Bhopal Smart City Development Corporation Limited

REQUEST FOR PROPOSAL

January 2018

"Supply, Installation, finishing, furnishing and other Interior Works for Second and Third floor at Bhopal Smart City Development Corporation Ltd. office"

Prepared by Recommended by Approved by

CONTENTS

SECTION-1

NOTICE INVITING TENDER

BHOPAL SMART CITY DEVELOPMENT CORPORATION LIMITED

NOTICE INVITING TENDER (NIT)

BSCDCL invites online item rate tender as per schedule as under:

Tendering Document No.	:	MPBSCDCL/TENDER NO - 42
Name of the Work	:	Supply, Installation, finishing, furnishing and other Interior Works for Second and Third floor at Bhopal Smart City Development Corporation Ltd. office
Brief Scope of Work	:	The brief scope of work comprises of Carrying out supply and erection of various interior fit out for the Second and Third floor floor,including furniture, internal partitions and finishes etc.,Raised access flooring with edge supported rigid grid system (lay-in tiles).Soft furnishings like blinds, carpets, sofa, etc. Floor finishing with marble/granite/vitrified tiles/ Kota stones/ArtificialMarble/Granite etc. False ceiling work including metal & specialised ceiling. With respect to Approved makes and Technical Specifications of CPWD/MPPWD
Estimated Cost	:	Rs 5.93 Cr (Five Crore Ninety three Lakes only)
Period of Completion	:	Three (3) Months
Earnest Money Deposit	:	Rs. 593990/-(Five Lakes Ninety three thousand Nine hundred ninety rupees)
Non-refundable cost of e- Tender Document	:	Rs. 20,000/- (Twenty Thousand)
Purchase of Tender Start Date	:	02.01.18, 18:00 Hrs
Purchase of Tender End Date	:	23.01.18, 23:00 Hrs
Last date & time of submission of Online Tender	:	23.01.18, 23:30 Hrs
Period during which hard copy of the documents as per NIT shall be submitted.	:	24.01.18, 12:00 Hrs
Date & Time of Opening of technical Bid (Envelope B)	:	24.01.18, 13:30 Hrs
Date & Time of Opening of Financial Bid (Envelope C)	:	Will be intimated to the successful bidders.
Validity of offer		90 days from the date of opening of Financial bid.
Pre-Tender Meeting & Venue		08.01.18, 16:00 Hrs

The tender document can be downloaded from www.mpeproc.gov.in **"Corrigendum, if any, would appear only on the** www.mpeproc.gov.in **web site and not to be published in any News Paper".**

- The intending Bidder must read the terms and conditions of BSCDCL carefully. He should only submit his tender if he considers himself eligible and he is in possession of all the documents required.
  a) Information and Instructions for Bidder posted on Website(s) shall form part of Tender Document.

- The Tender Document as uploaded can be viewed and downloaded free of cost by anyone including intending Bidder. But the tender can only be submitted after uploading the mandatory scanned documents such as
  a) Proof of e-payment towards cost of tender document,
  b) Proof of online payment through e-portal www.mpeproc.gov.in/ Bank Guarantee of any Nationalized or Commercial Scheduled Bank against EMD in favor CEO, BSCDCL & All other documents shall be as per Notice Inviting e-tender.
- The Bidders are required to quote strictly as per terms and conditions, specifications, standards given in the tender documents and not to stipulate any deviations.
- After submission of the tender the Bidder can re-submit revised tender any number of times but before last time and date of submission of tender as notified.
- When it is desired by BSCDCL to submit revised financial tender then it shall be mandatory to submit revised financial tender. If not submitted then the tender submitted earlier shall become invalid.
- On opening date, the Bidder can login and see the tender opening process.
- Bidder can upload documents in the form of JPG format and PDF format
- Bidder has to upload scanned copies of all the documents including valid GST registration, PAN NO, TAN NO. as stipulated in the tender document.
- If the bidder is found ineligible after opening of tenders, his tender shall become invalid and cost of tender document and processing fee shall not be refunded.
- If any discrepancy is noticed between the documents as uploaded at the time of submission of tender and hard copies as submitted physically by the contractor the tender shall become invalid and cost of tender document and processing fee shall not be refunded.
- Notwithstanding anything stated above, BSCDCL reserves the right to assess the capabilities and capacity of the Bidder to perform the contract, in the overall interest of BSCDCL. In case, Bidder"s capabilities and capacities are not found satisfactory, BSCDCL reserves the right to reject the tender.
- Certificate of Financial Turn Over: At the time of submission of tender, the tender shall upload Certificate from Chartered Accountant mentioning Financial Turnover of last 3 years or for the period as specified in the tender document and further details if required may be asked from the Bidder after opening of technical tenders. There is no need to upload entire voluminous balance sheet.

The Bidder if required can submit queries in writing on E-mail address. **bscdcl@smartbhopal.city** **before 08.01.18, up to 12:00 hrs**

Annexure-I

MEMORANDUM

Sl. No.	Description	Cl. No. of NIT/ITT/Clauses of Contract (CC)	Values/Description to be Applicable for Relevant Clause (S)
1)	Name of Work		Supply, Installation, finishing, furnishing and other Interior Works for Second and Third floor at Bhopal Smart City Development Corporation Ltd. office
2)	Client/Owner		Bhopal Smart City Development Corporation Limited.
3)	Type of Tender		Percentage rate / Item Rate tender
4)	Earnest Money Deposit		Rs. 593990/-(Five Lakes Ninety three thousand Nine hundred ninety rupees)
5)	Estimated Cost(PAC)		Rs 5.93 Cr (Five Crore Ninety three Lakes only)
6)	Time allowed for Completion of Work		Three (3) months
7)	Mobilization Advance		**10%** of contract value
8)	Interest Rate of Mobilization Advance		Simple Interest Rate of 10 % Percent only) (Per Annum)
9)	Schedule of rates applicable		DSR 2016, MPPWD SOR, NON SOR
10)	Validity of Tender		90 (Ninety) Days
11)	Performance Guarantee		5 % (Five Percent Only) of contract value within 30 days from the issue of Letter of Award before Signing Agreement in the form of Bank gurantee/FDR form nationalized or commercial bank in the favor of CEO,BSCDCL which shall be valid upto 6 months after the date of completion of project.
12)	Security Deposit/Retention Money		5.00% (Five Percent Only) of the gross value of each running bill which will be released after completin of DLP.
13)	Time allowed for starting the work		The date of start of contract shall be reckoned from 10 days after the date of issue of letter of Award .
14	Defect Liability Period		12 month from the date of taking over of the work by the BSCDCL or time allowed Whichever is earlier.
15	Payment of Extra item		Maximum 10% of the contract value, payment as mentioned in the Contract of the clause **(CC) 3.50** SCHEDULE OF QUANTITIES/ BILL OF QUANTITIES.

MANDATORY PROPOSAL (Envelope A)

1. Earnest Money Deposit (EMD)
2. Cost of Document
3. Letter of Acceptance of tender condition as per format enclosed in Annexure-II.

   (*SECTION-5 Forms and Format)

TECHNICAL PROPOSAL (Envelope B)

[PRE-QUALIFICATION CRITERIA FOR BIDDERS]

1. The Bidder shall be registered contractor in of appropriate class with the Central Govt./ State Governments or Central / State Government Undertakings.
2. The Average annual financial turnover for last 3 years(2014-15, 2015-16, 2016-17) shall be at least 30% of the estimated cost put to tender, Copies of balance sheets of last three financial years OR duly certified by a Chartered Accountant shall be submitted in support of the requisite financial Turnover.

3. The Bidder in their own name should have satisfactorily executed the work of similar nature Semi Govt. / Govt.& Public / Private Sector Organizations in India, during **last seven (7) years** ending last day of month previous to the one in which bids are invited as a prime Contractor (In case of private work TDS certificate along with agreement, completion should be submitted)

   Three similar works each costing not less than 40% of the estimated cost put to tender

   OR

   Two similar works each costing not less than 50% of the estimated cost put to tender

   OR

   One similar work costing not less than 80% of the estimated cost.

   The Bidder should demonstrate through submission of experience certificates for collective Experience of handling the following disciplines of work in the above contracts:

   i. Interior Works with furnishing, finishing, plumbing and allied civil works of building.
   ii. Building Glazing, Firefighting & Electrification finishing work of Buildings.

4. Bidder should submit Client/Users Certificate of satisfaction for the work they have completed.

5. Net worth should be positive in last year.

6. Bidder should have GST Registration, EPF Registration Certificate & PAN Card, TAN No, ESIC certificate.(a. Information regarding the constitution of the Applicant/firm e.g. Proprietary, Partnership, Private Ltd. etc. along with proof of the same such as copies of registration/ partnership deed etc.)

7. (a) The Bidder may be a single entity or **Consortium**, coming together to implement the Project. However, no Bidder applying individually or as a member of a Consortium, as the case may be, can be member of another Bidder. The term Bidder used herein would apply to both a single entity and a Consortium.

   (b) Bidder may be a natural person, private entity, or any combination of them with a formal intent to enter into a **Consortium** agreement or under an existing agreement to form a **Consortium**. A **Consortium** shall be eligible for consideration subject to the conditions.

7. **Joint Ventures (JV) are** not allowed.

The copy of above documents shall be submitted by the Bidder along with the hard copies of other required documents and the following list of Documents to be scanned and uploaded within the period of tender submission:

- Proof of online payment / Bank Guarantee of any Nationalized or all commercial Scheduled Bank against EMD in favor of CEO, BSCDCL.
- Copy of documents related to qualifying requirement of bidders as per NIT clause
- Certificate of Financial Turnover duly certified by CA as indicated above.
- Acknowledgement towards cost of tender fee submission.
- All pages of the entire Corrigendum (if any) duly signed by the authorized person.

FINANCIAL PROPOSAL (Envelope C)

1. Bidders who will be found Eligible in **Mandatory & Technical Proposals**, only those financial proposals will be opened.
2. The tender will be awarded to the Bidder with the lowest quoted rate (L1) against the Probable Amount of Contract (PAC).
3. Bidders who will not be found eligible in **Mandatory and Technical Proposals,** they will be rejected and their Financial Proposals will not be opened.

INSTRUCTIONS FOR FINANCIAL BID SUBMISSION-

- Quote should be in percentage higher or below on the SOR Rates the same is to quoted in the form of decimal only. [For example if contractor wants to quote 5 percent higher than he have to quote 1.05 and if he wants to quote 5 percent below he have to quote 0.95 in given column of financial bid sheet].

- Financial Bid format is uploaded in Excel Format in www.mpeproc.gov.in. At the time of financial bidding, bidder is requested to download the file, and update all the excel sheets in the same.
- For Non SOR items bidder can quote for individual item rates in respective financial Bid sheet in the given empty spaces highlighted yellow.
- Bidders are requested to check final figure in all the totals of all sheets. BSCDCL is not responsible for errors in the financial bid document.
- Bidders are required to upload the updated financial bid in the prescribed excel Format in the www.mpeproc.gov.in at the time of final financial bid submission.
- Any space left blank in the bidding sheet, then it will be considered as zero “0”.

SECTION-2

INSTRUCTIONS TO BIDDER

INSTRUCTION TO BIDDER (ITB)

A. GENERAL INSTRUCTIONS:

2.1. General terms of Bidding-

2.1.1.1 No Bidder shall submit more than one BID for the Project.

2.1.1.3 Deleted

2.1.1.4 Deleted

2.1.1.5 The successful bidder needs to submit performance guarantee 5% (Five per cent) of the quoted price and security deposit 5% (Five per cent), which will be released after completion of 5 years.

2.1.1.6 Deleted

2.1.1.7 Deleted

2.1.1.8 The Rate should be quoted including All taxes and Charges & Nothing will be paid extra except Quoted rates.(If any rise in tax or if new tax is imposed by central or State Govt, or any Govt authority after Tender the contractor is to bear the same)

2.1.1.9 All the Civil work Should be repaired with original material including coloring if any breakage or dismantling work is done during installation of the system, including cleaning of the site, for which no extra payment shall be made to the contractor.

2.1.1.10 The rates to be given for furnished complete work, all material, labor wastage, royalties, taxes , lease rent , scaffolding , transportation charges, breakage, making good any damage to wall, ceiling, fitting etc, to make the original finish including painting, transportation, replacement, of any defective material, theft, insurance, variation in market rates, removal of rubbish dismantled material, cleaning of site be included in the quoted rates.

2.1.1.11 the contractor is to arrange for storage of material & its Security arrangement during the installation & commissioning of work.

2.1.1.12 The contractor should submit the one year defective part replacement guarantee, caused due to any reason & two year maintenance services of the system for which no extra payment will be made except quoted rate.

2.1.1.13 The contractor will be fully responsible for any accident, damages, losses, that occurs during the installation & commissioning of work. No compensation will be made by the BSCDCL.

2.1.1.14 The contractor is to take all measures for safety and security for man & material and also to follow all labor laws.

2.1.1.14 The contractor should be registered in EPF & ESIC & necessary certificate of registration shall be submitted during tendering.

2.1.1.16 The Rates should be quoted FOR at site Bhopal.

2.1.2 The Feasibility Report / Preliminary Project Report of the Project has been assessed however the Bidders are expected to carry out their own surveys, investigations and other Preliminary examination of the Project before submitting their Bids. Nothing contained in the attached drawings/BOQ shall be binding on the BSCDCL nor confer any right on the Bidders, and the BSCDCL shall have no liability whatsoever in relation to or arising out of any or all contents of TENDER.

2.1.3 Notwithstanding anything to the contrary contained in this RFP, the Preliminary terms specified in the draft Agreement shall have overriding effect; provided, however, that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under the Agreement.

