A 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. --

40 lacs.

Clause 10 A

List of testing equipment to be provided by the contractor at site lab.

..... **As per site requirement**

Clause 10 B (ii)

Whether Clause 10 B (ii) shall be applicable

No

Clause 10C

Applicable

Clause 10 CA

Not Applicable

Clause 10CC

Not Applicable

Clause 11

Specifications to be followed for execution of work.CPWD specification -2009 Vol-I & II with upto date correction slip

Clause 12

12.2 & 12.3) Deviation limit beyond which clause 12.2 & 12.3 shall apply for building work/Shad

± 30 %. (Plus/Minus) except foundation work

12.5) Deviation limit beyond which clause 12.2 & 12.3 shall apply for foundation work

+100%

Clause 16

Competent Authority for V.C., DAMB Deciding reduced rates

Clause 18

List of mandatory machinery, Tools & plants to be deployed by the contractor at site:-

..... **As per site requirement**

Clause 36(i)

Requirement of Technical representative (s) required at site

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 (Per Person)	Words (Per Person)
1.	Project Manager with degree in Civil Engineering		Principal Technical Representative	15 Years	1 No.	60,000/- pm.	Sixty Thousand
2.	Quality Control Manager (Graduate Engineer)		Quality Control Engineer	5 Years	1 No.	25,000/- pm.	Twenty five Thousand
3.	Computer Operator for Engineer-in-charge office		Computer / Data Entry Operator	2 Years	1 No.	18,000/- p.m.	Eighteen Thousand

Assistant Engineer retired from Govt. service holding Diploma will be treated at PAR with Graduate Engineers. Even, if contractor or partner himself is an Engineer / Overseer, it is necessary on part of contractor to employ Engineer as per stipulation.

Clause 42

i)

- (a) Schedule/ statement for determining theoretical quantity of cement & bitumen on the basis of Delhi DSR-2014 and as per nomenclature of item with all correction slip upto the date of receipt of tender.

ii) Variations permissible on theoretical quantities.

a) Cement for works with estimated

Cost put to tender not less than Rs. 5 Lakhs. : 3% plus/minus.

For works with estimated cost put to

Tender more than Rs. 5 lakhs. : 2% plus /minus

b) Bitumen All works. : Not Applicable

c) Steel Reinforcement and structural steel sections for each diameter, section and category

: 2% plus / minus

d) All other materials

: Nil

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No.	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor. Rates in schedule 'B' plus 10% in case materials issued by the Department. Excess beyond permissible variation. Less use beyond the permissible variation.
1.	Cement	Recovery Rates applicable during the month of opening of tender shown on CPWD site shall be considered as base rate for recovery.
2.	Structural sections	
3.	Reinforcement Steel (TMT bar)	

**Executive Engineer
APMC, Azadpur**

5.0 GENERAL AND SALIENT POINTS

Name of Work :-Improvement of lanes and by lanes, ramps etc. including sewer and storm water drainage system in A and D block NSM, Azadpur

- 5.1 The security deposit shall be recovered from the running bills of the contractor at the rates specified in modified clause 1A and earnest money deposited in the form of Securities or fixed deposit receipt shall only be treated a part of the security deposit. The part earnest money in the form of the Guarantee bonds, if deposited at the time of tender, shall not be considered towards this part of security deposit.
- 5.2 The contractor(s) shall submit a detailed programme of execution of work showing activities distinctly along with Bar-Chart and CPM Chart on MS project within ten days of the letter of acceptance of work in direct relation to the time stated in the contract document for completions of items of the works.
- 5.3 The contractor shall make his own arrangements for electricity and water required for the execution of the work and nothing extra shall be paid for the same. However, for electrical connection, Engineer-In-Charge shall recommend the application to concerned authority for Electrical connection if required. Necessary payment shall be made by the contractor directly to the department concerned. In case the concerned authority fails to sanction the electric connection or delays the sanction of electric connection, the contractor shall make his own arrangements at his own cost.
- 5.4 For water supply, contractor shall make his own arrangement including boring \ of tube well **after taking approval from competent authority if necessary**, and nothing extra shall be paid by the Department for arrangement of water or on its treatment to make it fit for construction as per requirements laid down in is: 456:2000, Para 5.4 or CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender, assistance required like request letter etc. to the required authority shall be given by Deptt.
The water to be used for construction shall have to satisfy the requirements as per Indian Standard codes. As soon as the contractor decides or locates source of water he shall be required to send samples of water for testing to Lab as directed by Engineer-in-charge.
In case the water is found un-suitable for construction purpose, the contractor shall at his own cost take advice/remedial measures to make water fit for construction from Lab.
The record of such remedial measures chemical procured / doze so added shall required to be maintained by contractor and shall submit along with R/A bills. The samples of water testing have to be repeated quarterly. Nothing on A/c of water for testing, remedial, rectification & periodical testing etc. shall be payable.
- 5.5 All the materials including cement and steel will be arranged by the contractor himself and nothing extra shall be paid for cartage of material at site of work.
- 5.6 The contractor shall use the concrete pump / transit mixer or any other mechanical means for transporting & placing the concrete to keep the progress of work as per programme. Nothing extra shall be paid on this account.

- 5.7 For lifting of concrete to various levels, concrete pump/tower cranes/Mechanical hoist of appropriate size / capacity can be deployed by the contractor, nothing extra shall be paid on this account.
- 5.8 The contractor shall quote the rates separately in figures and words accurately so that there is no discrepancy in figures and words and total amount. In case of discrepancy, procedure specified in the contract document of APMC, Azadpur shall be followed.
- 5.9 Final date of completion shall be recorded by the Engineer-in-charge . The authority for levying compensation under clause-2 and granting fair & reasonable extension of time for completion under clause 5 shall be Secretary, APMC, Azadpur, Delhi or his successor.
- 5.10 If the contract is determined for any reasons whatsoever by the Engineer-in-Charge , the entire contract shall be treated determined automatically. The Engineer-in-Charge for determination of contract under clause-3 shall be Executive Engineer, for work.
- 5.11 The authority for appointment of arbitrator under clause-25 shall be Vice Chairman, DAMB.
- 5.12 **QUALITY ASSURANCE:-**
- 5.12.1 The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship and correct construction methodologies to be adopted. He shall have to submit **quality assurance programme within fifteen days of the letter of acceptance of the work**. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.
- 5.12.2 The contractor shall intimate the source of various raw materials namely aggregate, sand, water etc. to be used on the work to get, approved from the Engineer-In-Charge. Trial mixes for controlled concrete shall be done using the approved materials. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-In-Charge for which tests etc. shall be done by the contractor at his own cost.
- 5.12.3 The contractor shall submit brand / make of various materials to be used for the approval of the Engineer-In-Charge out of the preferred list appended in the tender document within 10 days of the letter of acceptance and once approved, he shall stick to it.
- 5.12.4 The contractor shall submit shop drawings of staging and shuttering arrangement to Engineer-In-Charge. The contractor shall be fully responsible for the safety of shuttering & form work any mishappening with failure of shuttering & staging shall be the sole responsibility of the contractor.
- 5.13** Un-authorized sub-letting of work shall not be permitted.
- 5.14** All material shall only be brought at site as per programme finalized with the Engineer-In-Charge. Any pre-delivery of the material, not required for immediate consumption shall not be accepted and thus not paid for.

- 5.15 Testing Lab** - The contractor has to establish site-testing lab as per provision in the Tender Document (additional condition general).
- 5.16 Measurement / Payment** - The contractor has to measure the work & submit the same to Department as per provision of modified clause 6 & 7 of tender. The measurement shall be submitted by the contractor to the Engineer-in-charge or his authorized representative for each bill except for the hidden measurements which shall be submitted for check / test check as & when work is being carried out. Payment shall be made accordingly.
- 5.17 PERFORMANCE GUARANTEE**
- 5.17.1 The contractor shall submit an irrevocable PERFORMANCE GUARANTEE of 5% (Five percent of the tendered amount) in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (notwithstanding and/ or without prejudice to any other provisions in the contract) within 7 working days of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge upto a maximum period of 5 days on written request of the contractor stating the reason for delays in procuring the Bank Guarantee to the satisfaction of the Engineer-in- Charge.
- This guarantee shall be in the form of Fixed deposits or Guarantee Bonds of any scheduled Bank or the State Bank of India in accordance with the form annexed hereto. In case a fixed deposit receipt of any Scheduled Bank is furnished by the contractor the Govt. as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forth with on demand furnish additional security to the Govt. to make good the deficit.
- 5.17.2 A letter of acceptance shall be issued informing the successful tenderer of the decision of the competent authority to accept his tender and to submit the performance Guarantee within 7 working days in any of the prescribed form. and site of work shall be handed over thereafter. In case of failure by the contractor to furnish the performance guarantee within the specified period, APMC, Azadpur shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money absolutely.
- 5.17.3 The performance Guarantee shall be initially valid upto the stipulated date of completion plus 90 Days beyond that. In case the time from completion of work gets extended, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After recording of the completion certificate for the work by the competent authority, the performance guarantee shall be returned to the contractor, without any interest.
- 5.17.4 The Engineer-in-charge shall not make a claim under the performance guarantee except for amounts to which APMC, Azadpur is entitled under the contract (notwithstanding and/ or without prejudice to any other provisions in the contract agreement) in the event of:-

- (a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.
 - (b) Failure by the contractor to pay APMC, Azadpur any amount due, either as agreed by the contractor or determined under any of the clauses/ conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-Charge.
 - (c) In the event of the contract being determined or rescinded under provision of any of the clause/ condition of the agreement shall stand forfeited in full and shall be absolutely at the disposal of the Secretary, APMC, Azadpur.
- 5.18** Contractor shall prepare working schedule giving the date and time of each items of start and completion of work and submit the same to Engineer-in-Charge for his approval.
- 5.19 The contractor shall follow all safety norms during staking of building material so as to avoid any damage / injury to the property of APMC as well as labours / visitors.

6.0 GENERAL CONDITIONS

6.1 Unless otherwise specified, CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender shall be followed in general. Any additional item of work, if taken up subsequently, shall also conform to the relevant CPWD specifications mentioned above. Should there be any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and I.S. Codes etc., the following order of preference shall be observed:

- i. Description of items as given in Schedule of quantities.
- ii. CPWD Specifications 2009 (Volume I and II) with upto date correction slips issue till date of tenders, DSR 2014.
- iii. All Condition of the contract and particular specifications and approved design
- iv. BIS/I.S. Codes of particulars
- v. Decision/direction of Engineer-in-Charge.

6.2 INSPECTION OF SITE

6.2.1 The Contractors is deemed to have inspected and examined the site and its surroundings and satisfy themselves with the nature of site, the means of access to the site, the constraints of space for stacking material machinery, labour etc. constraints put by local regulations, if any, weather conditions at site, general ground / subsoil conditions etc. or any other circumstances which may affect or influence their tenders.

6.2.2 The contractor shall make all arrangement like barricading, scaffolding/from work etc. to provide safely measures as per the norms of industrial safety act prevalent at time of execution.

6.2.3 The contractor shall engage site Engineer as per provision of clause 36 of the agreement who and his authorized representative should always be available at the site of work for taking instructions from the Departmental Officers and ensure proper executive of work. No work should be done in the absence of such authorized representative . The site Graduate Engineer of the contractor shall also remain available at site during the execution of all the major items and also when the site is likely to be inspected by the Engineer-incharge or senior officers. In case the proper technical staff is not engaged at site by the contractor, the recoveries as per relevant clauses shall be made from the bills of the contractor.

6.3 The Contractor shall, if required by him, before submission of the tender, inspect the drawings in the Office of the Engineer-in-Charge. The Department shall not bear any responsibility for the lack of knowledge and also the consequences, thereof to the Contractor. The information and data shown in the drawings and mentioned in the tender documents have been furnished, in good faith, for general information and guidance only. The Engineer-in- Charge, in no case, shall be held responsible for the accuracy thereof and or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. No claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in tender document is different or in-correct otherwise or actual working

drawings are at variance with the drawings available for inspection or attached to the tender documents. It is presumed that the Contractor shall satisfy himself for all

possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies.. Nothing extra shall be payable on this account.

6.4 During execution if water encountered from rain, floods, or any other source whatever, may be, the contractor shall carry out dewatering (at his own cost), as and when required. Nothing extra shall be payable on this account.

6.5 The nomenclature of the item given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and / or described in the specifications, provided that the same can be reasonably inferred there from. There may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All these incidental works / costs which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor for various items in the schedule of quantities. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-Charge. Nothing extra shall be payable on this account.

6.6 If there are varying or conflicting or contradictory provision made in General Condition of contract PWD - 8 and Conditions mentioned in Tender Document decision of Secretary, APMC, Azadpur shall be final & binding & such decision shall be outside the preview of arbitration

6.7 The Contractor shall make arrangements for site office, stores etc. for site staff as directed by Engineer-in-charge and shall also provide all required facilities.

6.8 All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, barricading, testing facilities laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts. Before start of the work, the Contractor shall submit to the Engineer-in-Charge, a site / construction yard layout, specifying areas for

construction, site office, positioning of machinery, material yard, cement and other storage, steel fabrication yard, site laboratory, water tank, etc .

- 6.9 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by MCD / NDMC and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and I or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work. He shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts. The fee payable to statutory authorities for obtaining the various permanent service connections and Occupancy Certificate for the building shall be borne by the Department.
- 6.10 Royalty at the prevalent rates shall be paid by the Contractor as per the terms of supply between them on all materials such as boulders, metals, sand and bajri etc. collected by him for the execution of the work, directly to the revenue authority of the state Govt. concerned. Nothing extra shall be payable on this account. .
- 6.11 The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the Department from any and all damages and claims that may arise on any account. The Contractor shall indemnify the Department against all claims in respect of patent rights, royalties, design, trademarks of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the Department in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.

6.12 INSURANCE POLICIES

Before commencing the execution of work, the Contractor shall, without in any way limiting his obligations and liabilities, insure at his own cost and expense against any damage or loss or injury, which may be caused to any person or property, at site of work. The Contractor shall obtain and submit to the Engineer-in-Charge proper Contractor **All Risk Insurance Policy for an amount 1.25 times the contract amount for this work, with Engineer-in-Charge as the first beneficiary.** The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). Also, he shall indemnify the Department from any liability during the execution of the work. Further, **he shall obtain and submit to the Engineer-in-Charge, a third party insurance policy for maximum Rs.10 lacs for each accident, with the Engineer-in-Charge as the first beneficiary.** The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). The Contractor shall, from time to time, provide documentary evidence as regards payment of premium for all the Insurance Policies for keeping them valid till the completion of the work. The Contractor shall ensure that similar Insurance Policies are also taken by his Sub-Contractors / specialized agencies. The Contractor shall however be responsible, to the Department, for any claim or loss resulting from the failure of his Sub Contractors / specialized agencies in obtaining such Insurance Policies. Without prejudice to any of its obligations and responsibilities specified above, the Contractor shall within 10 days from the date of

letter of acceptance of the tender and thereafter at the end of each quarter submit a report to the Department giving details of the Insurance Policies along with Certificate of these insurance policies being valid, along with documentary evidences as required by the Engineer-in-Charge. No work shall be commenced by the Contractor unless he obtains the Insurance Policies as mentioned above. Also, no payment shall be made to the Contractor on expiry of insurance policies unless renewed by the Contractor. Nothing extra shall be payable on this account. No claim of hindrance (or any other claim) shall be entertained from the contractor on these accounts.

6.13 TEMPORARY BARRICADING

Proper temporary barricading by fencing with G.I. sheets, shall be carried out by the Contractor at the start of work to for restricted entry to only those involved in the work and also to prevent any accidents, at the same time without causing any inconvenience to the traffic and the users of the buildings in the adjacent plots. It shall be done by providing, erecting, maintaining temporary protective barricading, 2.5 meters in height, made in panels, with each panel having MS frames / MS scaffolding pipes of suitable size and stiffness, with 24 gauge thick GI corrugated sheet or suitably stiffened plain GI sheet fixed on frames. Such panels shall be suitably connected to each other for stability with nuts and bolts, hooks, clamps etc. and fixed firmly to the ground at about 2 meters spacing, for the entire duration till completion of the work. He shall also provide and erect temporary protective barricades within the plot, if required, to prevent any accident. Temporary protective roofing near the Entrance to the building, under construction, shall be made to protect the visiting officials from getting hurt by falling debris etc. Also, one or more coat of enamel paint of shade as approved and directed by the Engineer-in-Charge shall be applied on the panels in suitable sizes, shapes and numbers as directed by the Engineer-in-Charge. It shall be dismantled and taken away by the Contractor after the completion of work at his own cost with the approval of the Engineer-in- Charge. Nothing extra shall be payable on this account.

6.14 WARNING/ CAUTION BOARDS

All temporary warning / caution boards / glow sign ages display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions & protective Barricades etc. shall be provided and displayed during day time by the Contractor, wherever required and as directed by the Engineer-in-Charge. These glow sign ages and red lights shall be suitably illuminated during night also. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. These sign ages shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer - in - Charge. Nothing extra shall be payable on this account.

6.15 SIGN BOARDS

The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in- Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, client / owner, architects, structural consultants, Department etc. besides providing space for names of other Contractors, Sub-Contractors and specialized agencies. Nothing extra shall be payable on this account.

6.16 INTEGRATED PROGRAMME CHART

- 6.16.1** The Contractor shall prepare and submit to the Engineer-in-charge, an integrated programme chart. The integrated programme chart submitted by the contractor shall not have any discrepancy with the financial milestones attached in the contract agreement. The contractor shall execute the work according to the programme submitted to and approved by the Engineer-in-Charge.
- 6.16.2** The Contractor shall prepare the integrated programme chart showing clearly all activities from the start of work to the completion, with details of requirements of materials, man power, equipments and machinery deployment required for the completion of the work within the stipulated period and submit the same to the Engineer-in-Charge within fifteen days after the issue of letter for commencement of work. The Contractor shall also submit monthly programme and progress reports and update / re-schedule the same every month. These shall be submitted by the contractor through electronic media besides forwarding hard copy of the same.
- 6.16.3** The approval by the Engineer-in-Charge of such programme or the furnishing of such particulars shall not absolve or relieve the Contractor of any of his duties or responsibilities under the contract to complete the whole work within the prescribed / stipulated time limit. This is without prejudice to the right of the Engineer-in-Charge to take action against Contractor as per terms and conditions of the contract agreement.

6.17 PROTECTIVE SAFETY MEASURES

Necessary protective and safety equipments shall be provided to the Site Engineer, workers & Supervisory staff by the Contractor at his own cost and used at site.

- 6.18** The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency may deploy adequate equipments, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also ancillary facilities shall be provided commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipments in working condition, along with adequate standby arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipments, Tools & Plants, machineries etc provided by him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipments and machineries provided by the Contractor, on site of work or his work shop for this work, shall be exclusively intended for use in the construction of this work and they shall not be shifted / removed from site without the permission of the Engineer -in-Charge.

6.19 DISPLAY PERMISSIONS

The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc under various labour laws and other regulations applicable to the works, at his site office.

6.20 REMOVAL OF 'MALBA' ETC. FROM SITE

The Contractor shall not stack building material/ malba / muck on the land or road of the local development authority or on the land owned by the others, as the case may be. So the muck, rubbish etc. shall be removed periodically as directed by the Engineer-in-Charge, from the site of work to the approved dumping grounds as per the local byelaws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the Contractor.

Nothing extra shall be payable on this account. In case, the Contractor is found stacking the building material / malba as stated above, the Contractor shall be liable to pay the stacking charges / penalty as may be levied by the local body or any other authority and also to face penal action as per the rules, regulations and bye-laws of such body or authority. The Engineer -in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above counts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.