2.1.4 Deleted.

2.1.5 The Bidder shall deposit a BID Security (EMD) of Rs 593990/- (Five Lakes Ninety three thousand Nine hundred ninety rupees)**. in accordance with the provisions of this RFP. The Bidder has to provide the BID Security (EMD) through online payment or in the form of a Bank Guarantee /Demand Draft (DD)/FDR of any Nationalised or Commercial Scheduled Bank in the favor CEO , BSCDCL as per format at Appendix-II**

Company Name: Bhopal Smart City Development Corporation Limited
Branch Name: Allahabad Bank.
Branch Address: Arera Colony, Bhopal
A/C no. : 50327343809
IFSC Code: ALLA0210197
PAN No. : AAGCB6537N
TIN No. : 23889236926
Service Tax No. : AAGCB6537NSD001
GST no: 23AAGCB6537N1ZE

2.1.6 The validity period of the Bank Guarantee, shall not be less than 180 (one hundred and eighty) days from the BID Due Date, inclusive of a claim period of 60 (Sixty) days, and may be extended as may be mutually agreed between the BSCDCL and the Bidder.

2.1.7 The BID shall be summarily rejected if it is not accompanied by the BID Security. The BID Security shall be refundable no later than 150 (one hundred and fifty) days from the BID Due Date except in the case of the Selected Bidder whose BID Security shall be retained till it has provided a Performance Security under the Agreement.

2.1.8 The Bidder should submit a Power of Attorney as per the format at Appendix-III, Authorizing the signatory of the BID to commit the Bidder.

2.1.9 Any condition or qualification or any other stipulation contained in the BID shall render the BID liable to rejection as a non-responsive BID.

2.1.10 The BID and all communications in relation to or concerning the Bidding Documents and the BID shall be in English language.

2.1.11 The documents including this RFP and all attached documents, provided by the BSCDCL are and shall remain or become the property of the BSCDCL and are Transmitted to the Bidders solely for the purpose of preparation and the submission of a BID in accordance herewith.

Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their BID. The provisions of this Clause shall also apply mutatis mutandis to BIDs and all other documents submitted by the Bidders, and the BSCDCL will not return to the Bidders any BID, document or any information provided along therewith.

2.1.12 This RFP is not transferable.

2.1.13 Any award of Project pursuant to this RFP shall be subject to the terms of Bidding Documents and also fulfilling the criterion as mentioned in clause while bidding is open to persons from any country, the following provisions shall apply then the Eligibility of such Bidder shall be subject to approval of the BSCDCL from national security and public interest perspective. The decision of the BSCDCL in this behalf shall be final and conclusive and binding on the Bidder. The holding or acquisition of equity or control, as above, shall include direct or indirect holding/ acquisition, including by transfer, of the direct or indirect legal or beneficial ownership or control, by persons acting for themselves or in concert and in determining such holding or acquisition, the BSCDCL shall be guided by the principles, precedents and definitions contained in the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations, 1997, or any substitute thereof, as inforce on the date of such acquisition. The Bidder shall promptly inform the BSCDCL of any change in the shareholding, as above, and failure to do so shall render the Bidder liable for disqualification from the Bidding Process.

2.1.14 Not withstanding anything to the contrary contained herein, in the event that the Bid Due Date falls within three months of the closing of the latest financial year of a Bidder, it shall ignore such financial year for the purposes of its Bid and furnish all its information and certification with reference to the 5 (five) years or 1 (one) year, as the case may be, preceding its latest financial year. For the avoidance of doubt, financial year shall, for the Purposes of a Bid hereunder, mean the accounting year followed by the Bidder in the course of its normal business.

2.1.15 Any entity which has been barred by GOI or Govt of Madhya Pradesh, MP DISCOM for the works of expressways, National highways, ISC and EI works, and the bar subsists as on the Bid Due Date, would not be eligible to submit the BID.

2.1.16 The BSCDCL reserves the right to reject an otherwise eligible bidder on the basis of the information given in this tender document. The decision of the BSCDCL in this case shall be final

2.2 Eligibility and qualification requirements of Bidder. For determining the eligibility of Bidder the following shall apply:

(a) A Bidder shall not have a conflict of interest (the "Conflict of Interest") that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified and liable for forfeiture of the BID Security or Performance Security as the case may be. A Bidder shall be deemed to have a Conflict of Interest affecting the Bidding Process, if:

(b) A Bidder shall be liable for disqualification and forfeiture of BID Security, if any legal, financial or technical adviser of the BSCDCL in relation to the Project is engaged by the Bidder, its Member or any Associate thereof, as the case may be, in any manner formatters related to or Incidental to such Project during the Bidding Process or subsequent to the (i) Issue of the LOA or

(ii)Execution of the Agreement. In the even though such adviser is engaged by the selected Bidder or Contractor, as the case may be, after issue of the LOA or execution of the Agreement for matters related or incident alto the project, then notwithstanding anything to the contrary contained herein or in the LOA or the Agreement and without Prejudice to any other right or remedy or the

BSCDCL, including the forfeiture and appropriation of the BID Security or Performance Security, as the case may be, which the BSCDCL may have there under or otherwise, the LOA or the Agreement, as the case may be, shall be liable to be terminated without the BSCDCL being liable in any manner whatsoever to the Selected Bidder or Contractor for the same. For the avoidance or doubt, this disqualification shall not apply where such adviser was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of this RFP.
Nor will this disqualification apply where such adviser is engaged after a period of 3 (three) years from the date of commercial operation of the Project.

OTHER INSTRUCTIONS:-

The pre-qualification / enlistment of the contractors should be valid on the last date of submission of tenders. In case the last date of submission of tender is extended, the pre-qualification of contractor should be valid on the original date of submission of tenders. The tender document as uploaded can be seen on website www.mpeproc.gov.in and can be downloaded free of cost.

Mode of Submission: Earnest Money Deposit: Earnest Money Deposit of amount as mentioned in "NIT/ Memorandum (Annexure-I)" required to be submitted online only or Bank Guarantee from any Nationalized or all Commercial scheduled banks in the enclosed format. The EMD shall be valid for minimum period of 150 (One Hundred Fifty) days from last day of submission of Tender. **The EMD shall be scanned and uploaded to the e-Tendering website within the period of tender submission and original should be deposited in office of BSCDCL**

The EMD of all unsuccessful Bidders will be returned within thirty (30) days of the Award of the contract to successful Bidder or after the receipt of their BGs verified from the Zonal office of the issuing Bank, whichever is later. No interest will be payable by the BSCDCL on the said amount covered under EMD/Any other Security Deposit.

Interested contractor who wish to participate in the tender has also to make following payments through online payment only.
Cost of Tender Document – Rs. 20,000/- To be submit online only/-
E- Tender Processing Fee – As applicable for MPEPROC portal.

EMD/ Tender document fees should be submitted online or in the form of Bank Guarantee against EMD, Cost of Tender Document and, e-Tender Processing Fee online payment receipt accordingly, shall be placed in single sealed envelope superscripted as "Earnest Money, Cost of Tender Document and Cost of e-Tender Processing Fee" with name of work and due date of opening of the tender also mentioned there on.

Copy of pre-qualification/enlistment letter and certificate of work experience (if required) and other documents as specified in the tender shall be scanned and uploaded to the e-Tendering website within the period of tender submission and certified copy of each shall be deposited in a separate envelope marked as "Other Documents".

Both the envelopes shall be placed in another envelope with due mention of Name of work, date & time of opening of tenders and to be submitted in the office of BSCDCL after last date & time of submission of tender.
Online technical tender documents submitted by intending Bidders shall be opened only of those Bidders, who's Earnest Money Deposit, Cost of Tender Document and e-Tender Processing Fee and other documents placed in the envelope are found in order. The Price tender of those Bidders whose

documents found to be in order shall be opened. The date of opening of price tender shall be informed to the Bidder.

The tender submitted shall become invalid if:

- The Bidder is found ineligible/if any document is found fake.
- The Bidder does not upload all the documents (including GST registration) as stipulated in the tender document.
- If any discrepancy is noticed between the documents as uploaded at the time of submission of tender and hard copies as submitted physically in the office of tender opening authority.

VALIDITYOF TENDER

The tender for the works shall remain open for acceptance for a period of Ninety (90) days from the date of opening of financial tender. If any Bidder 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 BSCDCL, then the BSCDCL shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money as aforesaid. Further the Bidders shall not be allowed to participate in the retendering process of work.

ACCEPTANCE OF TENDER

BSCDCL reserves the right to reject any or all the tenders in part or full without assigning any reason whatsoever. BSCDCL does not bind itself to accept the lowest tender. The BSCDCL reserves the right to award the work to a single party or split the work amongst two or more parties as deemed necessary without assigning any reason thereof. The Contractor is bound to accept the part work as offered by BSCDCL after split up at the quoted/negotiated rates.

The tenders shall be strictly as per the conditions of contract. Tenders with any additional condition(s)/modifications shall be rejected.

The witnesses to the Tender/Contract Agreement shall be other than the Bidder/ Bidders competing for this work and must indicate full name, address, and status/occupation with dated signatures.
The acceptance of tender will rest with the BSCDCL who does not bind itself to accept the lowest tender and reserves to itself the right to reject any or all the tenders received without assigning any reason thereof. Tenders in which, any of the prescribed conditions are not fulfilled or found incomplete in any respect are liable to be rejected.

On acceptance of tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from Engineer-in-Charge or its authorized representative shall be intimated by the contractor within 07 days of issue date of letter of Awards by BSCDCL.

The Bidder shall not be permitted to tender for works if his near relative is posted in the project office or concerned Zonal Office of the BSCDCL. The contractor 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 of the officers in BSCDCL. Any breach of this condition by the Bidder would render him liable to the withdrawal of the work awarded to him and forfeiture of Earnest Money and Security Deposit. This may also debar the contractor from tendering for future works under BSCDCL.

For the purpose of operation of this clause a near relative shall mean wife, husband, parents, grandparents, children, grandchildren, brothers, sisters, uncles, aunts, cousins and their corresponding in-laws

The time of completion of the entire work, as contained in contract shall be as mentioned in "Memorandum - Annexure-I", which shall be reckoned from the 10th day after issue of the letter of Award by the BSCDCL.

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

The tender award, execution and completion of work shall be governed by tender documents consisting of (but not limited to) Letter of Award/Letter of work order, Bill of Quantities, Special Conditions of Contract, General Conditions of Contract, Specifications, Drawings. The Bidders shall be deemed to have gone through the various conditions including sub-soil water conditions, topography of the land, drainage and accessibility etc. or any other condition which in the opinion of contractor will affect his price/rates before quoting their rates. No claim whatsoever against the foregoing shall be entertained. The drawings with the tender documents are Tender Drawing and are indicative only.

ADDENDA/ CORRIGENDA

Addenda/Corrigenda to the tender documents may be issued prior to the date of submission of the tender to clarify or effect modification in specification and/or contract terms included in various tender documents. The Bidder shall suitably take into consideration such Addenda/Corrigenda while submitting his tender. The Bidder shall return such Addenda/ Corrigenda duly signed and stamped as confirmation of its receipt & acceptance and submit along with the tender document. All addenda/ Corrigenda shall be signed and stamped on each page by the Bidder and shall become part of the tender and contract documents.

SITE VISIT AND COLLECTING LOCAL INFORMATION

Before tendering, the Bidders are advised to visit the site, its surroundings to assess and satisfy themselves about the local conditions such as the working and other constraints at site, approach roads to the site, availability of water & power supply, application of taxes, duties and levies as applicable & any other relevant information required by them to execute complete scope of work. The Bidder may obtain all necessary information as to risks, weather conditions, contingencies & other circumstances (insurgencies etc.) which may influence or affect their tender prices. Bidder shall be deemed to have considered site conditions whether he has inspected it or not and to have satisfied himself in all respect before quoting his rates and no claim or extra charges whatsoever in this regard shall be entertained / payable by the BSCDCL at a later date.

ACCESS BY ROAD

Contractor, if necessary, shall build temporary access roads to the actual site of construction for the works at his own cost to make the site accessible. The Contractor shall maintain the same in motor able condition at all the times as directed by Engineer-in-Charge at his own cost. The contractor shall be required to permit the use of any roads so constructed by him for vehicles

of BSCDCL or any other agencies/ contractors who may be engaged on the project site, free of cost.

Non-availability of access roads or approach to site, for the use of the contractor shall in no case condone any delay in the execution of work nor be the cause for any claim for compensation.

HANDING OVER & CLEARING OF SITE

The Contractor should note that area for construction may be made available in phases as per availability and in conjunction with pace of actual progress of work at site. The work may be required to be carried out in constrained situations. The work is to be carried out in such a way that the traffic, people movement, if any, is kept operative and nothing extra shall be payable to the contractor due to this phasing / sequencing of the work. The contractor is required to arrange the resources to complete the entire project within total stipulated time. Traffic diversion, if required, is to be done and maintained as per requirement of local traffic police or/and as per specification, by the contractor at his own cost and the contractor shall not be entitled for any extra payment, whatsoever, in this regard.

The efforts will be made by the BSCDCL to handover the site to the Contractor free of encumbrances. However, in case of any delay in handing over of the site to the Contractor, the BSCDCL shall only consider suitable extension of time for the execution of the work. It should be clearly understood that the BSCDCL shall not consider any revision in contract price or any other compensation whatsoever viz. towards idleness of Contractors labor, equipment etc.

Old structures on the proposed site, if required, shall be demolished by the contractor properly at his own cost unless and otherwise mentioned elsewhere in the tender document. The useful material obtained from demolition of structures & services shall be the property of the owner/BSCDCL and these materials shall be stacked in workmanship like at the place specified by the Engineer-in-charge.

Necessary arrangement including its maintenance is to be made by the contractor for temporary diversion of flow of existing drain and road, as the case may be. The existing drain, road would be demolished, wherever required, with the progress of work under the scope of proposed project. The existing Road and Drain which are not in the alignment of the said project but are affected and/ or need to demolished during execution for smooth progress of the project, shall be rehabilitated to its original status and condition (including black topping) by the contractor at his own cost. The cost to be incurred by contractor in this regards shall be deemed to be included in the quoted rates of the bill of quantity items and contractor shall not be entitled for any extra payment whatsoever in this regard.

The information about the public utilities (whether over ground or underground) like electrical/ telephone/ water supply lines, OFC Cables, open drain etc. is the responsibility of contractor to ascertain the utilities that are to be affected by the works through the site investigation.

The contractor shall be responsible to obtain necessary approval from the respective authorities for shifting/ re-alignment of existing public utilities. BSCDCL shall only assist the contractor for liasioning in obtaining the approval from the concerned authorities.

Any services affected by the works must be temporarily supported by the contractor who must also take all measures reasonably required by the various bodies to protect their services and property during the progress of works. It shall be deemed to be the part of the contract and no extra payment shall be made to the contractor for the same.

APPROVAL OF TEMPORARY / ENABLING WORKS

The setting and nature of all offices, huts, access road to the work areas and all other temporary works as may be required for the proper execution of the works shall be subject to the approval of the Engineer-in-charge. All the equipments, labour, material including cement, reinforcement and the structural steel required for the enabling/ temporary works associated with the entire Contract-shall have to be arranged by the Contractor only. Nothing extra shall be paid to the Contractor on this account.

CLARIFICATION AFTER TENDER SUBMISSION

Bidder's attention is drawn to the fact that during the period, the tenders are under consideration, the Bidders are advised to refrain from contacting by any means, the BSCDCL and/or his employees/ representatives on matters related to the tender under consideration and that if necessary, BSCDCL will obtain clarifications in writing or as may be necessary. The tender evaluation and process of award of works is done by duly authorized Tender Scrutiny Committee and this committee is authorized to discuss and get clarification from the Bidders.

ORDER OF PRECEDENCE OF DOCUMENTS

In case of difference, contradiction, discrepancy, with regard to conditions of contract, Specifications, Drawings, Bill of quantities etc. forming part of the contract, the following shall prevail in order of precedence.

Letter of Award, along with statement of agreed variations and its enclosures, if any. description of Bill of Quantity/Schedule of Quantities. Special Condition of Contract. Technical specifications (General, Additional and Technical Specification) as given in Tender documents.

General Conditions of Contract. Drawings, CPWD/ BSCDCL specifications (as specified in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of tenders. Relevant B.I.S. Codes.

SECTION-3

CLAUSES OF CONTRACT

03 CLAUSES OF CONTRACT (CC)

3.1 DEFINITIONS

The Contract means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of BSCDCL and the contractor, together with the documents referred to therein including these conditions, the specifications,

designs, drawings and instructions issued from time to time by the Engineer-in- Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

Bhopal Smart City Development Corporation Limited, hereinafter called 'BSCDCL' propose to get the works executed as mentioned in the Contract on behalf of Owner/ Client as Implementing agency/Executing Agency.

In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:-

APPROVAL means approved in writing including subsequent written confirmation of previous verbal approval.

BILL OF QUANTITIES or SCHEDULE OF QUANTITIES means the priced & completed Bill of Quantities or Schedule of Quantities forming part of the tender.

CONTRACTOR shall mean the individual, firm**,** LLP or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or LLP or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

CONTRACT VALUE means the sum for which the tender is accepted as per the letter of Award.

DRAWINGS mean the drawings referred to in the contract document including modifications if any and such other drawings as may from time to time be furnished and/ or approved by BSCDCL.

DATE OF COMMENCEMENT OF WORK: The date of start of contract shall be reckoned from 10 days after the date of issue of letter of Award.

ENGINEER-IN-CHARGE means the Engineer of BSCDCL who shall supervise and be in-charge of the work.

LANGUAGE: All documents and correspondence in respect of this contract shall be in English Language.

i)**"LETTER OF AWARD"** shall mean BSCDCL"s letter or notification conveying its acceptance of the tender subject to such conditions as may have been stated therein.

MONTH means English Calendar month „Day" means a Calendar day of 24 Hrs each **BSCDCL** shall means Bhopal Smart City Development Corporation Limited, a company registered under the Indian Company Act, with its registered office at Near Natraj Petrol Pump, Sector A, Berkheda, Bhopal, Madhya Pradesh 462023 or its Administrative officers or its engineer or other employees authorized to deal with any matter with which these persons are concerned on its behalf.

OWNER/ CLIENT means the Government, Organization, Ministry, Department, Society, Cooperative, JV Entities (whether incorporated or unincorporated or registered as the case may be) etc. who has awarded the work/ project to BSCDCL and/ or appointed BSCDCL as Implementing / Executing Agency/ Project Manager and/ or for whom BSCDCL is acting as an agent and on whose behalf BSCDCL is entering into the contract and getting the work executed.

SCHEDULE(s) referred to in these conditions shall mean the standard schedule of rates of the government mentioned in the Memorandum (Annexure-I) with the amendments thereto issued up to the date of receipt of the tender.

ii) **SITE** means the lands and other places on, under, in or through Which the works are to be executed or carried out and any other lands or places provided by BSCDCL/client/owner or used for the purpose of the contract.

iii) **TENDER** means the Contractor"s priced offer to BSCDCL for the execution and completion of the work and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Award or Award letter. The word TENDER is synonymous with Tender and the Word TENDER DOCUMENTS with "Tendering Documents" or "offer documents".

WRITING means any manuscript typed written or printed statement under or over signature and/or seal as the case may be.

Works or Work shall unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.
The headings in the clauses/ conditions of tender documents are for convenience only and shall not be used for interpretation of the clause/ condition.
Words imparting the singular meaning only also include the plurals and vice versa where the context requires. Words importing persons or parties shall include firms and corporations and organizations having legal capacities.

Excepted Risk are risks due to riots (other than those on account of contractor"s employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the BSCDCL or causes solely due to use or occupation by Government of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to BSCDCL"s faulty design of works.

Market Rate shall be the rate as decided by the Engineer-in-Charge on the basis of the prevailing cost of materials and labour at the site where the work is to be executed plus the percentage mentioned elsewhere in the tender document to cover, all overheads and profits.

3.2 PERFORMANCE GUARANTEE:

"Within 30 (Thirty) days from the date of issue of letter of Award or within such extended time as may be granted by BSCDCL in writing, the contractor shall submit to BSCDCL an irrevocable performance bank guarantee/ F D R in the form appended, from any Nationalized Bank or all Commercial schedule bank equivalent to 5 % (Five per cent only) of the contract value for the due and proper execution of the Contract. The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case the time for completion of works gets extended, the contractor shall get the validity of Performance Guarantee extended to cover such extended time for completion of work.

BSCDCL reserve the right of forfeiture of the performance guarantee in the event of the contractor"s failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract.

Performance guarantee shall be returned after completion of 5 years.

In case the contractor fails to submit the performance guarantee of the requisite amount within the stipulated period or extended period, letter of Award automatically will stand withdrawn and EMD of the contractor shall be forfeited.

3.3 SECURITY DEPOSIT/ RETENTION MONEY

The Security deposit or the retention money shall be deducted from each running bill of the contractor @ 5% (five per cent only) of the gross value of the Running Account bill. Earnest money shall be adjusted first in the security deposit and further recovery of security deposit shall commence only when the upto date amount of security deposit exceeds the earnest money deductible under this clause. No Interest shall be paid on amount so deducted. Security deposit will be released after completion of 5 years.

The release/refund of security deposit of the contractor shall be subject to the observance/compliance of the conditions as under and whichever is later:

a) Expiry of the defect liability period in conformity with provisions contained in clause (Defect liability clause). The expiry of defect liability period shall be extended from time to time depending upon extension of time granted by BSCDCL.

The contractor produces a clearance certificate from the labour office. As soon as the work is virtually completed, the contractor shall apply for the labour clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate.

BSCDCL reserves the right of part or full forfeiture of security deposit in addition to other claims in the event of contractor"s failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract.

3.4 MOBILIZATION ADVANCE

Mobilization advance up to maximum of amount as mentioned in the "Memorandum (Annexure-I)" shall be paid to the contractor, if requested by him, on submission of irrevocable Bank Guarantee valid for contract period of an amount 1.2 times of the mobilization advance to take care of advance and interest at prescribed rate from a nationalized bank or all Commercial scheduled bank in the enclosed Performa. The Mobilization advance shall be interest bearing @ as mentioned in the "Memorandum (Annexure-I)".

This advance shall be paid in three installments as follows:

First Installment of fifty percent of total mobilization advance shall be paid after the agreement is signed and upon submission of performance guarantee for full amount as specified.

2nd installment of twenty five percent of total mobilization advance will be paid after the setting up of site office and site laboratory, complete mobilization of plant and machinery, scaffolding & shuttering materials etc.

The Balance twenty five percent of total mobilization advance shall be paid on completion of 10% of work in terms of cost and after the contractor has fully mobilized the work at site.

The mobilization advance bear simple interest at the rate as mentioned in the Memorandum (Annexure-I) and shall be calculated from the date of payment to the date of recovery (365 days in a year) both days inclusive, on the outstanding amount of advance. Recovery of such mobilization advanced including interest shall be made by the deduction from the contractor's bills commencing after first ten percent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered either by the time eighty percent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment or on expiry of eighty percent of contract period (i.e. time allowed for completion of work in terms of Memorandum- Annexure-I) whichever is earlier.

The bank guarantee submitted by contractor against mobilization advance shall initially be made for the full amount and valid for the contract period, and be kept renewed from time to time to cover the balance amount and likely period of completion of recovery together with interest. However, the contractor can submit part bank guarantees against the mobilization advance in as many numbers as per proposed number of recovery installments equivalent to the amount of each installment.

Notwithstanding what is contained above, no mobilization advance whatsoever shall be payable, if payment of mobilization advance is not mentioned in the Memorandum (Annexure-I).

3.5 SECURED ADVANCE AGAINST NON-PERISHABLE MATERIALS

Interest free secured advance up-to a maximum of 75 % (seventy five percent) of the Market Value of the Materials or the 75 % (seventy five percent) cost of materials as derived from the tendered item rate of the contractor, whichever is less, required for incorporation in the permanent works and brought to site and duly certified by BSCDCL site Engineer shall be paid to the Contractor for all non- perishable items as per UADD/MPPWD/CPWD norms. The advance will be paid only on submission of Indemnity Bond in the prescribed pro-forma. The advance shall be recovered in full from next Running Account bill and fresh advance shall be paid for the balance quantities of materials. The contractor shall construct suitable go-down at the site of work for safe storage of the materials against any possible damages due to sun, rain, dampness, fire, theft etc. at his own cost. He shall also employ necessary watch & ward establishment for the purpose at his costs and risks.

Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer-in-Charge provided the contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer-in-Charge shall be final and binding on the contractor in this matter. No secured advance shall however, be paid on high risk materials such as ordinary glass, sand, petrol, diesel etc.

3.6 DEVIATIONS / VARIATIONS EXTENT AND PRICING

The Engineer-in-Charge shall have power (i) to make any alterations in, omissions from, additions to or substitutions for, the original specifications, drawings, designs and instructions that may appear to him to be necessary during the progress of the work, (ii) to omit part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in- Charge and such alterations, omissions, additions, or substitutions shall form part of the contract as if originally provided therein and any altered, additions or substituted works which the contractor may be directed to do in the manner specified above as part of the work, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereunder provided:

The time for the completion of the work shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered be extended, if requested by the contractor, as follows: in the proportion which the additional cost of the altered, additional or substituted work bears to the original tendered value plus 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.

If the extra items includes any work for which no rate is specified in the contract, then such work shall be carried out at the rates entered in the schedule of rates (as mentioned in Memorandum (Annexure-I)) for Civil/ Sanitary Works minus/plus the percentage which the tendered amount of scheduled items bears with the estimated amount of schedule items based on the Schedule of Rates (as mentioned in Memorandum (Annexure-I) for Civil/ Sanitary Works). The scheduled item means the items appearing in the Schedule of Rates (as mentioned in Memorandum (Annexure-I)for Civil/ Sanitary Works) which shall be applicable in this clause. This clause will apply mutates mutandis to electrical work except that Electrical Schedule of Rates as mentioned in Memorandum (Annexure-I) will be considered in place of Civil/ Sanitary works Schedule of rates as mentioned in Memorandum (Annexure-I)

However, In the case of extra item(s), (items that are completely new, and are in addition to the items contained in the contract, and not included in the schedule of rates (as mentioned in Memorandum (Annexure-I)), the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, for the work and the engineer-in-charge shall within one month of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following para:

If the market rate for the substituted item so determined is more than the market rate of agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

If the market rate for the substituted item so determined is less than the market rate of the agreement (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted)

In the case of contract item(s), substituted item(s), contract cum substituted items, which exceed the limits laid down in Memorandum (Annexure-I), the contractor shall within fifteen days of receipt of order of occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the scheduled of quantities, the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the Contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Memorandum (Annexure-I), and the Engineer-in-charge shall after giving notice of the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.