6.21 TOOLS AND PLANTS

No tools and plants including any special T&P etc. shall be supplied by the Department and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account.

6.22 COORDINATION WITH OTHER AGENCIES

The Contractor shall conduct his work so as not to interfere with or hinder the progress of the work being performed by other Contractors or by the Engineer-in-Charge. As far as possible, he shall arrange his work and place, so as not to interfere with the operations of other Contractors or shall arrange his work with that of the others, in an acceptable and coordinated manner and shall perform it in proper sequence.

6.23 FACILITIES BY THE CONTRACTOR TO THE OTHER CONTRACTORS AGENCIES

The Contractor shall cooperate with and provide the facilities to the sub Contractors and other agencies working at site for -smooth execution of the work. The Contractor shall

- i. Allow use of scaffolding, toilets, sheds etc.
- ii. Properly co-ordinate their work with the work of other Contractors.
- iii. Provide control lines and benchmarks to his Sub-Contractors and the other Contractors.
- iv. Provide electricity and water at mutually agreed rates.
- v. Provide hoist and crane facilities for lifting material.
- vi. Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
- vii. Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.
- viii. Resolve the disputes with other Contractor amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator. The contractor shall indemnify the Department against any claim(s) arising out of such disputes.

6.24 The site of work shall be always kept clean due to constraints of space and to avoid any nuisance to the users of buildings in the adjacent plots. The Contractor shall take all care to prevent any water- logging at site. The wastewater, slush etc. shall not be allowed to be collected at site. It may be directly pumped into the creek with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from relevant authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

6.25 PREVENTION OF NUISANCE AND POLLUTION

The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in- Charge. The Contractor shall use such methodology and equipments for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to prevent any pollution of streams and waterways. All waste or superfluous materials shall be carted away by the Contractor, entirely to the satisfaction of the Engineer-in-Charge. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Contractors are advised to visit site and get first hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

6.26 SCAFFOLDING

Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the Contractor. It shall be provided strictly with steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. It shall be designed to take all incidental loads. It should cater to the ' safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.

6.27 The Contractor shall maintain all the work in good condition till the completion of entire work. The Contractor shall be responsible for and shall make good, all damages and repairs, rendered necessary due to fire, rain, traffic, floods or any other causes. The Engineer-in-Charge shall not be responsible for any claims for injuries to person/workmen or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the Contractor or of any other of his representatives, in his employment during the execution of the work. The compensation, if any, shall be paid directly to the Department / authority / persons concerned, by the Contractor at his own cost.

6.28 For completing the work in given time frame, the Contractor might be required to work in two or more shifts (including night shifts).

6.29 In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained not withstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any.

6.30 The Contractor shall render all help and assistance in documenting the total sequences of this project by way of photography, slides, audio / video recording etc. Nothing

extra shall be payable to Contractor on this account. However, cost of photographs, slides, audio / video-graphy etc shall be borne by the Department. The original films shall be the property of the Department. No copy shall be prepared without the prior approval of the Engineer- in Charge.

6.31 The Contractor shall make all necessary arrangements for protecting from rains, the work already executed and for carrying out the further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account. Also, no claims for hindrance shall be entertained on this account.

6.32 INCIDENTAL CHARGES

For all items of work, all the incidental charges of any kind including cartage, storage, wastage and safe custody of material etc. shall be borne by the Contractor and no claim of any kind, whatsoever, shall be entertained on this account.

6.33 STORAGE OF MATERIAL AT SITE

No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities in this regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

6.34 SPECIAL SAFETY MEASURES

All the safety measures shall be strictly adhered by the contractor during the work of excavation / execution of work. It should be responsibility of the contractor to carefully execute the work including all safety measures to avoid any mis happening at site. During the course of execution of work proper slopes while excavation shall be maintained by contractor and in any case no vertical excavation shall be carried out. The lanes/ by lanes where the work is executed are quite narrow so proper safety measures wherever required like close timbering including strutting, planking and packing of voids/cavities etc. shall be done by the contractor to ensure the safety of existing structures.

6.35 CIVIL AND CRIMINAL LIABILITY

All the civil and criminal liability of the work shall be responsibility of the contractor including compensation as decided by any court of law. All such liabilities shall be treated as vicarious liabilities which will be accepted on contractors behalf.

**Executive Engineer
APMC, AZADPUR**

7.0 ADDITIONAL GENERAL CONDITIONS

7.1 QUALITY ASSURANCE & TESTING OF MATERIAL:-

- 7.1.1 The contractor shall submit his detailed quality assurance plan and quality assurance manual and get it approved from the Engineer-in-charge within fifteen days of issue of letter of acceptance of work.
- 7.1.2 Samples of materials required for testing shall be provided free of charge by the contractor. The cost of tests shall be borne by the contractor / reimbursed by department in the manner indicated below:-
- (a) **By the contractor, if the results show that the material does not confirm to relevant specifications.**
 - (b) **By the department, if the results show that the material confirms to relevant specifications.**
 - (c) **All other expenditure required to be incurred for taking samples, conveyance, packing etc. shall be borne by the contractor himself.**
 - (d) The Contractor shall deposit the required fees with laboratory (directed by Engineer-in-charge) and the amount so paid as illustrated above shall be reimbursed only, on raising of paid testing charges on this account along with the next running account bill with original receipt of testing charges deposited and report of sample received. Such reimbursement shall be permitted within 90 Days of receipt of sample report. No claim on this account shall be entertained if contractor fails to raise the bill within the period specified above. In case, if contractor delays in submission of samples in testing Laboratory the Deptt. shall be at liberty to send the sample for testing at his own in the testing Laboratory in such case the Deptt. shall make recovery twice the cost of testing charges deposited.
- 7.1.3 However, if any ultrasonic pulse velocity / load testing or special testing is to be done for concrete whose strength is doubtful, in the opinion of Engineer-in- Charge the cost of the same shall be borne by the contractor.
- 7.1.4 In case there is any discrepancy in frequency of testing as given in list of mandatory tests and that in individual sub-heads of work as per CPWD Specifications, higher of the two frequencies of testing shall be followed and nothing extra shall be payable on this account.
- 7.1.5** The contractor has to establish field laboratory at site including all necessary equipments and skilled manpower for field tests as required at his own cost to have proper quality control within 10 days of the stipulated start of work.

Field Testing Instruments

The contractor shall have the required field-testing instruments for checking of quality of work at field by him & by the officers of department.

- i. Steel tapes - 3 m /30 metres
- ii. Vernier Calipers (one number digital)
- iii. Micrometer Screw 25 mm gauges (one number digital)
- iv. Good quality plumb bobs

- v. Spirit levels minimum 30 cms long with 3 bubbles for horizontal vertical
- vi. Wire gauge (circular type) disc.
- vii. Foot rule
- viii. Long nylon thread
- ix. Magnifying glass
- x. Screw driver 30 cms long
- xi. Ball pen hammer, 100 gms
- xii. Plastic bags for taking samples
- xiii. Leveling machine (digital)
- xiv. Theodolite

- 7.2 The work shall be executed and measured as per metric dimensions given in the schedule of quantities, drawings etc. (FPS units wherever indicated are for guidelines only)
- 7.3 Any legal or financial implications resulting out of disposal of malba / dismantled material shall be sole responsibility of the contractor. Nothing extra shall be paid on this account.
- 7.4 All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested before covering. **Non testing of lines may attract minimum 20% of amount withhold of that particular item of work.** This shall only be released on satisfactory testing of pipes/system. **Failing to test the lines shall attract recovery of 5% of amount that particular item head.**
- 7.5 The contractor shall bear all incidental charges for cartage, storage and safe custody of materials brought to site.
- 7.6 The work shall be carried out in accordance with the Architectural drawings, structural and services drawings, to be issued from time to time Before commencement of any item of work, the contractor shall correlate all the relevant architectural, structural drawing and services issued for the work, nomenclature of items, specifications etc. and satisfy himself that the information available there from is complete and unambiguous. The discrepancy, if any, shall be brought to the notice of the Engineer-In-Charge for immediate decision before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and or incomplete information and no claim, whatsoever shall be entertained on this account.
- 7.7 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-In-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.
- 7.8 The Architectural drawings other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fixings involved unless and otherwise specifically mentioned. However, the work shall be executed in accordance with the drawings duly approved by the Engineer-in-charge.

- 7.9 **Contractor shall provide permanent bench marks, flags tops and other reference points for the proper execution of work and these shall be preserved till the end of work.** All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings.
- 7.10 The contractor shall give performance test of the entire installation (s) as per the standing specifications before the work is finally accepted and completion certificate is recorded by the Engineer-in-Charge. Nothing extra whatsoever shall be payable to the contractor for the test.
- 7.11.1 Any cement slurry added over base surface for continuation of concreting for better bond is deemed to have been included in the items and nothing extra shall be payable on this account, also the cement consumed on this account shall not be considered for theoretical consumption.
For RCC work, only factory made round type cover block shall be used
- 7.11.2 For brick work unless otherwise specified FPS bricks shall be used in all items of work. The classification of bricks brought by the contractor shall conform to the CPWD specifications.
- 7.12 The contractor get the water tested with regard to its suitability and conforming to the relevant IS-code. The contractor shall obtain written approval from the Engineer-in-Charge before he proceeds by using the same for execution of work.
- 7.13 The Contractor shall ensure compliance monitoring conditions as imposed by MOEF.
- 7.14 **Responsibility to conduct field / Lab test and Testing Record of the test conducted at site shall be done & / maintained by contractor's staff. Regular checks of such field / Lab test / Recordings of results etc. shall be made by the subordinate staff of Engineer-in-charge. All record of field test in Register's / Reports shall be maintained by the Quality Control staff deployed by the contractor at site and this record of test shall require to submit along with the bill payment.**
- 7.15 The Quantities if shall vary more than the specified under schedule F, the contractor shall immediately inform but not later than 3 days to Engineer-in-charge in writing of such deviations. No claim whatsoever if intimation of such deviation are given later on shall be entertained.
- 7.16 The Contractor shall submit a detailed programme in the form of CPM/PERT chart resource schedule to Engineer-in- charge within 10 days of award of work failing which compensation shall be levied at the rate of Rs. 500/- for each day of delay.
- 7.17 The contractor shall have to use plate vibrators and needle vibrators whenever required as per item of the work.