The contractor shall send to the Engineer-in-Charge once every three months, an up to date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right. However, the Engineer-in-charge may authorize consideration of such claims on merits.

For the purpose of operation of Memorandum (Annexure-I), the following works shall be treated as works relating to foundation unless and otherwise defined in the Contract:

For Buildings: All works up to 1.2 meters above ground level or up to floor 1 level whichever is lower.

Any operation incidental to or necessarily has to be in contemplation of Bidder while filling, tender or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not specifically indicated in the description of the item and the relevant specifications shall be deemed to be included in the rates quoted by the Bidder or the rate given in the said schedule or rates as the case may be Nothing extra shall be admissible for such operations.

Market Rates to be determined as per clauses given in the tender document shall be on the basis of **Prevailing rates of Material (unless mentioned otherwise)**, **Relevant Labour authority rate for Labour**, **market rates of T&P** etc. **plus 15% towards Contractors" Profits and Overheads**.

The following factors may be considered in the justification of rates on which

Contractor"s overhead & profit shall not be applicable**:**

Buildings and Other Construction Worker Cess as applicable in the state of work place. EPF (Employer Contribution) component, as per EPF act on the portion of labour"s wages

3.7 ESCALATION

No claim on account of any escalation on whatsoever ground shall be entertained at any stage of works. All rates as per Bill of Quantities (BOQ) quoted by contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation shall be applicable on this contract.

3.8 COMPENSATION FOR DELAY

If the contractor fails to maintain the required progress in terms of clauseor relevant clause of GCC & Special Conditions of Contract, to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the BSCDCL on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the Engineer in charge (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / week (as applicable) that the progress remains below that specified in Clause or the relevant clause in GCC & Special Conditions of Contract or that the work remains incomplete.

This will also apply to items or group of items for which a separate period of completion has been specified Compensation for delay of work @1.5% per month delay to be computed on daily basis.

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set- off against any sum payable to the Contractor under this or any other contract with BSCDCL.

In case, the contractor does not achieve a particular milestone mentioned elsewhere in the tender document, or the re-scheduled milestone(s) the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of Extension of Time. With-holding of this amount or failure to achieve a milestone, shall be automatic without any notice to the Contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

3.9 ACTION IN CASE WORK NOT DONE AS PER SPECIFICATIONS

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in-charge, his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Assurance Unit of the BSCDCL or any organization engaged by the BSCDCL for Quality Assurance and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor"s agent shall be considered to have the same force as if they had been given to the contractor himself. If it shall appear to the Engineer-in-charge or his authorized subordinates in-charge of the work or to the officer of Quality Assurance or his subordinate officers or the officers of the organization engaged by the BSCDCL for Quality Assurance or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as given in this tender document (for non-completion of the work in time) for this default. In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the Engineer in charge may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re- executed at the risk and cost of the contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

3.10 ACTION IN CASE OF BAD WORK

If it shall appear to the Engineer-in-Charge or his authorized representative in charge of the work or to the Chief Technical Examiner or to any other inspecting agency of Government/ State Government/ Owner where the work is being executed, that any work has been executed with unsound, imperfect, or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are

unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the contractor shall on demand in writing which shall be made within twelve months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, Certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-in-Charge in his demand aforesaid while the contractor failure to do so shall continue, the Engineer-in-Charge may rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of as the case may be at the risk and expense in all respects of the contractor.

3.11 CANCELLATION/DETERMINATION OF CONTRACT IN FULL OR PART

Subject to other provisions contained in this clause the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and / or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or un-workmanlike manner shall omit to comply with the requirement of such notice for a period of seven days thereafter; or

If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge; or

If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge; or

If the contractor persistently neglects to carry out his obligations under the contract and / or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge; or

If the contractor shall offer or give or agree to give to any person in BSCDCL service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any action relation to the obtaining or execution of this or any other contract for BSCDCL; or If the contractor shall enter into a contract with BSCDCL in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge; or

If the contractor shall obtain a contract with BSCDCL as a result of wrong tendering or other non-bona-fide methods of competitive tendering or commits breach of Integrity Pact; or If the contractor being an individual, or if a firm, any partner thereof shall at any time be

adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or If the contractor being a company, shall pass a resolution or the Court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days, or.

If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of the labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire works or any portion thereof without and prior written approval of the Engineer-in-Charge.

When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge may without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to BSCDCL, by a notice in writing to cancel the contract as whole or only such items of work in default from the Contract, the Engineer-in-charge shall have powers:

Take possession of site and any materials, constructional plant, implements, stores, etc. thereon; and/ or Carry out the incomplete work by any means at the risk and cost of the contractor; and/ or The Engineer-in-charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by BSCDCL because of action under this clause shall not exceed 10% of the tendered value of the work.

To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination or rescission the full security deposit recoverable under the contract and performance guarantee shall be liable to be forfeited and un-used materials, construction plants, implements, temporary buildings, etc. shall be taken over and shall be absolutely at the disposal of the BSCDCL. If any portion of the Security Deposit has not been paid or received it would be called for and forfeited; and/ or

To employ labor paid by the BSCDCL and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials of the amount of which cost and price certified by the Engineer-in-Charge shall be final and conclusive) against the contractor and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Engineer-in- Charge as to the value of the work done shall be final and conclusive against the contractor provided always that action under the sub-clause shall only be taken after giving notice in writing to the contractor. If the expenses incurred by the BSCDCL are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor; and/ or

After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof as shall be un-executed or delayed with reference to the General Conditions of Contract and/ or relevant clause of Condition Special of Contract, out

of his hands and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Engineer-in-Charge shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by BSCDCL under his contract or on any other account whatsoever or from his security deposit or the proceeds of sales of unused materials, construction plants, implements temporary buildings etc. thereof or a sufficient part thereof as the case may be. If the expenses incurred by the BSCDCL are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor; and/or By a notice in writing to withdraw from the contractor any items or items of work as the Engineer-in-charge may determine in his absolute discretion and get the same executed at the risk and cost of the contractor.

Any excess expenditure incurred or to be incurred by BSCDCL in completing the works or part of the works or the excess loss or damages suffered or may be suffered by BSCDCL as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to BSCDCL in law be recovered from any moneys due to the contractor on any account, and if such moneys are not sufficient the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors unused materials, constructional plant, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the contractor under the contract and if thereafter there be any balance outstanding from the contractor, it shall be recovered in accordance with the provisions of the contract and law.

Any sums in excess of the amounts due to BSCDCL and unsold materials, constructional plant etc. shall be returned to the contractor, provided always that if cost or anticipated cost of completion by BSCDCL of the works or part of the works is less than the amount which the contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the contractor.

In the event of anyone or more of the above courses being adopted by the Engineer-in-Charge the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified. Provided further that if any of the recoveries to be made, while taking action as above, are in excess of the security deposit forfeited, these shall be Limited to the amount by which the excess cost incurred by the BSCDCL exceeds the security deposit so forfeited.

3.12 CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION NOT TAKEN UNDER CLAUSE OF AGREEMENT

In any case in which any of the powers conferred upon the Engineer-in-Charge by relevant clause thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and

such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer- in-Charge putting in force all or any of the powers vested in him under any clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to the used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final and binding on the contractor and/or direct the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor"s expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

3.13 CARRYING OUT PART WORK AT RISK & COST OF CONTRACTOR

If contractor:
At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge; or
Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in- Charge; or

Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge.

The Engineer-in-Charge without invoking action under given clause of contract may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to BSCDCL, by a notice in writing to take the part work/part incomplete work of any item(s) out of his hands and shall have powers to: Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.

The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by BSCDCL because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor. The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the contractor provided always that action under this clause shall only be

taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.

Any excess expenditure incurred or to be incurred by BSCDCL in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by BSCDCL as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to BSCDCL in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors' unused materials, constructional plant, implements, temporary building at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract. In the event of above course being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract.

3.14 SUSPENSION OF WORKS

The contractor shall, on receipt of the order in writing of the Engineer-in-charge, suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-charge may consider necessary for any of the following reasons:

- On account of any default on part of the contractor, or
- For proper execution of the works or part thereof for reason other than the default of the contractor, or
- For safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-charge.

(b) If the suspension is ordered for reasons (ii) and (iii) in sub-para (a) above.
The contractor shall be entitled to an extension of the time equal to the period of every such suspension plus 25% for completion period. No adjustment in contract price will be allowed for reasons of such suspension.

ii) In the event of the Contractor treating the suspension as an abandonment of the Contract by BSCDCL, he shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of the work in full.

3.15 TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR

Without prejudice to any of the right or remedies under this contract if the contractor dies, the Engineer in-charge shall have the option of terminating the contract without compensation to the contractor.

3.16 TIME ESSENCE OF CONTRACT & EXTENSION FOR DELAY

The time allowed for execution of the Works as specified in the Memorandum (Annexure-I) or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence from such time period as mentioned in MEMORANDUM (ANNEXURE – I) or the date on which the Engineer-in-Charge issues written orders to commence the work. If the Contractor commits default in commencing the execution of the work as aforesaid, the BSCDCL shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee absolutely.

Within 10 (Ten) days of Letter of Award, the Contractor shall submit a Time and Progress Chart (CPM/ PERT/ Quantified Bar Chart) and get it approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time stipulated in the Contract documents and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work exceeds one month (save for special jobs for which a separate program has been agreed upon) complete 1/8th of the whole of work before 1/4th of the whole time allowed in the contract has elapsed, 3/8th of the work before one half of such time has elapsed and 3/4th of the work before 3/4th of such time has elapsed. The physical progress report including photographs shall be submitted by the contractor on the prescribed format & the intervals (not exceeding one month)as decided by the Engineer in Charge. The compensation for delay as per tender document shall be leviable at intermediate stages also, in case the required progress is not achieved to meet the above time deadlines of the completion period and/ or milestones of time and progress chart, provided always that the total amount of Compensation for delay to be paid under this condition shall not exceed 10% of the tendered value of work".

If the work(s) be delayed by:

1. force-majeure or
2. Abnormally bad weather, or
3. Serious loss or damage by fire, or
4. Civil commotion, local commotion of workmen, strike or lockout, affecting any or the trades employed on the work, or
5. Delay on the part of other contractors or tradesmen engaged by Engineer-in- Charge in executing work not forming part of the Contract, or
6. Non-availability of stores, which are responsibility of the BSCDCL or,
7. Non-availability or break down of tools and plant to be supplied or supplied by BSCDCL

8. Any other cause which, in the absolute discretion of the BSCDCL, is beyond the Contractor"s control, then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in- Charge within 07 days but shall nevertheless use constantly his best endeavor to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

9. Request for extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay in the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired. In any such case BSCDCL may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing within a reasonable time from the receipt of such request. Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and the extension of time so given by the Engineer-in-Charge shall be binding on the contractor.

3.17 TIME SCHEDULE & PROGRESS

Time allowed for carrying out all the works as entered in the tender shall be as mentioned in the "Memorandum (Annexure-I)" which shall be reckoned from the 10th day from the date on which the letter of Award is issued to the Contractor. Time shall be the essence of the contract and contractor shall ensure the completion of the entire work within the stipulated time of completion.

The contractor shall also furnish within 10 days of date of issue of letter of Award a CPM network/ PERT chart/ Bar Chart for completion of work within stipulated time. This will be duly got approved from BSCDCL. This approved Network/ PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed. Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/PERT Network. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-in-Charge.

During the currency of the work the contractor is expected to adhere to the time schedule on mile stone and total completion and this adherence will be a part of Contractor"s performance under the contract. During the time schedule on mile stone and total completion and this adherence will be a part of Contractor"s performance under the contract. During the execution of the work contractor is expected to participate in the review and updating of the Network/BAR CHART undertaken by the BSCDCL. These reviews may be undertaken at the discretion of Engineer-in-charge either as a periodical appraisal measure or when the quantum of work order on the contractor is substantially changed through deviation orders or amendments. The review shall be held at site or any of the offices of BSCDCL/owner /consultant at the sole discretion of BSCDCL. The contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time to the contractor.

Contractor shall submit (as directed by Engineer-in-Charge) progress reports on a computer based program (program and software to be approved by Engineer-in- Charge) highlighting status of various activities and physical completion of work. The contractor shall send completion report with as built drawings to the office of Engineer-in-Charge, of BSCDCL in writing within a period of 30 days of completion of work.

The photographs of the project taken on last day of every month indicating progress of work (in soft copies) shall be attached along with the physical progress reports to be submitted to Engineer-in-charge.

3.18 TAXES AND DUTIES

Except as otherwise specifically provided in the contract, the contractor shall be liable and responsible for the payment, of all taxes, and GST or in the state concerned which may be specified by local/state/ central government from time to time on all material articles which may be used for this work. The rates quoted by him in the tender in bill of quantities shall be inclusive of all taxes and GST. In the event of nonpayment/default in payment of any of the above taxes, BSCDCL reserves the right to with-hold the dues/payments of contractor and make payment to local/state/Central Government authorities or to labourers as may be applicable. The rate quoted by the contractor shall be deemed to be inclusive of all taxes as given in tender document Tax deductions at source shall be made as per laws prevalent in the State as applicable for the work.

The stamp duty and registration charges, if any, on the contract agreement levied by the Government or any other statutory body, shall be paid by the contractor as applicable in the state of work.

It will be incumbent upon the Contractor to obtain a registration certificate as a dealer under the GST Act and necessary evidence to this effect shall be furnished by the Contractor to BSCDCL.