- 7.18 All tools, plant and machinery provided by the contractor, shall, when brought to the site, be deemed to be exclusively intended for construction and completion of this work and the contractor shall not remove the same or any part thereof without the consent of the Engineer-in-charge.
- 7.19 Other agency doing works related with this project will also simultaneously execute the work and the contractor shall afford necessary facility for the same. The contractor shall leave necessary holes, opening extra for laying/burying in the work, pipes, cables conduits, clamps, boxes, boxes and hooks for fans clamps etc. as may be required for the other agency. Conduct for electrical wiring/cable will be laid in a way that they leave enough space for concreting and do not adversely effect the structural members, Nothing extra over the agreement rates shall be made to the contractor for stop boards.
- 7.20 (a) For R.C.C./C.C. works any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been considered in the items and nothing shall be payable for extra cement in consumption of this account. The stop, boards used for construction at the end of days work shall not be considered as side shuttering and no extra payment shall be made to the contractor for stop boards.
- (b) The contractor shall apply cement wash on the reinforcement steel on arrival at site to prevent deformation/and rusting by constructing suitable length ponds for dipping reinforcement. Nothing extra shall be admissible.
- (c) The structural and architectural drawing shall at all times be properly correlated before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities appended with the tender and Architectural drawing relating to the relevant item, the former shall prevail unless and otherwise given in writing by the Engineer-in-charge.

8.0 SPECIAL CONDITIONS FOR CEMENT & STEEL

8.1 CONDITIONS FOR CEMENT:-

- 8.1.1 The contractor shall procure 43 grade (confirming to IS 8112) ordinary Portland cement, as required in the work from reputed manufacturers of cement of approved make and having a production capacity of one million tonnes as approved by Ministry of Industry, Govt. of India such as ACC, L&T, JP, Leva, Vikram, Shree Ciment, Birla and cement corporation of India etc. holding license to use ISI certification mark for their product whose name shall be got approved from Engineer-In-Charge. The tenderers may also submit a list of names of cement manufacturers which they propose to use in the work. The tender accepting authority reserves right to accept or reject name(s) of cement manufacture(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer fully or partially. Supply of cement shall be taken in 50 kg. Bags bearing manufacturers name and ISI marking, along with manufacturers test certificate for each lot. Samples of cement arranged by the contractor shall be taken by the Engineer-In-Charge and got tested in accordance with provisions of relevant BIS Codes. The cement for such testing purpose shall be supplied by the contractor free of charge. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS Codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-In-charge to do so. The cost of test shall be borne as defined under additional general condition Para 1.2.
- 8.1.2 The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer-In-Charge. Each lot of cement 50 MT or smaller brought to site will be subjected to testing. Testing charges will be governed as per provisions of contract.
- 8.1.3 Cement bags shall be stored in two separate godowns, one for tested cement and the other for fresh cement (under testing) to be constructed by the contractor at his own cost as per sketches given in CPWD Specifications 2009 Vol.-I & II with correction slips issued upto the last date of Submission of tender having weather-proof roofs and walls. The size of the cement go down is indicated in the sketch for guidance. The actual size of god own shall be as per site requirements and nothing extra shall be paid for the same. Each go down shall be provided with a single door with two locks. The keys of one lock shall remain with Engineer-in-charge of the work and that of other lock with the authorized agent of the contractor at the site of work so that the cement is issued from god own according to the daily requirement with the knowledge of both parties. The account of daily receipt and issue of cement shall be maintained in a register in the prescribed Performa and signed daily by the contractor or his authorized agent and Engineer-in-charge or his authorized representative in token of its correctness. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard Performa by the contractor or his authorised representative which shall be duly signed by the authorised representative of the Engineer-in-charge before issue to the work on day to day basis.
- 8.1.4 The capacity of each cement go-down shall be 2000 bags of cement or more as decided by the Engineer -in-charge and shall be constructed by the contractor at site

of work and at the site of batching plant for which no extra payment shall be made. The contractor shall be responsible for the watch and ward and safety of the cement go-down. The contractor shall facilitate the inspection of the cement go-down by the Engineer-in-charge at any time.

8.1.5 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in 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 the conditions laid therein app. MT cement shall be required to execute this work.

8.1.6 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in Clause - 42), the cost of quantity of cement not so used shall be recovered from the contractor as specified in schedule. Decision of the Engineer-in-charge in regard to theoretical quantity of cement which should have been actually used as per the schedule and recovered at the rate specified, shall be final and binding on the contractor.

For non-scheduled items, the decision of the Secretary regarding theoretical quantity of the cement which should have been actually used shall be final and binding on the contractor.

8.1.7 Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.

8.1.8 In case the contractor brings surplus quantity of cement the same shall be removed from the site after completion of work by the contractor at his own cost after approval of the Engineer-in-charge.

8.1.9 The stacks of cement shall be in rows of two bags deep and 10 bags high with a minimum of 60 cm. clear space all-round. The bags should be placed horizontally continuous in each line as shown in the sketch given in General Conditions of Contract for APMC, AZADPUR . The sketch is only for guidance. Actual size & shape of go downs shall be as per site requirement and nothing extra shall be paid on this account.

8.1.10 The contractor shall submit original vouchers for the total quantity of cement supplied under each consignment. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer -in-Charge in respect of all the lots of cement brought by him to the site of work. The original vouchers and test certificates shall be defaced by the Site staff and kept on record in the site office.

Samples shall also been taken & got tested as defined under Para 1.1 above.

8.0 CONDITIONS FOR HDPE PIPES

8.1. COLOUR

The colour of the pipe shall be black.

For the purpose of identification of the pipes covered in this standard, each pipe shall contain minimum three equi-spaced longitudinal stripes of width 3 mm (Min) in blue colour. These stripes shall be coextruded during pipe manufacturing and shall not be more than 0.2 mm in depth. The material of the stripes shall be of the same type of resin, as used in the base compound for the pipe.

8.2 MATERIAL

8.2.1 General: The-material used for the manufacture of pipes should not constitute toxic hazard, should not support microbial growth and should not give rise to unpleasant taste or odour, cloudiness or discoloration of water. Pipe manufacturers shall obtain a certificate to this effect from the manufacturers of raw material.

8.2.2 High density Polyethylene: High density polyethylene (HDPE) used for the manufacture of pipes shall conform to designation PEEWA-45-T-006 of IS 7328 : 1992. HDPE conforming to designation PEEWA-45-T-012 of IS 7328 : 1992 may also be used with the exception that melt flow rating (MFR) shall not exceed 1.10 g/10 minutes. In addition the material shall also conform to 5.6.2 of IS 7328 : 1992.

8.2.3 The specified base density shall be between 940.5 kg/m³ and 946.4 kg/m³ (both inclusive) when determined at 27 OC according to ~procedure prescribed in Annex A of IS 7328 : 1992. The value of the density shall also not differ from the nominal value by more than 3 kg/m³ as per 5.2.1.1 of IS 7328 : 1982.

8.2.4 The MFR of the material shall be between 0.41 and 1.10 (both inclusive) when tested at 190 UC with nominal load of 5 kgf as determined by method prescribed in 7 of IS 2530 : 1963. The MFR of the material shall also be within + 20 percent of the value declared by the manufacturer.

8.2.5 The resin shall be compounded with carbon black. The carbon black content in the material shall be within 2.5 + 0.5% and the dispersion of carbon black shall be satisfactory when tested according to the procedure described in IS 2530 : 1963.

3. Anti-oxidant

The percentage of anti-oxidant used shall not be more than 0.3 percent by mass of finished resin. The anti-oxidant used shall be physiologically harmless and shall be selected from the list given in IS 10141 : 1982.

4. Reworked Material

The addition of not more than 10 percent of the manufacturer's own rework material resulting from the manufacture of pipes is permissible. No other reworked or recycled material shall be used.

5. DIMENSIONS OF PIPES

5.1 Outside Diameter: The outside diameters of pipes, tolerance on the same and ovality of pipe shall be as given in Table.

Table Outside Diameter, Tolerance and Ovality of pipes

Nominal Diameter	Outside Diameter	Tolerance	Ovality
DN	mm	mm	mm
(1)	(2)	(3)	(4)
160	160.0	1.5	3.2
355	355.0	3.2	12.5
450	450.0	4.1	15.6

5.2 Wall Thickness: Wall thickness should be adherence with IS 4984:1995

6. VISUAL APPEARANCE: The internal and external surfaces of the pipes shall be smooth, clean and free from grooving and other defects. The ends shall be cleanly cut and shall be square with axis of the pipes. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible, provided that the wall thickness remains within the permissible limits.

7. Method of Measurement

7.1 The outside diameter of the pipe shall be taken as the average of two measurements taken at right angles for pipes up to 1 IO mm diameter. Alternatively and for higher sizes, the diameter shall be measured preferably by using a Flexible Pi tape or a circumeter, having an accuracy of **not** less than 0.1 mm. The wall thickness shall be measured by a dial vernier or ball ended micrometer. The resulting dimension shall be expressed to the nearest 0.1 mm.

Notes

1. The outside diameter shall be measured at a distance of at least 300mm from the end of the pipe.
 2. In the case of dispute, the dimension of pipes shall be measured after conditioning at room temperature for 4 hours.
- 7.2 Ovality shall be measured as the difference between maximum outside diameter and minimum outside diameter measured at the same cross section of the pipe, at 300 mm away from the cut end. For pipes to be coiled, the ovality shall be measured prior to coiling. For coiled pipes, however, re-rounding of pipes shall be carried out prior to the measurement of ovality.

7.3 Length of Straight Pipe

The length of straight pipe shall be 5 m to 20 m, as agreed between the manufacturer and the purchaser. Short lengths of 3 metre (Min) upto a maximum of 10% of the total supply may be permitted.

7.4 Coiling

The pipes supplies in coils shall be coiled on drums of minimum diameter of 25 times the nominal diameter of the pipe ensuring that kinking of pipe is prevented.

8. VISUAL APPREANCE

The internal and external surfaces of the pipes shall be smooth, clean and free from grooving and other defects. The ends shall be cleanly cut and shall be square with axis of the pipes. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible provided that the wall thickness remains within the permissible limits.

9. Reversion Test

When tested according to the procedure given at Annex C, the value of the longitudinal reversion shall **not** be greater than 3 percent.

9.1 Overall Migration Test

When tested **from** a composite sample of minimum 3pipes as per IS 9845 : 1986, the overall migration of constituents shall be within the limits stipulated in IS 10146 : 1987.

9.2 Density

When tested from a composite sample of minimum three pipes as per Annex A of IS 7328 : **1992**, it shall meet the requirement as given in 5.2.1.

9.3 Melt Flow Rate (MFR)

When tested from a composite sample of minimum three pipes as per IS 2530 : 1963, at 190 OC with nominal load of **5 kgf**, **MFR shall be between 0.4 to 1.1** g/10 minutes and also shall not differ by more than 30% of the MFR of the material used in manufacturing pipes.

9.4 Carbon Black Content and Dispersion

When tested from a composite sample of minimum three pipes, in accordance with IS 2530 : 1963, the carbon black content shall be within 2.5 2 0.5 percent, and the dispersion of **carbon** black shall be satisfactory.

**Executive Engineer
APMC, Azadpur**

9.0 PARTICULAR SPECIFICATIONS FOR CONCRETE, R.C.C. WORK AND OTHER CONDITIONS FOR EXECUTION OF WORK

1 CONCRETE WORK:-

The work shall be done in accordance with CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.

2 R.C.C. WORK:-

2.1 Design Mix Concrete

2.1.1 The RCC work shall be done with Design Mix Concrete. Wherever letter M has been indicated. The same shall imply for the Design Mix Concrete. The Design Mix Concrete will be designated based on the principles given in IS: 456:200. 10262 & SP 23. The conditions & specifications stated herein shall have precedence over all conditions & specification stated in relevant I.S. Codes & C.P.W.D. Specifications. The concrete mix shall be designed for the specified target mean compressive strength in order to ensure that work test result do not fall below the acceptance criteria specified for the concrete mix. The Contractor shall design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting requirements as specified. The mix shall be designed with required quantities of admixture & plasticizer to achieve required workability & strength.

2.1.2 The sources of coarse aggregate fine aggregate, water, admixture & cement to be used in concrete work shall be identified by the contractor & he will satisfy himself regarding their conforming to the relevant specification & their availability before getting the same approved from the Engineer-In-Charge.

- (a) **Coarse Aggregate:** - As per CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.
- (b) **Fine Aggregate:** - As per CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.
- (c) **Water:-** It shall conform to requirements laid down in IS:456-2000 I Para 5.4 or CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.
- (d) **Cement:-** OPC of grade 43 grade shall be used for design mix concrete and shall conform to IS-8112. If higher grade of OPC cement is used in place of 43 grade OPC cement by the contractor nothing extra shall be paid on this account
- (e) **Admixture & Plasticizer** - The admixture shall conform to IS:9103. Whenever required, the admixture of approved quality & approved make only shall be used to attain the required workability. Nothing extra on account of use of Admixture / Plasticizer shall be payable.

2.1.3 **Grade of Concrete:** - The compressive strength of various grades of concrete with various parameters shall be as follows:-

Grade Designation	Compressive Strength on 15 Cm. cubes min. 7 days (N/mm ²)	Specified characteristic compressive strength of 150mm tube 28 days (N/mm ²)	Minimum cement content (Kg. Per Cub. Mtr.)	Maximum water cement ratio
(i) M-20	As per Design	20	300	0.55
(ii) M-25	As per Design	25	300	0.50
(iii) M-30	As per Design	30	320	0.45
(iv) M-35	As per Design	35	340	0.45

NOTE:-

- (i) In the designation of a Concrete mix letter M refers to the mix and the number of the specified characteristic compressive strength of 15 cm Cube at 28 days expressed in N/mm².
- (ii) It is specifically highlighted that in addition to the above requirements. The maximum cement content for any grade shall be limited to 350 kg. / cubic metre.
- (iii) The minimum & maximum cement content for design mix concrete shall be maintained as per the quantity mentioned above. Even in the case where the quantity of cement required is higher than the minimum specified above to achieve desired strength based on an approved mix design, nothing extra shall become payable to the contractor.
- (iv). Concrete to lay shall be pumpable to the possible extent.
- (v). **Flyash shall not be permitted to use in control / design mix / RMC.**

- 2.1.4 The Contractor shall engage one of the following approved laboratories / test house for designing the concrete mix in accordance with relevant is Code and I to conduct laboratory tests to ensure the target strength & workability criteria} for a given grade of concrete.
- i. IIT, Delhi
 - ii. C.R.R.I, Delhi
 - iii. National Council for Cement & Building Material, Ballabhgarh.
 - iv. Sri Ram Test Laboratory Delhi.

The various ingredients for mix design / laboratory tests shall be sent to the lab / test houses through the Engineer-in-charge and the samples of such aggregates sent shall be preserved at site by the department. In the event if at the four laboratories are unable to carry out the requisite design / testing, the contractor may have it done from any other laboratory with prior approval of the Chief Engineer, APMC, AZADPUR, Delhi.

- 2.1.5 The contractor shall submit the report on design mix from any of the above approved laboratories for approval of Engineer-in-Charge within 45 days from the date of issue of letter of award of work. No concreting shall be done until the design mix is approved. In case of white Portland cement and the likely use of admixtures in concrete with ordinary Portland/white Portland cement, the contractor shall design and test the concrete mix by using trial mixes with white cement and / or admixtures also, for which nothing extra shall be payable.

- 2.1.6 In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, a revised laboratory mix design report conducted at laboratory established at site shall be submitted by the contractor as per the direction of the Engineer-in-charge.
- 2.1.7 All cost of mix designing and testing connected therewith including charges payable to the laboratory shall be borne by the Contractor including redesigning of the concrete mix whenever required & as directed by Engineer-in-charge.
- 2.1.8 The mix design for a specified grade of concrete shall be done for a target mean compressive strength $T_{ck} = F_{ck} + 1.65s$

Where F_{ck} = Characteristic compressive strength at 28 days.
 s = Standard deviation which depends on degree of quality control.

The standard deviation for different grades of concrete shall be as follows:-

Grade of Concrete	Standard Deviation
M-20	4.0
M-25	4.0
M-30	5.0
M-35	5.0

2.1.9 TRIAL BATCHES

- The designed mix proportions shall be checked for target mean compressive strength by means of trial batches.
- Minimum three sets of separate preliminary tests shall be carried out for each trial batch of concrete mix. Each test shall comprise of six specimens and only one test-set of six specimens shall be made on any particular day.
- The quantities of materials for each trial mix shall be sufficient for at least six specimens (cubes) and the concrete required for carrying out workability tests.
- The workability of trial mix No. 1 shall be measured and mix shall be carefully observed for freedom from segregation, bleeding and its finishing characteristics. The water content, if required, shall be adjusted corresponding to the required changes in the workability.
- With the modified water content, the mix proportions shall be recalculated by keeping with water cement ratio unchanged. The mix proportion, as modified, shall form the Trial Mix No. 2 and tested for the specified strength and workability.
- In addition, trial mix No. 3 and 4 shall be designed by keeping water contents same as that determined for trial mix 2 but varying the water cement ratio by ± 10 percent of the specified value and tested for their design characteristics.
- Out of the six specimen of each set, three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the

strength to be attained at 28 days. While the design mix shall be approved only on the basis of test strength at 28 days.

2.1.10 APPROVAL OF DESIGN MIX

The design mix shall be considered satisfactory and approved if at least three preliminary test-sets individually satisfy the following strength and workability criteria:

- (a) The average strength of each test-set is not less than the specified target mean compressive strength (T_{ck})
- (b) The strength of any specimen cube is not less than $0.85 T_{ck}$.
- (c) The concrete mix is of required degree of workability and acceptable concrete finish.

2.1.11 BATCHING & MIXING:-

- (a) All concreting shall be done using computerized automatic concrete batching-' plant of adequate capacity keeping in view the stipulated period of completion i. e. 15 months & required quantity of cement concrete using automatic admixture dispenser which shall be installed by contractor and shall be calibrated & tested. The computerized batching plant shall conform to relevant IS code. It shall have the facilities of data printouts, presetting the quantity to be weighed with automatic cut-off when the same is achieved.
- (b) All Precautions shall be taken during handling of concrete to achieve the desired strength, durability, etc. as envisaged in the mix design. The contractor shall be fully responsible for quality of concrete including input control, production, transportation and placement etc. The Engineer-in-Charge reserve the right to deploy his supervisor at plant to inspect at any such stage and reject the material / concrete etc if he is not satisfied about quality of material / product.

The design mix concrete will be designed based on principle given in IS-456, 2000 and SP 23 for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting requirement specified.

In case of use of admixture and / or white cement, the mix shall be designed with these ingredients as well.

- (c) All measuring equipment shall be maintained in a clean and serviceable condition and their accuracy shall be checked at least once a month.
- (d) Only single sized good quality stone aggregate shall be brought to site of work from the approved source. The grading of the stone aggregate shall be controlled by blending the aggregate of different sizes in the required proportions at site of work, as design mix approved.

The aggregate of different sizes shall be stock-piled separately, preferably a day before use.

The grading of coarse and fine aggregates shall be checked as frequently as possible and as directed by the Engineer-In-Charge to ensure that the specified grading and quality of aggregate is maintained.