The Bidder shall quote his rates inclusive of Goods and Service Tax(GST) in conjunction with other terms and conditions. In the event of decrease / relaxation and / or waiver of any of the existing / prevailing tax(es), duties, levies, cess by Central / state Govt. Or any other statutory body(ies), after the last stipulated date for the receipt of tender including extension (if any), and the contractor thereupon has been paid or has raised claims of such tax(es), duties, levies, cess; such sums shall be recovered / deducted (from claims raised but which has not been paid) effective from the date as reckoned in the relevant statutory order / law / ordnance etc. The contractor, shall, within a period of 30 days of any such waiver/relaxation/decrease in tax(es), duties, levies, cess, give a written notice thereof to Engineer-in-charge stating the statutory change with Documentary proof thereto. Provided always that Engineer-in-charge shall have full powers to effect recovery/deduction on account of any such statutory change even if contractor has not intimated in the event when any such statutory action comes to his notice.

3.19 INCOME TAX DEDUCTION TDS)

Income tax deductions shall be made from all payments made to the contractor including advances against work done, as per the rules and regulations in force, in accordance with the Income Tax act prevailing from time to time.

3.20 GOODS AND SERVICES TAX (GST)

The Bidder shall quote rates inclusive of all type of tax and GST nothing extra shall be paid. The contractor must have GST registration number and will provide copy of Registration to BSCDCL before release of any payment by the Corporation. The contractor will submit regular Invoice / Bill fulfilling `all conditions of Goods and Service Tax (GST) Rules.

3.21 ROYALTY ON MATERIALS:

The contractor shall deposit royalty and obtain necessary permit for supply of bajri, stone, kankar, sand and other materials etc. from the local authorities and quoted rates shall be inclusive of royalty.

The contractor shall be deemed to have inspected the site, its surrounding and acquainted itself with the nature of the ground, accessibility of the site and full extent and nature of all operations necessary for the full and proper execution of the contract, space for storage of materials, constructional plant, temporary works, restrictions on the plying of heavy vehicles in area, supply and use of labour materials, plant, equipment and laws, rules and regulations, if any, imposed by the local authorities.

The rates and prices to be tendered in the bill of quantities are for completed and finished items of works and complete in all respects. It will be deemed to include all constructional plant, labour, supervision materials, transport, all temporary works, erection, maintenance, contractor"s profit and establishment/overheads, together with preparation of designs & drawings pertaining to casting yard, shop drawing, fabrication drawing (if required), staging form work, stacking yard, etc. all general risk, all taxes, royalty, duties, cess, octroi and other levies, insurance liabilities and obligations set out or implied in the tender documents and contract .

If any temporary/ permanent structure is encountered or safety of such structure in the vicinity is endangered due to execution of the project, the contractor has to protect the structures by any means as per direction of Engineer-in–Charge. If any damage is caused to any temporary or permanent structure(s) in the vicinity due to execution of the project, the contractor has to make good the same by any means as per direction of Engineer-in–Charge. The contractor should inspect the site of work from this point of view. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the contractor shall not be entitled for any extra payment in this regard.

3.22 INSURANCE OF WORKS ETC

Contractor is required to take contractor's all risk policy or erection all risk policy (as the case may be) from an approved insurance company in the joint name with BSCDCL and bear all costs towards the same for the full period of execution of works including the defect liability period for the full amount of contract against all loss of damage from whatever cause arising other than **excepted risks** for which he is responsible under the terms of the contract and in such manner that the BSCDCL and the contractor are covered during the period of construction of works and/or also covered during the period of defect liability for loss or damage. The work and the temporary works to the full value of such works. The materials, constructional plant, centering, shuttering and scaffolding materials and other things brought to the site for their full value. Whenever required by BSCDCL, the contractor shall produce the policy or the policies of insurance and the receipts for payment of the current premium.

3.23 INSURANCE UNDER WORKMEN COMPENSATION ACT

Contractor is required to take insurance cover under the Workman Compensation Act, 1923 amended from time to time from an approved insurance company and pay premium charges thereof. Wherever required by BSCDCL the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

3.24 THIRD PARTY INSURANCE

Contractor is required to take third party insurance cover for an amount of 5%(five percent) of contract value from an approved insurance company for insurance against any damage, injury or loss which may occur to any person or property including that of BSCDCL / owner / client, arising out of the execution of the works or temporary works. Wherever required by BSCDCL the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

In case of failure of the contractor to obtain contractors all risk policy, insurance under workman compensation act and third party insurance as described above within one month from the date of commencement of work, running account payments of the contractor shall be withheld till such time the aforesaid insurance covers are obtained by the contractor.

If the Contractor could not effect a comprehensive insurance cover against risks which he may be required to effect under the terms of the contract, then he shall give his attention to get the best insurance cover available and even in case of effecting a wider insurance cover than the one which the subsidiary of the General Insurance Company could offer, such an insurance is ought to be done after the BSCDCL‟s approval, by or through the subsidiary of the General Insurance Company.

The contractor shall at all times indemnify BSCDCL and Owner against all claims, damages or compensation under the provision of Payment of wages act-1936, Minimum Wages Act-1948, Employer‟s liability Act-1938, the workmen‟s compensation Act-1947, Industrial Disputes Act-1947 and Maternity Benefit Act- 1961 or any modifications thereof or any other law in force or as consequence of any accident or injury to any workman or other persons in or about the works, whether in the employment of the contractor or not, against all costs, charges and expenses of any suit, action or proceedings arising out of such incident or injury and against all sum or sums which may with the consent of the contractor be paid to compromise or compound any such claim. Without limiting his obligations and liabilities as above provided, the contractor shall insure against all claims, damages or compensation payable under the Workmen‟s Compensation Act 1923 or any modification thereof or any other law relating thereto.

3.25 PAYMENTS

All running payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed and/or accepted by BSCDCL and shall not preclude the recovery for bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the due performance of the Contract, or any part thereof, in this respect, or the accruing of any claim, nor shall it conclude, determine or affect in any way the powers of the BSCDCL under these conditions or any of them as to the final settlement and adjustments of the accounts or otherwise, or in any other way vary/ affect the contract. The final bill shall be submitted by the contractor within three months of the completion of work, otherwise BSCDCL‟s certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on contractor

It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between BSCDCL and the contractor; the

contractor shall become entitled to payment only after BSCDCL has received the corresponding payment(s) from the client/ Owner for the work done by the contractor.

Any delay in the release of payment by the client/ Owner to BSCDCL leading to a delay in the release the corresponding payment by BSCDCL to the contractor shall not entitle the Contractor to any compensation/ interest from BSCDCL.

- **IF THE ITEM IS SITC THEN THE BIDDER WILL GET THE PAYMENT AS FOLLOWS:**

1. In case of supply 70%.
2. In case of Installation 20%.
3. In case of Commissioning 10%

All payments shall be released by way of e-transfer through RTGS/NEFT in India directly at their Bank account by BSCDCL.

3.26 MEASUREMENTS OF WORKS

Engineer-in-charge shall, except as otherwise provided, ascertain and determine by measurement, the value of work done in accordance with the contract. Except where any general or detailed description of the work expressly shows to the contrary, measurement shall be taken in accordance with the Procedure set forth in the UADD/MPPWD/CPWD Specification. In the case of items which are not covered by specifications, mode of measurement as specified in the Technical Specifications of the contract and if for any item no such technical specification is available, then a relevant standard method of measurement issued by the Bureau of Indian Standard shall be followed.

Provided further that, In case of Cancellation/Determination of Contract in Full or in Part in accordance with clause given in tender document (and its sub-clauses), following methodology shall be adopted in respect of measurements in addition to what has been mentioned in foregoing:-

All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the contractor or his authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer-in-Charge and the contractor or their representatives in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.

If for any reason the contractor or his authorized representative is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the Engineer-in-Charge and BSCDCL shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorized representative does not remain present at the time of such measurements after the contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to

countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor. The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

3.27 COMPUTERISED MEASUREMENT BOOKS

Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract. All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book as per the format of BSCDCL so that a complete record is obtained of all the items of works performed under the contract. All such measurements and levels recorded by the

contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the Engineer-in-Charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his authorized representative.

After the necessary corrections made by the Engineer-in-Charge, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to the Engineer-in- Charge for the dated signatures by the Engineer- in-Charge and the contractor or their representatives in token of their acceptance.

Whenever bill is due for payment, the contractor would initially submit draft computerized measurement sheets and these measurements would be got checked/test checked from the Engineer-in-Charge and/or his authorized representative. The contractor will, thereafter, incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit to BSCDCL a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer-in-Charge and/or his authorized representative would thereafter c h e c k this MB, and record the n e c e s s a r y certificates for their checks/test checks.

The final, fair, computerized measurement book given by the contractor, duly bound, with its pages numbered, should be 100% correct, and no cutting or over- writing in the measurements would thereafter be allowed. If at all any error is noticed, the contractor shall have to submit a fresh computerized MB with its pages duly numbered and bound, after getting the earlier MB cancelled by the BSCDCL. The contractor shall submit two spare copies of such computerized MB‟s for the purpose of reference and record by the various officers of the BSCDCL.

The contractor shall also submit to the department separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages numbered along with two spare copies of the “bill.

The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for checking of measurements /levels by the Engineer-in-Charge or his representative.

The contractor shall give not less than seven days‟ notice to the Engineer-in- Charge or his authorized representative in charge of the work before covering up or otherwise

placing beyond the reach of checking and/or test checking the measurement of any work in order that the same may be checked and/or test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking and/or test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of checking and/or test checking measurements without such notice having been given or the Engineer-in-Charge‟s consent being obtained in writing the same shall be uncovered at the Contractor‟s expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the BSCDCL to check the measurements recorded by contractor and all provisions stipulated herein above or anywhere in the tender document shall be applicable to such checking of measurements or levels.

It is also a term of this contract that checking and/or test checking the measurements of any item of work in the measurement book and/or its payment in the interim, on account of final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

3.28 WITHHOLDING AND LIEN IN RESPECT OF SUMS DUE FROM CONTRACTOR

Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, BSCDCL shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, BSCDCL shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, BSCDCL shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract pending finalization of adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or BSCDCL will be kept withheld or retained as such by the Engineer-in-Charge or BSCDCL till the claim arising out of or under the contract is determined by the competent court and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the BSCDCL shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may whether in his individual capacity or otherwise. BSCDCL shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc, to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work

claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for BSCDCL to recover the same from him in the manner prescribed in tender document of this clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by BSCDCL to the contractor, without any interest thereon whatsoever.

3.29 LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or by BSCDCL against any claim of the Engineer-in-Charge or BSCDCL in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer-in-Charge or the BSCDCL. It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the BSCDCL will be kept withheld or retained as such by the Engineer-in-Charge or the BSCDCL or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the competent court, as the case may be, and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

3.30 WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, AND ORDERS ETC.

All items of work in the bill of quantities/ schedule of quantities shall be carried out as per the UADD/MPPWD/CPWD/ BSCDCL specifications, drawings and instructions of the Engineer-in-Charge of BSCDCL and the rates shall include for supply of required materials including proper storage, consumables, skilled & unskilled labour, supervision and tools, tackles, plant & machinery complete as called for in the detailed specifications and conditions of the contract. Latest updated UADD/MPPWD/CPWD specification shall be followed for execution of work. The contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications.

The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work assigned by the Engineer-in- Charge.

The contractor shall comply with the provisions of the contract and execute the works with care and diligence and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

3.31 MATERIALS TO BE PROVIDED BY THE CONTRACTOR

The contractor shall, at his own expense, provide all materials, required including Cement & Steel for the works. The contractor shall at his own expense and without delay; supply to the Engineer-in-Charge samples of materials to be used on the work and shall get

the same approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract.

The contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply.

The contractor shall at his risk and cost, submit the samples of materials to be tested or analyzed and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer - in- Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance and cost in obtaining the right and visit to such access. The Engineer-in-Charge shall have full powers to require the removal from the p remises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full power to require other proper materials to be substituted thereof and in case of default, the Engineer-in- Charge may cause the same to the supplies and all costs which may require such removal and substitution shall be borne by the contractor.

3.32 MATERIALS AND SAMPLES

The materials/products used on the works shall be one of the approved make/ brands out of list of manufacturers / brands /makes given in the tender documents. The contractor shall submit samples/ specimens out of approved makes of materials/ products to the Engineer-in-Charge for prior approval. In exceptional circumstances Engineer-in-Charge may allow alternate equivalent makes/brands of products/ materials at his sole discretion. The final choice of brand / make shall remain with the Engineer- in-Charge, whose decision in this matter shall be final and binding and nothing extra on this account shall be payable to the Contractor. In case single brand/ make are mentioned, other equivalent makes/ brands may be considered by the Engineer -in-Charge. In case of variance in UADD/MPPWD/CPWD/IS/BIS Specifications from approved products/makes specification, the specification of approved product/make shall prevail for which nothing shall be paid extra to the Contractor. In case no make or brand of any materials, articles, fittings and accessories etc. is specified, the same shall comply with the relevant Indian Standard Specifications and shall bear the ISI/BIS mark. The Engineer of BSCDCL and the owner shall have the discretion to check quality of materials and equipments to be incorporated in the work, at source of supply or site of work and even after incorporation in the work. They shall also have the discretion to check the workmanship of various items of work to be executed in this work. The contractor shall pr ovide the necessary facilities and assistance for this purpose.

The above provisions shall not absolve the contractor from the quality of final product and in getting the material and workmanship quality checked and approved from the Engineer-in-Charge of BSCDCL.

The contractor shall well in advance, produce samples of all materials, articles, fittings, accessories etc. that he proposes to use and get them approved in writing by BSCDCL. The materials articles etc. as approved shall be LABELLED as such and shall be signed by BSCDCL and the Contractor‟s representative.