- (e) It is important to maintain the water cement ratio constant at its specified or approved value by making adjustment for the moisture contents of both fine and coarse aggregates.

The moisture contents in the aggregate shall be determined as frequently as possible in keeping with the weather conditions and as per the provisions of IS:2386 (Part-III).

2.1.12 **LAYING** -The concrete shall be placed in position using tower crane or concrete pumps or mechanical hoist or combination of adequate capacity. Nothing extra for laying concrete using concrete pumps or for extra concrete mix design shall be paid.

2.1.13 All other operations in concreting work like mixing, slump, laying, placing of concrete, compaction, curing etc. not mentioned in this particular specifications for Design Mix of Concrete shall be as per CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.

2.1.14 **SAMPLING:-**

- (a) Samples from fresh concrete being used at work shall be taken as per IS 1199-1959 and the test cubes shall be made, cured and tested in accordance with IS : 516-~959.
- (b) Each test sample shall comprise of six test cubes (specimen), three of which shall be tested at 7 days and remaining for tests at 28 days.
- (c) **FREQUENCY OF SAMPLING:-**
- (i) A random sampling procedure shall be adopted to ensure that the sampling is spread over the entire period of concreting and cover all mixing units.
- (ii) At least one test sample shall be taken for each lot of concrete work.
- (iii) Each grade of concrete shall form different lot for testing.
- (iv) The minimum frequency- of sampling of concrete of each grade shall be in accordance with the following:-

Quantity of Concrete in the work, cubic meter per day.	Number of samples
1-5	1
6-15	2
16-30	3
31-50	4
51 & above	4 Plus one additional sample for each additional 15 cubic meter or part thereof.

- (v) The concrete work shall be assessed on day to day basis & samples shall be taken as specified.
- (vi) Work strength test shall be conducted in accordance with IS:516 on random sampling.

2.1.15 **TEST RESULTS OF SAMPLES:-**

The test results of the sample shall be the average of the strength of three specimens. The individual variation shall not be more than $\pm 15\%$ percent of the average. If variation is more, the test results shall be treated as invalid. 90% of the total tests shall be done at the laboratory established at site by the contractor and remaining 10% in the laboratory as directed by the Engineer-in-Charge.

2.1.16 **STANDARD OF ACCEPTANCE:-**

- (i) In case the test results of all the samples are above the characteristic compressive strength, the concrete shall be accepted.
- (ii) In case the test result of one or more samples fails to meet the requirement (i) above, it shall be accepted if it meets the requirement as laid down in CPWD Specification 2009.
- (iii) Concrete of each grade shall be assessed separately.
- (iv) Concrete is liable to be rejected, if it is porous or honeycombed. Its placing has been interrupted without providing a proper construction joint, the reinforcement has been displaced beyond the tolerances specified, or construction tolerances have not been met.

2.1.17 Measurement-

- (i) As per CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.
- (ii) In respect of all projected slabs at all levels including cantilever, canopy, the payment for the RCC work shall be made under the item RCC slabs. The payment for shuttering at the edges shall be made under item of centering and shuttering for RCC slabs. Nothing extra shall be paid for the side shuttering at the edge of these projected balconies / projected verandah slabs.

2.1.18 Tolerances - As per CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.

2.1.19 Rates: -

- (i) As per CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.
- (ii) The rate includes the cost of materials, labour and T&P, including mixing placing transportation involved in all the operations described above except for the cost of centering, shuttering & reinforcement which will be paid for separately.
- (iii) In case of rejection of concrete on account of unacceptable compressive strength, governed by Para "Standard of Acceptance- as above, the work for which samples have failed shall be redone at the cost of contractor. However, the Engineer-in-charge may order for additional tests (like cutting cores, ultrasonic pulse velocity test, load test on structure or part of structure, etc) to be carried out at the cost of contractor to ascertain if the portion of structure wherein concrete represented by the sample has been used, can be retained on the basis of results of individual or combination of these tests. The Contractor shall take remedial measures necessary to retain the structure as approved by the Engineer -in-charge without any extra cost. However, for payment, the basis of rate payable to contractor shall be governed by the 28 days cube test results and reduced rates shall be regulated in accordance with CPWD Specifications 2009.

2.2 Condition for READY MIX CONCRETE

- 2.2.1 The contractor shall be allowed to arrange Ready Mix Concrete (RMC) from the RMC producing plants (located within 50 km distance from the site work) supplying

concrete in Delhi.

- 2.2.2 The contractor shall, within a 15 days of award of the work, submit list of at least three RMC producer of repute along with details of such plants including details and number of transmit mixture & 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 contractor) and supplier (RMC Producer) to the Engineer-in-Charge. Engineer-in-Charge shall give approval in writing (subject to drawl of MOU) failing which the contractor shall give list of other RMC producers of repute along with required details for approval of Engineer-in-Charge. The contractor shall draw the MOU with approved RMC producer and submit to Engineer -in-Charge within a week of such approval. The contractor will not be allowed to use ready mix-concrete without completion of above stated formalities.
- 2.2.3 Notwithstanding the approval granted by Engineer-in-Charge in aforesaid manner or provisions in CPWD specification 2009, the contractor shall be fully responsible for quality of concrete including input control, transportation and placement etc.
- 2.2.3.1 For all purposes the contractor shall carry out fully, the responsibilities of the "placement contractor" and the "manufacturer of concrete"
- 2.2.4 The Engineer-in-Charge reserves the right to inspect at any stage and reject the concrete if he is not satisfied about quality of product at the user's end.
- 2.2.5 The Engineer-in-Charge reserves the right to exercise control over the:
- (i) Ingredients water and admixtures purchased, stored and to be used in the concrete including conducting of test for checking of materials, recording of test results and declaring the materials fit or unfit for use in production of mix.
 - (ii) Calibration check of RMC
 - (iii) Weight and quantity check on the ingredients, water and admixtures added for batch mixing
 - (iv) Time of mixing of concrete.
 - (v) Testing of fresh concrete, recording of result and declaring the mix fit or unfit for use. This will including continues control on the workability during production and taking corrective action, if required.
 - (vi) For exercising such control, the Engineer-in-Charge shall periodically depute his authorized representative at the RMC. It shall be responsibility of the contractor to ensure that all necessary equipment, manpower & facilities are made available to Engineer -in-Charge and / or his authorized representative at RMC plant.
- 2.2.6 The contractor should therefore draw MOU/agreement with RMC producer very carefully keeping view all terms and conditions / specifications forming part of this tender document.
- 2.2.7 All required relevant records of RMC shall be made available to the Engineer-in-

Charge or his authorized representative. Engineer-in-Charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of materials, production & transportation of concrete mix which shall be binding on the contractor and the RMC plant. Only concrete as approved in design mix by Engineer-in-Charge shall be produced in RMC Plant and transportation / pumping to the work place.

2.2.8 43 Grade OPC (Conforming to IS: 8112) of brand / make / source as approved by Engineer-in-Charge shall only be used for production of concrete.

2.2.9 **Quality control of Batch Mixed Concrete.**

It shall be the responsibility of the contractor to ensure that RMC producer to provides all necessary testing equipments and take all necessary measures to ensure Quality Control of ready mixed concrete. In general the required measures shall be: -

(i) **Control of purchased material quality.**

RMC producer shall ensure that the materials purchased and used in the production of concrete conform to the stipulation of the relevant agreed standard and the requirements of the concrete mix design and quality control procedures. This shall be accomplished by visual checks, sampling and testing, certification from materials supplier and information / data from materials supplier. Necessary equipment for the testing of all material shall be provided and maintained in calibration condition at the plant by RMC producer.

(ii) **Control of material storage.**

Adequate and effective storage arrangement shall be provided by RMC producer at RMC plant for reliable transfer and feed systems, drainage of aggregates, prevention of freezing or excessive solar heating of aggregate, prevention of contamination etc.

(iii) **Record of Mix design and mix design modification.**

RMC producer shall ensure that record of mix design and modification is ready available in his computer at RMC plant for inspection of Engineer-in-Charge or his authorized representative at any time. Any modification in mix design shall be done only after the approval of Engineer -in-Charge.

(iv) **Transfer and weighing equipments.**

RMC producer shall ensure that a documented calibration procedure is in place. Proper calibration records shall be made available indicating date of next calibration due & corrective action taken. RMC producer shall ensure additional calibration checks whenever required by Engineer-in-Charge in writing to contractor. RMC producer shall also maintain a daily production record including details of customers to whom RMC was supplied including details of mixes supplied. Record shall also be maintained of what materials were used for each day's production including water and admixtures.

The accuracy of measuring equipment shall be within ± 2 % of quantity of cement & ± 3 % of quantity of aggregate, admixture and water being measured.

(v) **Maintenance of Plant, Truck Mixture and Pumps.**

Plant, Truck Mixtures and Pumps should be well maintained so as to not hamper any operation of production, transportation and placement of concrete.

(vi) **Production of concrete at RMC producing plant**

- (a) Weighting (correct reading of batch data accurate weighing): - For each load, written, printed or graphical records shall be made of the weights of the materials batched, the estimate slumps, the total amount of water added to the load, the delivery tickets number for that load and the time of loading the concrete into the truck.
- (b) Visual observation of concrete production and delivery or during sampling and testing of fresh concrete (assessment of uniformity, cohesion, workability, adjustment to water content): - The workability of the concrete shall be controlled on a continuous basis during production. The batch mix found unfit shall not be loaded for placement. Necessary corrective action shall be taken in the production of mix as required for further batches.
- (c) Adequate testing equipment at the plant including equipment for measuring surface moisture content of aggregates shall be provided by the RMC producer.
- (d) Making corresponding adjustment at the plant automatically or manually to batched quantities to allow for observed, measured or reported changes in materials or concrete qualities.
- (e) Sampling of concrete, testing, monitoring of results.
- (f) Diagnosis and correction of faults identified from observations /complaints
- (g) Control of designed and prescribed mixes: a quality control system shall be operated to control the strength of designed mixes the required levels. The system shall include continuous analysis of results from cube tests.

(vii) **Testing Of Concrete:-**

- i) The contractor shall produce all the materials in advance so that there is sufficient time for testing and approving the material and clearance of the same before use in work. Samples of various materials required for testing shall be provided free of charge by the contractor. The samples shall be tested before finalization of work or during the execution of work.
- ii) Samples of RMC shall be sent to Govt. lab for checking of comprehensive strength as per provisions of mandatory tested made in CPWD specification. Out of which lead two testes shall be got tested from CPWD Laboratory or any Govt. Lab for chemical analysis of concrete. In case, the sample fails, the cost of samples shall be borne by the contractor.
- iii) The first concrete mix design/laboratory tests, with admixture will be carried out by the contractor through one of following laboratories/Test houses.

- 1) I.I.T. Delhi.
- 2) National Council of Cement & Building Material, Ballabgarh.
- 3) CRRI, Delhi

The various ingredients for mix design/laboratory tests shall be sent to the lab/test houses through the Engineer-in-charge and the samples of such aggregates sent shall be preserved at site by the department.

- iv) Thickness shall also be checked randomly by adopting core cutting method for executed work as per direction of engineer-in-charge. The payment shall be made after satisfactory results of the test before every running bill.

The expenditure required to be incurred for taking the samples conveyance packing etc. for testing the chemical/ analysis, under clause 29 B (i) and (ii) shall be borne by the contractor/department in the manner indicated below:-

- a) By the contractor, if the results show that the test results received from CPWD Lab or any Govt. lab does not match the approved design mix formula.
- b) By the department, if the results show that results received from CPWD lab or any govt. Lab matched the approved design mix formula.

- viii) **Curing**:- All works involving cement i.e. cement concrete, brick work cement plaster etc. shall be properly cured by keeping them constantly moist for at least a period of one week casting.

2.3 FORM WORK

- 2.3.1 The work shall be done in general as per CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.
- 2.3.2 The contractor has to arrange at site centering and shuttering of adequate plan area. Only M.S. centering shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, marine-ply shuttering in exceptional cases as per site requirement may be used on specific request from contractor to be approved by the Engineer-in-charge.
- 2.3.3 Steel shuttering as approved by the engineer-in-charge shall be used by the contractor. Minimum size of shuttering plates shall be 600mm x 900mm except for the case when closing pieces required completing the shuttering panels.

Dented, broken, cracked, twisted or rusted shuttering plates shall not be allowed to be used on the work.

The shuttering plates shall be cleaned properly with electrically driven sanders to remove any cement slurry or cement mortar or rust. Proper shuttering oil or de-bonding compound shall be applied on the surface of the shutter plates in the requisite quantity before assembly of steel reinforcement.

2.4 REINFORCEMENT:-

- 2.4.1 The reinforcement shall be done as per CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.

- 2.4.2 The rate of item of reinforcement of RCC work includes all operations including straightening, cutting, bending, welding, binding with annealed steel or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specification 2009.
- 2.4.3 The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. Spacer blocks shall be cast well in advance with approved proprietary pre-packed free flowing mortars of high early strength and same colour as surrounding concrete precast cement mortar/concrete blocks/blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-charge, rate of RCC items is inclusive of cost of such cover blocks.
- 2.4.4 The reinforcement bars not to be placed directly on the ground, in rainy season, due to lack of drainage, the water accumulates causing considerable corrosion of steel to avoid this, steel bars should be stored about 30 to 45 cm above ground. A coat of cement wash should be given to steel bars. Nothing extra shall be paid on this account.

2.5 PRE-CAST RCC WORK

- 2.5.1 The work shall be done in accordance with CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.
- 2.5.2 Pre-cast reinforced concrete units shall be of grade or mix as specified. Provision shall be made in the mould to accommodate fixing devices such as hooks etc. and forming of notches and holes. Each unit shall be cast in one operation. A sample of the unit shall be got approved from Engineer -in-charge before taking up the work.
- 2.5.3 Pre-cast units shall be clearly marked to indicate the top of member and its location.**

- 2.5.4 Pre-cast units shall be stored, transported and placed in position in such a manner that these are not damaged.
- 2.5.5 The compaction of the concrete shall be done by vibrating, table or external vibrator, as approved by Engineer -in-charge. The rate quoted for the item shall include the element for framework and mechanical vibration.
- 2.5.6 Rate for item includes cost of all materials, labour, and all operations involved. Cost of M.S. frames, lugs including their welding, lifting hooks is also included.

2.6 ROAD WORK:

- 2.6.1 The work shall be done in accordance with CPWD Specification 2009 Vol. -I & II with correction slips issued upto the last date of Submission of tender.
- 2.6.2 For GSB and DLL work (if applicable) MORTH specification shall be followed.

3.1 Third Party Quality Assurance

The 3rd party quality assurance is likely to be carried out by one of the agencies i.e. DTU, IITDelhi, IITRoorkee, RITES, WAPCOS, PEC Chandigarh or any other agency as decided by the Engineer-in-charge. The decision of Engineer-in-charge in this regard shall be final and binding on the contractor. The 100% of the work carried out by the contractor is subjected to check by any of the third party mentioned above apart from the DAMB/APMC azadpur officers. All necessary field/lab test (s) as per CPWD/internal specifications shall be carried out by the consultants through there in house labs or any other reputed lab for the correctness of the test result.

The sample shall be collected and sealed by the consultant for quality check in the presence of contractor and departmental officers and shall be signed by the all three parties in the prescribed performa in taken of their acceptance. However, the test to be carried out by the consultant/third party from external laboratory the contractor shall supply the material free of charge including transporting to the laboratory.

The contractor shall provide all necessary support, co-operation assistance in obtaining the sample and carrying out the field/laboratory test as required by third party from time to time. This may includes provisions of labour assistance in packing and dispatching of materials etc. and any other assistance considered necessary in connection with quality control in works.

11.0 LIST OF PREFERRED APPROVED MAKES FOR CIVIL WORKS

- | | |
|----------------------------|--|
| 1. Admixture for concrete | Cico, Sika, Pidilite |
| 2. Steel reinforcement | SAIL, TISCO, RINL etc. |
| 3. HDPE Pipe:- | (1) Berlia (2) Gamson (3) Utkarsh (4) Jain Irrigation (5) Duraline India (6) Sugar Plastic |
| 4. RMC :- | (1) L& T, (2) ACC, (3) Ultra -tech, (4) CK & all other equivalent plants approved by DAMB. |
| 5. Water proofing Material | Cico, Sika, Pidilite. |

12.0 CORRECTION SLIP

- i) Wherever, there is a reference of CPWD officers it shall construed to mean officers and other staff of Delhi Agricultural Marketing Board as applicable therein.
- ii) The reference of government in the tender form shall constructed to means Delhi Agricultural Marketing Board in connection with payments or other contractual implications. For all acts and regulations the reference of Govt. and the orders of government shall be followed.
- iii) The contractor shall obtain a valid licence of the enrolment in Delhi Labour Welfare Board regarding contribution/statutory Deposit under the Bombay Labour Welfare Fund Act, 1953 as extended to NCT of Delhi. Contractor shall deposit all the statutory dues with the Delhi Labour Welfare Board directly.

**Executive Engineer,
APMC Azadpur**

FAIR WAGES SCHEDULE

The latest minimum fair wages schedule as in force in Delhi Govt. at the time of opening of tender shall be applicable.

13.0 FORM OF BANK GUARANTEE BOND

2. In consideration of the SECRETARY, APMC, AZADPUR (hereinafter called "APMC, AZADPUR") having agreed to exempt
 (Hereinafter called the said contractor(s) from the demand under the terms and conditions of Tender No. invited for the work of

.....
 (Hereinafter called "The said tender") part earnest money for compliance of his obligations in accordance with the terms and conditions of the said tender, on production of a irrevocable Bank Guarantee for Rs. (Rupees
 only), we (indicate the name of the bank) (hereinafter referred to as "the Bank) hereby undertake to pay to APMC, AZADPUR an amount not exceeding Rs. (Rupeesonly) on demand by APMC, AZADPUR.

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 APMC, AZADPUR stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(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 (indicate the name of the bank) the said bank further undertake to pay to APMC, AZADPUR any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(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 said tender and that it shall continue to be enforceable till all the dues of APMC, AZADPUR under or by virtue of the said tender have been fully paid and its claims satisfied or discharged or till Engineer-in-charge on behalf of APMC, AZADPUR certified that the terms and conditions of the said tender have been fully and properly carried out by the said contractor (s) and accordingly discharges this guarantee.

5. We (indicate name of the bank) further agree with APMC, AZADPUR that APMC, AZADPUR 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 tender or to extend time of tender by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by APMC, AZADPUR against the said contractor(s) and to for bear or enforce any of the terms and conditions relating to the said tender and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor(s) or for any for-bearance, act of omission on the part of APMC, AZADPUR or any indulgence by APMC, AZADPUR to the said contractor(s) or by any such matter of 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 contractor(s).

7. We (indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of APMC, AZADPUR in writing.

8. This guarantee shall be valid upto unless extended on demand by APMC, AZADPUR. Notwithstanding anything mentioned above, our 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.

Date the day of for

.....

(indicate the name of Bank).

AFFIDAVIT

I/We have submitted a Bank Guarantee for the work

(Name of work)

Agreement No. dated from

(Name of the Bank with full address)

to the Executive Engineer..... with a view to seek exemption from payment of security deposit/performance guarantee in cash. This bank guarantee expire on I/We undertake to keep the validity of the bank guarantee intact by getting it extended from time to time at my/our initiative upto a period of months after the recorded. date of completion of the work or as directed by the Engineer-in-charge.

I/We also indemnify APMC, AZADPUR against any losses arising out of non encashment of the bank guarantee, if any.