The approved samples shall be kept in the custody of the Engineer-in- Charge of BSCDCL till completion of the work. Thereafter the samples except those destroyed during testing shall be returned to the contractor No payment will be made to the contractor for the samples or samples destroyed in testing.

The brands of all materials, articles fittings etc. approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded in the site order book.

The contractor shall set up and maintain at his cost, a field testing laboratory for all day to day tests at his own cost to the satisfaction of the Engineer-in-Charge. This field testing laboratory shall be provided with equipment and facilities to carry out all mandatory field tests as per BSCDCL/UADD/MPPWD/CPWD (as the case may be) specifications. The laboratory building shall be constructed and installed with the appropriate facilities, Temperature and humidity controls shall be available wherever necessary during testing of samples. All equipments shall be provided by the Contractor so as to be compatible with the testing requirements specified. The Contractor shall maintain all the equipments in good working condition for the duration of the contract.

The Contractor shall provide approved qualified personnel to run the laboratory for the duration of the Contract. The number of staff and equipment available must at all times be sufficient to keep pace with the sampling and testing programme as required by the Engineer-in-charge. The Contractor shall fully service the site laboratory and shall supply everything necessary for its proper functioning, including all transport needed to move equipment and samples to and from sampling points on the site, etc. The Contractor shall re-calibrate all measuring devices whenever so required by the Engineer-in-charge and shall submit the results of such calibration without delay. All field test shall be carried out in the presence of BSCDCL‟s representative. All costs towards samples, materials, collection, transport, manpower, testing etc. shall be borne by the Contractor and are deemed to be included in the rates quoted by him in the bill of quantities.

The contractor(s) shall display the calibration certificate of each equipment at the location of equipment & shall get recalibrated at least one week before its expiry date.

3.33 MATERIALS PROCURED WITH THE ASSISTANCE OF BSCDCL

If any material for the execution of this contract is procured with the assistance of BSCDCL either by issue from its stores or purchase made under orders or permits or licenses obtained by BSCDCL, the contractor shall hold and use the said materials economically and solely for the purpose of this contract and shall not dispose them without the permission of Engineer-in-charge. The contractor, if required by the BSCDCL, shall return all such surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination on whatsoever reason, on being paid or credited such price as the Engineer-in-charge shall determine having due regard to the conditions of materials. The price allowed to the contractor, however, shall not exceed the amount charged to him excluding the element of storage charges which shall be 10% of the cost charged to contractor. The decision of the Engineer-in-charge shall be final and conclusive. Contractor(s) has / have to deploy security personnel for safeguarding of materials procured at site.

3.34 CONTRACTOR TO SUPPLY TOOLS & PLANTS

The contractor shall provide at his own cost all materials, machinery, tools & plants as require for completion of work. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any

matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement or examination at any time and from time to time of the work or materials. Failing his so doing, the same may be provided by the Engineer-in-Charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

3.35 MOBILIZATION OF MEN, MATERIALS AND MACHINERY:

All expenses towards mobilization at site and de-mobilization including bringing in equipment, work force, materials, dismantling the equipment's, clearing the site etc. shall be deemed to be included in prices quoted and no separate payment on account of such expenses shall be entertained.

It shall be entirely the Contractors responsibility to provide, operate and maintain all necessary construction equipment's, scaffoldings and safety, gadget, lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all jobs as per the specifications and within the schedule time of completion of work. Further, contractor shall also be responsible for obtaining temporary electric and water connection for all purposes. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

It shall be the responsibility of the contractor to obtain the approval for any revision and/or modification desired by him from BSCDCL before implementation.

The procurement and supply in sequence and at the appropriate time of all materials and consumable shall be entirely the contractor's responsibilities and his rates for execution of work shall be inclusive of supply of all these items.

It is mandatory for the contractor to provide safety equipment's and gadgets to his all workers, supervisory and Technical staff engaged in the execution of the work while working. The minimum requirement (but not limited to) shall be gum boots, safety helmets, Rubber hand gloves, face masks, safety nets, safety belts, goggles etc. as per work requirements. Sufficient nos. of these equipment's and gadgets shall also be provided to BSCDCL by the contractor at his own cost for use of BSCDCL Officials and/ or workforce while working/supervision of work at site. No staff/ worker shall be allowed to enter the site without these equipment's/ gadgets.

The cost of the above equipment‟s/ gadgets are deemed to be included in the rates quoted by the contractor for the items & works as per Bill of Quantities and contractor shall not be entitled for any extra payment in these regard. The above norm is to be strictly complied with at site. In case the contractor is found to be deficient in providing Safety Equipment‟s/ Gadgets in the opinion of Engineer-in- charge, the Engineer-in-charge at his option can procure the same at the risk & cost of contractor and provide the same for the use of worksite and shall make the recoveries from the bills of the contractor for the same. The contractor shall abide by all rules & regulations pertaining to Health, Safety and Environment.

All designs, drawings, bill of quantities, etc., except Bar Bending Schedule, Shop & Fabrication drawings, for all works shall be supplied to the contractor for their scope of work all buildings services and development works by BSCDCL in phased manner as the works progress. However it shall be the duty and responsibility of the contractor to bring to the notice of the BSCDCL in writing as to any variation, discrepancy or any other changes required and to obtain revised drawings and designs and / or approval of the BSCDCL in writing for the same.

One copy of contract documents including drawings furnished to the contractor shall be kept at the site and the same shall at all reasonable times be available for inspection.

All materials, construction plants and equipments etc. once brought by the contractor within the project area, will not be allowed to be removed from the premises without the written permission of the Engineer-in-charge. Similarly all enabling works built by the contractor for the main construction undertaken by him, shall not be dismantled and removed without the written authority of the BSCDCL.

Contractor shall have to prepare the Bar Bending Schedule, shop and fabrication drawings free of cost, if required for any of the items of work.

Five copies of these drawings each including for revision will be submitted to BSCDCL for approval. Before executing the item, shop drawings and bar bending schedule should be approved by BSCDCL.

BSCDCL shall supply Work Force in the various categories to assist the contractor in execution of the works on recoverable basis as per provision mentioned elsewhere in the contract.

All contractors‟ plant, machinery and equipment shall be kept in perfect condition during currency of the contract.

3.36 QUALITY ASSURANCE AND QUALITY CONTROL

To ensure that the services under the scope of this contract are in accordance with the specifications, the Contractor shall adopt Quality Assurance Programme to control such activities at the necessary points:

The contractor shall prepare and finalize such Quality Assurance Programme within 15 days from date of issue Letter of Award. BSCDCL shall also carryout quality audit and quality surveillance of systems and procedures of Contractor‟s quality control activities. A Quality Assurance Programme of Contractor shall generally cover the following:

His organization structure for the management and implementation of the proposed Quality Assurance Program.

- Documentation control system.
- The procedure for purpose of materials and source inspection.
- System for site controls including process controls.
- Control of non-conforming items and systems for corrective actions. Inspection and test procedure for site activities.
- System for indication and appraisal of inspection status. System for maintenance of records.
- System for handling, storage and delivery.
- A quality plan detailing out quality practices and procedures, relevant standards and acceptance levels for all types of work under the scope of this contract.

All the quality reports shall be submitted by the Contractors in the formats appended hereto. Checklist enclosed here in this document shall be followed while carrying out Construction activities (items). If any item is not covered by the Checklist/ Formats appended hereto, the Format for the same may be developed and submitted to Engineer-in-Charge for approval and the same shall be adopted. These filled in formats shall be prepared in two copies and duly signed by representatives of contractor and BSCDCL. All the costs associate with Printing of Formats and testing of materials required as per technical specifications or by Engineer-in-charge shall be included in the Contractor"s quoted rates in the Schedule/ Bill of quantities.

I. The work shall conform to high standards of design and workmanship, shall be structurally sound and aesthetically pleasing. Quality standards prescribed shall form the backbone for the Quality Assurance and Quality Control system.
II. At the site level the Contractor shall arrange the materials, their stacking/ storage in appropriate manner to ensure the quality. Contractor shall provide equipment and manpower to test continuously the quality of materials, assemblies, etc., as directed by the Engineer. The tests shall be conducted continuously and the results of tests maintained. In addition, the Contractor shall keep appropriate tools and equipment for checking alignments, levels, slopes and evenness of the surface.
III. The Engineer shall be free to carry out such tests as may be decided by him at his sole discretion, from time to time, in addition to those specified in this document. The Contractor shall provide the samples and labour for collecting the samples. Nothing extra shall be payable to the Contractor for samples or for the collection of the samples.
a) The test shall be conducted at the Site laboratory that may be established by the Contractor or at any other Standard Laboratory selected by the Engineer.
b) The Contractor shall transport the samples to the laboratory for which nothing extra shall be payable. In the event of Contractor failing to arrange transportation of the samples in proper time Engineer shall have them transported and recover two times the actual cost from the Contractor's bills.
c) The testing charges shall be borne by the Contractor.
d) Testing may be witnessed by the Contractor or his authorized representative. Whether witnessed by the Contractor or not, the test results shall be binding on the Contractor.

CONTRACT COORDINATION PROCEDURES, COORDINATION MEETINGS AND PROGRESS REPORTING

The Contractor shall prepare and finalize in consultation with BSCDCL, a detailed contract coordination procedure within 15 days from the date of issue of Letter of Award for the purpose of execution of the Contract. The Contractor shall have to attend all the meetings at any place in India at his own cost with BSCDCL, Owners/ Clients or Consultants of BSCDCL/ Owner/ Client during the currency of the Contract, as and when required and fully cooperate with such personal and agencies involved during these discussions. The Contractor shall not deal in any way directly with the Clients/ Owners or Consultants of BSCDCL/Owner/ Clients and any dealing/correspondence if required at any time with Clients/ Owners/ Consultants shall be through BSCDCL only. During the execution of the work, Contractor shall submit at his own cost a detailed Monthly progress & programme report to the Engineer-in-charge of BSCDCL by 5th of every month. The format of monthly progress & programme report shall be as approved by Engineer-in-Charge of BSCDCL.

3.37 COMPLETION CERTIFICATE AND COMPLETION PLANS

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or

(b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Engineer-in- Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof less actual cost incurred on removal of materials / debris / malba etc.

The contractor shall submit completion plan as required vide General Specifications for Electrical works as applicable within thirty days of the completion of the work. In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs.5,00,000 (Rs. Five Lakhs only) as may be fixed by the Engineer-in-charge concerned and in this respect the decision of the Engineer-in-charge shall be final and binding on the contractor.

3.38 PROHIBITION OF UNAUTHORISED CONSTRUCTION & OCCUPATION

No unauthorized buildings, construction of structures should be put up by the contractor anywhere on the project site, neither any building built by him shall be occupied in un-authorized manner by him or his staff.

It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody in un-authorized manner during construction, and is handed over to the Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Engineer-in-Charge shall have the option to refuse to accept the said building/buildings in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay, a levy of compensation upto 5% of tendered value of work may be imposed by the Engineer-in-Charge whose decision shall be final both with regard to the justification and quantum and shall be binding on the contractor.

However, the Engineer-in-Charge, through a notice, may require the contractor to remove the illegal occupation any time on or before construction and delivery.

3.39 FORECLOSURE OF CONTRACT BY BSCDCL/OWNER

If at any time after the commencement of the work the BSCDCL shall for any reason whatsoever is required to abandon the work or is not require the whole work thereof as specified in the tender to be carried out, the Engineer-in-Charge shall give notice in writing of the fact to the contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the foreclosure of the whole or part of the works.

3.40 DEFECTS LIABILITY PERIOD

The contractor shall be responsible for the rectification of defects in the works for a period twelve months from the date of taking over of the works by the BSCDCL or clients whichever is later. Any defects discovered and brought to the notice of the contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the contractor fails to carry out these rectifications, the same may without prejudice to any other right or remedy available, be got rectified by BSCDCL at the cost and expense of the contractor

3.41 RESTRICTION ON SUBLETTING

The contractor shall not sublet or assign the whole or part of the works except where otherwise provided, by the contract. The provision of labour on piece work basis shall not be deemed to be a subletting under this clause.

The contractor may entrust specialist items of works like MEP services, HVAC, Lifts, Building Management System, Water Proofing, and Data & Communication networking, interiors, landscaping etc. to the agencies specialized in the specific trade. The contractor shall give the names and details of such firm whom it is going to employ for approval of BSCDCL. These details shall include the expertise, financial status, technical manpower, equipment, resources and list of works executed and on hand of the specialist agency. Further, prior written approval is required from BSCDCL to deploy such agency / sub-contractor.

3.42 FORCE MAJEURE

Any delay in or failure to perform of either party, shall not constitute default so as to give rise to any claim for damages, to the extent such delay or failure to perform is caused by an act of God, or by fire, explosion, flood or other natural catastrophe, governmental legislation, orders or regulation etc. Failure of the client / owner to hand over the entire site and / or release funds for the project, to BSCDCL, shall also constitute force majeure. The time for performance of the obligation by the parties shall be deemed to be extended for a period equal to the duration of the force majeure event. Both parties shall make their best efforts to minimize the delay caused by the force majeure event. If the failure / delay of the client /owner in handing over the entire site and / or in releasing the funds continues even on the expiry of the stipulated date of completion, BSCDCL, may, at the request of the contractor, foreclose the contract without any liability to either party. In the event of such foreclosure, the contractor shall not be entitled to any compensation whatsoever. If prior to such foreclosure the contractor has brought any materials to the site, the Engineer-in-Charge shall always have the option of taking over of all such materials at their purchase price or at the local current rates, whichever is lower.

3.43 NO COMPENSATION CLAUSE

The contractor shall have no claim whatsoever for compensation or idle charges against BSCDCL on any ground or for any reason, whatsoever.

3.44 DIRECTION FOR WORKS

All works under the contract shall be executed under the direction and subject to approval in all respect of the Engineer-in-Charge of BSCDCL who shall be entitled to direct at whatever point or points and in whatever manner works are to be commenced and executed.

The Engineer-in-Charge and his representative shall communicate or confirm their instructions to the contractor in respect of the execution of work during their site inspection in a „Works Site Order Book‟ maintained at the site office of Engineer-in-Charge. The contractor or his authorized representative shall confirm receipt of such instructions by signing against the relevant orders in the book.

3.45 WORK IN MONSOON AND RAIN

The execution of the work may entail working in the monsoon also. The contractor must maintain labour force as may be required for the job and plan and execute the construction and erection according to the prescribed schedule. No special/ extra rate will be considered for such work in monsoon. The contractors‟ rate shall be considered inclusive of cost of dewatering due to rains required if any and no extra rate shall be payable on this account. The stipulated period for completion of project includes the monsoon period, holidays & festivals.

3.46 WORK ON SUNDAYS, HOLIDAYS AND DURING NIGHT

For carrying out work on Sunday and Holidays or during night, the contractor will approach the Engineer-in-Charge or his representative at least two days in advance and obtain his permission. The Engineer-in- Charge at his discretion can refuse such permission. The contractor shall have no claim on this account whatsoever. If work demand, the contractor

shall make arrangements to carry out the work on Sundays, Holidays and in two, three shifts with the approval of Engineer-in-Charge at no extra cost to BSCDCL.

3.47 WATER AND ELECTRICITY

The contractor shall make his own arrangement for Water & Electrical power for construction and other purposes at his own cost and pay requisite electricity and water charges. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

3.48 LAND FOR LABOUR HUTS/ SITE OFFICE AND STORAGE ACCOMMODATION

The contractor shall arrange the land for temporary office, storage accommodation and labour huts at his own cost and get the clearance of local authorities for setting up/construction of labour camp and same is deemed to be included in the rates quoted by the contractor for the works. The contractor shall ensure that the area of labour huts is kept clean and sanitary conditions are maintained as laid down by the local authorities controlling the area. The labour huts shall be so placed that it does not hinder the progress of work or access to the worksite. The vacant possession of the land used, for the purpose shall be given back by contractor after completion of the work.

The security deposit of the contractor shall be released only after contractor demolishes all structures including foundations and gives back clear vacant possession of this land In the event the contractor has to shift his labour campus at any time during execution of the work on the instructions of local authorities or as per the requirement of the work progress or as may be required by BSCDCL, he shall comply with such instructions at his cost and risk and no claim whatsoever shall be entertained on this account.

3.49 WATCH, WARD AND LIGHTING OF WORK PLACE

The contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, OBSTRUCTIONS, lights, watchmen etc. during the progress of work as directed by Engineer-in- charge.

3.50 SCHEDULE OF QUANTITIES / BILL OF QUANTITIES

The quantities shown against the various items of work are only approximate quantities which may vary as per the actual requirement at site. Item which is not covered in the bill of quantities shall be executed by the Contractor with the approval of the BSCDCL. The rate for the same will be paid as per latest available UADD/ DSR/ MPPWD SOR rate. Incase item is NON SOR it shall be paid as per market rate analysis with 15% CPOH, maximum quantity up to 10% of the contract value.

3.51 INDIAN STANDARDS

Wherever any reference is made to any IS in any particular specifications, drawings or bill of quantities, it means the Indian Standards editions with up to date amendments issued till last date of receipt of tender documents.

3.52 TESTS AND INSPECTION

The contractor shall carry out the various mandatory tests as per specifications and the technical documents that will be furnished to him during the performance of the work. All the tests on materials, as recommended by UADD/MPPWD/CPWD, BSCDCL and relevant Indian Standard Codes or other standard specifications (including all amendments current at the last date of submission of tender documents) shall be got carried out by the contractor at the field testing laboratory or any other recognized institution/ laboratory, at the direction of the BSCDCL. All testing charges, expenses etc. shall be borne by the contractor. All the tests, either on the field or outside laboratories concerning the execution of the work and supply of materials shall be got carried out by the contractor or BSCDCL at the cost of the Contractor.

3.53 WORKS TO BE OPEN TO INSPECTION

All works executed or under the course of execution in pursuance of this contract shall at all times be open to inspection and supervision of the BSCDCL. The work during its progress or after its completion may also be inspected, by Chief Technical Examiner of Government of India (CTE) and/or an inspecting authority of State Government of State in which work is executed and/or by third party checks byowner/lients. The compliance of observations/improvements as suggested by the inspecting officers of BSCDCL/CTE/ State authorities/ Owners shall be obligatory on the part of the Contractor at the cost of contractor.

3.54 BORROW AREAS

The contractor shall make his own arrangements for borrow pits and borrow disposal areas including their approaches and space for movement of man, machinery, other equipment‟s as required for carrying out the works. The contractor shall be responsible for taking all safety measures, getting approval, making payment of royalties, charges etc. and nothing extra shall be paid to the contractor on this account and unit rates quoted by the contractor for various items of bill of quantities shall deemed to include the same.

3.55 CARE OF WORKS

From the commencement to the completion of works and handing over, the contractor shall take full responsibility for care thereof all the works and in case of any damage/loss to the works or to any part thereof or to any temporary works due to lack of precautions or due to negligence on part of Contractor, the same shall be made good by the Contractor.

3.56 CO-ORDINATION WITH OTHER AGENCIES

Work shall be carried out in such a manner that the work of other Agencies operating at the site is not hampered due to any action of the Contractor. Proper Co-ordination with other Agencies will be Contractor‟s responsibility. In case of any dispute, the decision of BSCDCL shall be final and binding on the contractor. No claim whatsoever shall be admissible on this account.

3.57 SETTING OUT OF THE WORKS

The contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the works. If at any time during the progress of works, shall any error appear or arise in the position, levels, dimensions or alignment of any part of the works, the contractor shall at his own

expenses rectify such error to the satisfaction of Engineer-in-charge. The checking of any setting out or of any line or level by the engineers of BSCDCL shall not in any way relieve the contractor of his responsibility for the correctness.

3.58 NOTICE BEFORE COVERING UP THE WORK

The contractor shall give not less than seven day"s notice before covering up or otherwise placin beyond the reach of measurement any work, to the Engineer-in-charge in order that the same may be inspected and measured. If any work is covered up or placed beyond the reach of inspection/measurement without such notice or his consent being obtained the same shall be uncovered at the contractor expenses and he shall have to make it good at his own expenses.

3.59 SITE CLEARANCE

The contractor shall ensure that the working site is kept clean and free of obstructions for easy access to job site and also from safety point of view. Before handing over the work to the BSCDCL the contractor shall remove all temporary structures like the site offices, cement go-down, stores, labour hutments etc., scaffolding rubbish, debris etc. left over materials tools and plants, equipments etc., clean the site to the entire satisfaction of the Engineer-in-charge. If this is not done the same will be got done by BSCDCL at his risk and cost.

The contractor shall clean all floors, remove cement/ lime/ paint drops and deposits, clean joinery, glass panes etc., touching all painter"s works and carry out all other necessary items of works to make the premises clean and tidy before handing over the building, and the rates quoted by the contractor shall be deemed to have included the same.

3.60 SET-OFF OF CONTRACTOR"S LIABILITIES

BSCDCL shall have the right to deduct or set off the expenses incurred or likely to be incurred by it in rectifying the defects and/or any claim under this agreement against the Contractor from any or against any amount payable to the contractor under this agreement including security deposit and proceeds of performance guarantee.

3.61 POSSESSION PRIOR TO COMPLETION

BSCDCL shall have the right to take possession of or use any completed or partially completed work or part of the work. Such possession or use shall not be deemed to be any acceptance of any work not completed in accordance with the contract agreement. If such prior possession or use by BSCDCL delays the progress of work an equitable adjustment in the time of completion will be made and the contract agreement shall be deemed to be modified accordingly. The decision of BSCDCL in such case shall be final binding and conclusive.

When the whole of the works or the items or the groups of items of work have been completed the contractor will give a notice to that effect to the Engineer in writing. The Engineer shall within 7 days of the date of receipt of such notice inspect the works and give instructions in writing to the contractor specifying the balance items of work which are

required to be done by the contractor and shall also notify the contractor of any defect in the works affecting completion.

The contractor shall during the course of execution prepare and keep updated a complete set of „as built" drawings to show each and every change from the contract drawings, changes recorded shall be countersigned by the Engineer- in- Charge and the contractor. Four copies of „as built" drawings shall be supplied to BSCDCL by the contractor within 30 days of the completion. All costs incurred in this respect shall be borne by the contractor.

3.62 EMPLOYMENT OF PERSONNEL

The contractor shall employ only Indian Nationals as his representatives, servants and workmen after verifying their antecedents and loyalty. He shall ensure that no personnel of doubtful antecedents and any other nationality in any way is associated with the works.

In case BSCDCL observed misconduct negligence or incompetence etc. on the part of any representative, agent, servant and workmen or employees etc. of the contractor, the BSCDCL shall have full power and without giving any reason to the contractor, instruct the contractor to remove such engineer / staff / worker from site and provide suitable replacements. The decision of the Engineer-in-charge shall be final and binding on the contractor. The contractor shall not be allowed any compensation on this account.

3.63 TECHNICAL STAFF FOR WORK

The contractor shall employ at his cost the adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose the numbers to be deployed, their qualification, experience as decided by BSCDCL shall be final and binding on contractor. The contractor shall not be entitled for any extra payment in this regard.

The technical staff should be available at site, whenever required by BSCDCL to take instructions.

Within 15 days of Letter of Award, the contractor shall submit a site organizational chart and resume including details of experience of the Project-in-Charge and other staff proposed to be deputed by him and the technical team shall be deputed by them on the Project after getting approval from Engineer-in-Charge. If desired by the contractor at later date, the Project-in-Charge and other staff whose resume is approved by BSCDCL can be replaced with prior written approval of BSCDCL and replacement shall be with equivalent or superior candidate only. Decision of Engineer-in-Charge shall be final and binding on the contractor.

Even after approving the site organizational chart, the Engineer-in-Charge due to technical reasons and exigency of work can direct the contractor to depute such additional staff as in view of Engineer-in-Charge is necessary and having qualification and experience as approved by the Engineer-in-Charge. The removal of such additional staff from the site shall only be with the prior written approval of Engineer-in-Charge. The contractor shall not be paid anything extra whatsoever on account of deployment of additional staff and decision of the Engineer-in- Charge shall be final and binding on the contractor.

In case the contractor fails to employ the staff as aforesaid he shall be liable to pay a reasonable amount not exceeding a sum of Rs. 50,000 (Rupees Fifty Thousand only) for

each month of default in the case of each person. The decision of the Engineer-in-charge as to number of Technical Staff to be adequate for the project and the period for which the desired strength of technical staff was not employed by the contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the contractor as to the amount and the contractor‟s liability to pay the said amount.

3.64 VALUABLE ARTICLES FOUND AT SITE

All gold, silver and other minerals of any description and all precious stones, coins, treasure, relics, antiques and all other similar things which shall be found in, under or upon the site, shall be the property of the owner/ BSCDCL.

3.65 MATERIALS OBTAINED FROM DISMANTLEMENT TO BE OWNER‟S PROPERTY

All materials like stone, boulders and other materials obtained during the work of dismantling, excavation etc. will be considered BSCDCL/owner property and such materials shall be disposed off to the best advantage of BSCDCL/owner according to the instructions in writing issued by the Engineer-in-charge.

3.66 FURNISHED OFFICE ACCOMMODATION & MOBILITY COMMUNICATION TO BE ARRANGED BY CONTRACTOR

On acceptance of tender, the contractor at his own cost will construct a suitably equipped office at site with basic facilities such as telephone(s), fax, internet, photocopier, computer(s) and printer(s) along with operator(s), regular electric & drinking water supply and staff carrying vehicles for the supervisory staff with driver, fuel and maintenance etc. as per the requirement of the project. The contractor shall maintain the aforesaid facilities intact/operational during the tenancy of the contract or maximum up to 6 months beyond the stipulated contractual completion date if the work is delayed due to any reasons. Operation and maintenance cost of all such materials, equipments / services shall be borne by the contractor.

The contractor shall also make sufficient arrangement for photography/video- graphy so that photographs video can be taken of any specific activity at any point of time. The contractor shall also make arrangement of software like MS Project etc. for the purpose of preparing progress report etc.

The contractor shall make all arrangements for ground breaking ceremony/inaugural function etc. for the project as required and the cost towards it deemed to be included in his rates/offer. Any expenditure already incurred/to be incurred by BSCDCL, shall be recovered from the contractor.

3.67 LABOUR LAWS –

LABOUR LAWS TO BE COMPLIED BY THE CONTRACTOR

The contractor shall obtain a valid license under the contract labour (Regulation & Abolition) Act 1970 and the contract labour Act (Regulation & Abolition)

CentralRules 1971 and amended from time to time, and continue to have a valid license until the completion of the work including defect liability period. The contractor shall also adhere by the provision of the child labour (Prohibition and Regulation) Act. 1986 and as amended from time to time.

The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.

Any failure to fulfil above requirement shall attract the penal provisions of this contract arising out the resultant for non execution of the work before the commencement of work. No labour below the age of 18 years shall be employed on the work.