Note: The affidavit is to be given by the executant before a first class Magistrate

GUARANTEE TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF RAINWATER HARVESTING WORKS

The agreement made this day ofbetween S/o (hereinafter called the GUARANTOR of the one part) and the SECRETARY, APMC, AZADPUR (hereinafter called APMC, AZADPUR of the other part)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated and made between the GUARANTOR OF THE ONE PART AND APMC, AZADPUR of the other part whereby the contractor interalia undertook to development work of site in the said contract recited including Rainwater Harvesting .

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain perfect and operation for the defined maintenance period from the date of completion of work.

NOW THE GUARANTOR hereby guarantee that work executed by him will render the structures completely operational for 5 years to be reckoned form the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer-in-charge with regard to nature and cause of defect shall be final and binding on Guarantor.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect being found, render the structure operational to the satisfaction of 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 contractor 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.

IN WITNESS WHEREOF these presents have been executed by the obligator andby..... for and on behalf of the SECRETARY, APMC, AZADPUR on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of:-

1. 2.

SIGNED FOR AND BEHALF OF THE SECRETARY, APMC, AZADPUR BY..... in the presence of :-

1. 2.

14. Confirmation

I/We conform that the NIT, General and Salient points to the General condition, Additional General Condition, Special Condition, Particular Specification and other details appended in the documents have been fully examined and fully cognizance taken therein for arriving at the item unit prices and total amount and tendered sums contained therein my/our tender.

Contractor

AGRICULTURAL PRODUCE MARKETING COMMITTEE
MARKET OF NATIONAL IMPORTANCE
NEW OFFICE COMPLEX, NFM- PH-II, SARAI PIPAL THALLA, AZADPUR, DELHI-33

Estimated cost:-3,07,31,724/-
 Earnest Money:-32,21,000/-
 Time :-9 Months

Schedule of Quantity

Name of Work: Improvement of lanes and by lanes, ramps etc. including sewer and storm water drainage system in A and D block NSM, Azadpur					
Sub Head: Construction work					
S No	Description	Quantity	Unit	Rate	Amount
1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m, disposed earth to be levelled and neatly dressed. FOR MANHOLES, Sewer lines, storm water drain All kinds of soil	2052.88	Cum.		
2	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, including getting out the excavated soil, and then returning the soil as required, inlayers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m : All kinds of soil				
2.1	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	1577.80	Metre		
2.2	Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm.	468.13	Metre		
3	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m. @50% of Quantities as per Item no. 2.6.1	1026.44	Cum		
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : UNDER THE ROAD FOR MAKING CAMBER & BASE				
4.1	1:2:4 (1 Cement : 2 fine sand : 4 graded stone aggregate 40 mm nominal size). PCC Bed under HDPE Pipe cross road	141.27	Cum		

4.2	1:4:8 (1 Cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size). PCC Bed under HDPE Pipe cross road	279.48	Cum		
5	Steel reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. (8mm bar to be laid below CC.) Thermo-Mechnacially Treated bars	6441.88	Kg.		
6	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in: BRICK WORK ON STROM WATER DRAIN Cement mortar 1:6 (1 cement : 6 coarse sand)	201.10	Cum		
7	Providing and fixing M.S. holder bat clamps of approved design to C.I. or S.C.I. rain water pipes embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and cost of cutting holes and making good the walls etc. : 100 mm diameter : FOR PVC VENTS PIPE	416.00	No.		
8	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, (i)Single socketed pipes. 110 mm diameter : FOR VENTS PIPE	624.00	Metre		
9	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. FOR VENTS PIPE				
9.1	Coupler/ top cover perforated 110mm	104.00	No.		
9.2	Bend 87.5° 110 mm bend	104.00	No.		
10	15 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement on the rough side of single or half brick wall. CEMENT PLASTER INSIDE THE STROM WATER DRAIN INCLUDING ROUNDING OF CORNERS	2429.59	Sqm		
11	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade : ON MS FRAME TO SUPPORT DRAIN COVER Two or more coats on new work.	45.00	Sqm		

12	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. FOR NEW MANHOLE Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	45.48	Cum		
13	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In cement mortar	199.93	Cum		
14	Dismantling G.I. pipes (external work) including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means including stacking of pipes within 50 metres lead as per direction of Engineer-in-charge :				
	AT MISC. LOCATIONS				
14.1	15 mm to 40 mm nominal bore	6.00	Metre		
14.2	Above 40 mm nominal bore	6.00	Metre		
15	Dismantling of road gully chamber of various sizes including C.I. grating with frame including stacking of useful materials near the site and disposal of unserviceable materials within 50metres lead including refilling the excavated gap.	506.00	No.		
16	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all loads including all lifts involved.	6323.79	Cum		
17	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable aterial within 50 metre lead as per direction of Engineer-in-Charge. TO MAKE ROAD INCLUDING MANHOLES AND SEWER LINES / DRAINS	9751.00	Sqm		
18	Dismantling of old S.W. pipes including breaking of joints and bed concrete stacking of useful materials near the site within 50 m lead and disposal of unserviceable materials into municipal dumps: DISMANLING OF RCC PIPE LINES				
18.1	300 mm diameter	400.00	Metre		
18.2	450 mm diameter	120.00	Metre		
19	Constructing brick masonry manhole in cement mortar 1:4 (1 cement :4 coarse sand) with	88.00	Each		

	R.C.C. top slab with 1:2:4 mix (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 Cement : 3 coarse sand) finished with floating coat of neat cement and making channels in finished with a floating coat of neat cement complete as per standard design: Inside size 90x80 cm and 45 cm deep including C.I. Over with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg): With common burnt clay F.P.S (non-modular) bricks of class designation 7.5				
20	Constructing brick masonry circular type manhole 0.19 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12mm thick with cement mortar 1:3 (1cement :3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement, all complete as per standard design : FOR SEWER LINES 0.91 m deep with SFRC Cover and frame (heavy duty HD- 20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg. fixed in cement concrete 1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size) including centering, shuttering all complete.(Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) : With Sewer bricks conforming IS : 4885	49.00	No.		
21	Extra depth for circular type manhole 0.91 m internal dia (at bottom) beyond 0.91 m to 1.67 m FOR SEWER LINES With sewer bricks conforming IS : 4885	2.00	Metre		
22	Constructing brick masonry circular type manhole 1.22m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12mm thick with cement mortar 1:3 (1cement :3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :	19.00	No.		

	<p>FOR SEWER LINES 1.68 m deep with SFRC Cover and frame (heavy duty HD- 20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg. fixed in cement concrete 1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size) including centering, shuttering all complete.(Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :</p> <p>With Sewer bricks conforming IS : 4885</p>				
23	<p>Constructing brick masonry circular type manhole 1.52 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand) inside cement plaster 12mm thick with cement mortar 1:3 (1cement :3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement, all complete as per standard design : FOR SEWER LINES 2.30 m deep with SFRC Cover and frame (heavy duty HD- 20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg. fixed in cement concrete 1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size) including centering, shuttering all complete.(Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :</p> <p>With common burnt cla F.P.S (non modular) bricks of class designation 7.5</p> <p>FOR SEWER LINES</p>	85.00	No.		
24	<p>Providing orange colour safety foot rest of mininum 6 mm thick plastic encapsulated as per IS: 10910 on 12mm dia steel bar confirming to IS: 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.</p> <p>FOR MANHOLES</p>	211.00	No.		
25	<p>Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement :</p>				

	3 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete :				
23.1	For pipes 100 to 250 mm diameter : 160 dia HDPE PIPE	526.00	No.		
23.2	For pipes 250 to 300 mm diameter : 355 dia HDPE PIPE	131.77	No.		
23.3	For pipes 350 to 450 mm diameter : 450 dia HDPE PIPE	5.00	No.		
26	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement :4 coarse sand) C.I. Over with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of over 23 kg and weight of frame of 15 kg), R.C.C. top slab with 1:2:4 mix (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 mix (1 Cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 Cement : 3 coarse sand) finished smooth with floating coat of neat cement on walls and bed concrete etc. complete as per standard design:				
26.1	Inside dimensions 500x700 mm and 45 mm deep for pipe line with one or two inlets: With common burnt clay F.P.S. (non-modular) bricks of class designation 7.5	414.00	Each		
26.2	Inside dimensions 600x850 mm and 45 mm deep for pipe line with one or two inlets: With common burnt clay F.P.S. (non-modular) bricks of class designation 7.5	212.00	Each		
27	Providing and laying C.c. Pavement of mix C-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-Charge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).	1462.65	Cum		
28	Replacement of existing RCC pipe with HDPE pipe as per IS 14333 PE80, PN 2.5 with the help of pentode device by pipe bursting at the same time including all cost.				
28.1	300mm to 375mm	76.49	Metre		
28.2	450mm to 500mm	65.13	Metre		
29	Providing and laying jointing /welding the HDPE pipes of quality IS14333/96 medium grade of following sizes:(Excluding cost of excavation & re-filling, cement concrete around.)				
29.1	160 mm dia x 7.7 - 8.7mm th. of weight 3.75kg. Per meter	1997.08	Metre		
29.2	250 mm dia x 17.0 - 18.5mm th. of weight 18.50kg. Per meter	548.61	Metre		
29.3	315 mm dia x 17.0 - 18.5mm th. of weight 30kg. Per meter	291.00	Metre		
29.4	355 mm dia x 21.0 – 22.0mm th. of weight 30kg. Per meter	232.53	Metre		

30	Providing and fixing gully gating, factory made precast SFRC perforated drain covers with frame, having concrete of strength not less than M-25, of size 500 x 450 x 75 mm, reinforced with 88 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. Heavy reinforced and heavy duty 500x400x75 mm, all as per direction of Engineer-in-Charge. DRAIN COVER ON TOP OF STORM WATER DRAIN MAKING COVER SIZE 500x400x75 WITH 10MM DIA TMT REINFORCEMENT BARS @80MM C/C BOTH WAYS.	2328.00	Each		
		Total			

I/we have read the conditions of contract carefully and am/are ready to carry out the same job at the rate mentioned against each item of the above mentioned schedule.

Signature of the contractor with Seal