PAYMENT OF WAGES:

The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the BSCDCL Contractor‟s Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him in respect of all labour directly or indirectly employed in the works for performance of the contractor‟s part of this contract, the contractor shall comply with or cause to be complied with the BSCDCL contractor‟s Labour Regulations in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorisedly made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

(a) The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non- fulfilment of the conditions of the contract for the benefit of the workers, non- payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.

(b) Under the provision of Minimum Wages (Central) Rules, 1950, the contractor is bound to allow to the labours directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at the same rate as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned

The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen‟s

Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor"s Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.

The contractor shall indemnify and keep indemnified BSCDCL against payments to be made under and for the observance of the laws aforesaid and the BSCDCL Contractor"s Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.

The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

LABOUR SAFETY PROVISION

The contractor shall be fully responsible to observe the labour safety provisions:

The contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, lights, watchmen etc. during the progress of work as directed by Engineer-in- charge.

In case of all labour directly or indirectly employed in work for the performance on the contractor"s part of this contract, the contractor shall comply with all rules framed by Govt. from time to time for the protection of health and sanitary arrangements for workers.

OBSERVANCE OF LABOUR LAWS

The contractor shall be fully responsible for observance of all labour laws applicable including local laws and other laws applicable in this matter and shall indemnify and keep indemnified BSCDCL against effect or non observance of any such laws. The contractor shall be liable to make payment to all its employees, workers and sub-contractors and make compliance with labour laws. If BSCDCL or the client/ owner is held liable as "Principal Employer" to pay contributions etc. under legislation of Government or Court decision in respect of the employees of the contractor, then the contractor would reimburse the amount of such payments, contribution etc. to BSCDCL and/ or same shall be deducted from the payments, security deposit etc. of the contractor.

The Contractor shall submit proof of having valid EPF registration certificate. He shall within 7 days of the close of every month, submit to BSCDCL a statement showing the recoveries of contributions in respect of each employee employed by or through him and shall furnish to BSCDCL such information as the BSCDCL is required to furnish under the provisions of para 36 B of the EPF scheme 1952 to the EPF authorities and other information required by EPFO authorities from time to time. He shall also submit a copy of challan every month in token of proof of having deposited the subscription and contribution of workers engaged on the project.

In case, the contractor is not complying the above provision BSCDCL shall withhold payment to the extent of 4.70% (Four point Seven Zero percent) of the value of the Running Account bill and shall release only after the submission of above mentioned details. If it is incumbent upon BSCDCL to deposit withhold amount with EPF authorities, the withhold amount shall be deposited by BSCDCL with EPF authorities. In such a case BSCDCL shall not refund this withheld amount to the contractor even after the production of EPF registration certificate.

MINIMUM WAGES ACT

The contractor shall comply with all the provisions of the minimum wages Act,1948, contract labour Act (Regulation & Abolition) 1970, and rules framed there under and other labour laws/local laws affecting contract labour that may be brought into force from time to time.

LABOUR CESS

The rates of the contractor shall be inclusive of labour cess. BSCDCL shall make a recovery @ 1% on account of labour cess from each RA bill of the contractor and labour cess so recovered/deducted shall be deposited with the Labour Board of the concerned state. In case the Labour Board is not established in the state, recovery made by BSCDCL on account of labour cess shall be retained under suspense account and will be deposited with the Labour Board at later date as & when the Labour Board is constituted in the state.

Every contractor, sub-contractor, affiliates, their legal assigns or heirs as the case may, shall be responsible for registration of every Building worker who has completed eighteen years of age but has not completed sixty years of age and who has been engaged in any Building or Other Construction Work for not less than Ninety Days during the preceding twelve months; with the Board / Funds as applicable under various sections of "THE BUILDINGS AND OTHER.

CONSTRUCTION WORKERS (REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE) ACT, 1996 and THE BUILDING AND OTHER

CONSTRUCTIONWORKERS" WELFARE CESS ACT, 1996.

The contractor shall also be responsible for maintaining register of beneficiaries i.e. the workers in such form as may be prescribed by the competent authority & the same shall be kept open at all reasonable times for inspection of relevant authority and officials of client / BSCDCL.

The contractor shall be further responsible for maintaining such register & records; giving such particulars of Building workers employed by him, the work performed by them, the number of hours of work which shall constitute a normal working day, the wages paid to them, the receipts given by them and, such other particulars in such form as may be prescribed by the authority or BSCDCL.

In the event of contractor failing to comply with the above clause(s) in part or in full, BSCDCL, without prejudice to any other rights or remedy available under law or any other clause(s) of contract, shall be at absolute liberty to forfeit any sum or sums that are payable or could become payable on account of execution of contract work and decision of Engineer-in-charge shall be final & binding in this regard on the contractor.

3.68 RECOVERY OF COMPENSATION PAID TO WORKMEN

In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Workmen"s Compensation Act, 1923, BSCDCL is obliged to pay compensation to a workman employed by the contractor, in execution of the works, BSCDCL will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the BSCDCL under sub-section (2) of Section 12, of the said Act, BSCDCL shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due to the contractor whether under this contract or otherwise. BSCDCL shall not

be bound to contest any claim made against it under sub-section (1) of Section 12, of the said Act, except on the written request of the contractor and upon his giving to BSCDCL full security for all costs for which BSCDCL might become liable in consequence of contesting such claim.

3.69 ENSURING PAYMENT AND AMENITIES TO WORKERS IF CONTRACTOR FAILS

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, BSCDCL is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act or under the BSCDCL Contractor‟s Labour Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by BSCDCL‟s Contractors, BSCDCL will recover from the contractor, the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to any other right or remedy available under this contract, BSCDCL shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by BSCDCL to the contractor whether under this contract or otherwise BSCDCL shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the BSCDCL full security for all costs for which BSCDCL might become liable in contesting such claim.

3.70 CHANGE IN FIRM‟S CONSTITUTION TO BE INTIMATED

Where the contractor is a partnership firm, the prior approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If prior approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause of tender document hereof and the same action may be taken, and the same consequences shall ensue as provided in the tender document

3.71 INDEMNITY AGAINST PATENT RIGHTS

The contractor shall fully indemnify the BSCDCL from and against all claims and proceedings for or on account of any infringement of any patent rights, design, trademark or name or other protected rights in respect of any construction plant, machine, work or material used for in connection with the works or temporary works.

3.72 LAW COVERING THE CONTRACT

This contract shall be governed by the Indian laws for the time being in force.

3.73 LAWS, BYE-LAWS RELATING TO THE WORK

The contractor shall strictly adhere by the provisions, for the time being in force, of law relating to works or any regulations and bylaws made by any local authority or any water &

lighting agencies or any undertakings within the limits of the jurisdiction of which the work is proposed to be executed. The contractor shall be bound to give to the authorities concerned such notices and take all approvals as may be provided in the law, regulations or bylaws as aforesaid, and to pay all fees and taxes payable to such authorities in respect thereof.

3.74 CONTRACT AGREEMENT

The Contractor shall enter into a Contract Agreement with the BSCDCL within 10 (TEN) days from the date of Letter of Award or within such extended time, as may be granted by the BSCDCL failing which no payment shall be released to the contractor. The cost of stamp papers, stamp duty, registration, if applicable on the contract, shall be borne by the Contractor. In case, the contractor does not sign the agreement as above or start the work within 10 (Ten) days of the issue of letter of Award, his earnest money is liable to be forfeited and Letter of award consequently will stand withdrawn.

3.75 MANNER OF EXECUTION OF AGREEMENT

The agreement as per prescribed Performa as enclosed shall be signed at the office of the BSCDCL within 10(TEN days) days from the date of issue of Letter of Award. The Contractor shall provide for signing of the Contract, appropriate Power of Attorney and the requisite documents/ materials. Unless and until a formal contract is prepared and executed, the Letter of Award read in conjunction with the Tendering Documents will constitute a binding contract.

The agreement will be signed in five originals and the Contractor shall be provided with one signed original and the other four originals will be retained by the BSCDCL

The Contractor shall provide free of cost to the BSCDCL all the Engineering data, drawings and descriptive materials submitted along with the tender, in at least three (3) copies to form an integral part of the Agreement within seven 7 days after issuing of Letter of Award.

Subsequent to signing of the Agreement, the Contractor at his own cost shall provide to the BSCDCL with at least five (5) true hard bound copies of Agreement within thirty (30) days of its signing.

3.76 JURISDICTION

The agreement shall be executed at BHOPAL on non-judicial stamp paper purchased in BHOPAL and the courts in BHOPAL alone will have jurisdiction to deal with matters arising there from, to the exclusion of all other courts.

3.77 ARBITRATION

1. Arbitration Procedure: If the efforts, to resolve all or any of the disputes through conciliation fail, then such a dispute shall be referred within 30 days from conclusion of conciliation process to a Sole Arbitrator who would be nominated by Executive Director Bhopal Smart City Development Corporation Limited, Bhopal. The arbitration and conciliation act 1996 as amended from time to time will be applicable. The venue of such arbitration shall be at Bhopal. The award of the sole Arbitrator shall be binding on all parties. The cost of Arbitration shall be borne by the respective parties. There will be no objections if the sole arbitrator nominated or appointed is an employee of BSCDCL.

2. The place of arbitration shall be Bhopal, M.P.

3. English Language: The request for arbitration, the answer to the request, the terms of reference, any written submissions, any orders and awards shall be in English and, if oral hearings take place, English shall be the language to be used in the hearings. The award shall be made in writing.

4. Enforcement of Award: The Parties agree that the decision or award, which shall be a speaking order, resulting from arbitration shall be final and binding upon the Parties and shall be enforceable in accordance with the provision of the Arbitration and Conciliation Act 1996 subject to the rights of the aggrieved parties to secure relief from any higher forum.

5. Performance during Arbitration: The Arbitration Proceedings shall be governed by Indian Arbitration and Conciliation Act 1996, as amended from time to time including provisions in force at the time the reference is made. Pending the submission of and/or decision on a Dispute and until the arbitral award is published; the Parties shall continue to perform their respective obligations under this Agreement without prejudice to a final adjustment in accordance with such award. The courts at Bhopal shall have the sole exclusive jurisdiction to try all the cases arising out of this agreement.

6. Notices: That any notice under the terms of this License shall be in writing by registered post or delivered personally and signed by the party or his/its duly authorized representative giving such notice. All activities including day to day management, billing, termination etc. will be carried out from the office of the CEO, Smart City Development Corporation Limited Bhopal or by his duly authorized representative. Notice shall be addressed as follows:

Chief Executive Officer

SECTION-4

LABOUR SAFETY, HEALTH & SANITARY RULES AND REGULATIONS INCLUDING FORMS

LABOUR SAFETY PROVISIONS

Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and hand holds shall be provided on the ladder and the ladder shall be given an inclination not steeper than ¼ to 1 (1/4 horizontal and 1 vertical).

Scaffolding or staging more than 3.6m (12 feet) above the ground or floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3 feet) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

Working platforms, gangways, and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more that 3.6m (12 feet) above ground level or floor level, they should be closely boarded, should have adequate width & should be suitable fastened as described in (2.0) above.

Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm (3 feet).

Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30 feet) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (11.5”) for ladder up to and including 3m (10 feet) in length. For longer ladders this width should be increased at least 1/4" for each additional 30 cm (1 ft.) of length. Uniform step spacing shall not exceed 30 cm (12"). Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of the work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident, and shall be bound to bear the expenses of defense of every suit, action or other proceeding at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may, with the consent of the Contractor, be paid to compensate any claim by any such person.

EXCAVATION AND TRENCHING

All trenches, 1.2mts.(four feet) or more in depth, shall at all times be supplied with at least one ladder for each 30m.(100 feet) in length or fraction thereof, ladder shall be extended from bottom of the trench to at least 90cm (3feet) above the surface of the ground. The side of the trenches, which are 1.5 m. (5feet) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger or sides to collapsing. The excavated materials shall not be placed within 1.5m (5 feet) of the edges of the trench or half of the depth of the trench whichever is more.

Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

Demolition - Before any demolition work is commenced and also during the progress of the work following precautions shall be observed:

All roads and open areas adjacent to the work site shall either be closed or suitably protected.

No electric cable or apparatus which is likely to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.

All practical steps shall be taken to prevent danger to persons employed from risk or fire or explosion or flooding. No floor, roof or other part of the building shall be overloaded with debris or materials as to render it unsafe.

All necessary personal safety equipments as considered adequate by the Engineer-in-charge should be kept available for the use of persons employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate step to ensure proper use of equipment by those concerned. The following safety equipment shall be invariably provided.

Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

Those engaged in white washing and mixing or stacking of cement bags or any materials which are injurious to the eye shall be provided with protective goggles.
Those engaged in welding works shall be provided with welders protective eye shields.

Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe interval.

When workers are employed for works in sewers and manholes, which are in active use, the Contractors shall ensure that the manhole covers are opened and ventilated at-least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident the public. In addition, the contractor shall ensure that the following safety measures are adhered to:

Entry for workers into the sewer line shall not be allowed except under supervision of the JE or any other higher officer.

At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manholes for working inside.

Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper which changes color in the presence of such gases and gives indication of their presence.

Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.

Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

No smoking or open flames shall be allowed near the blocked manhole being cleaned.

The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.

Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-In-charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

Gas masks with Oxygen Cylinder should be kept at site for use in emergency.

Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air-blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at-least 2 metres away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present. The workers engaged for cleaning the manholes / sewers should be properly trained before allowing to work in the manhole.

The workers shall be provided with Gumboots or non sparking shoes, bump helmets and gloves non sparking tools, safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.

Workmen descending a manhole shall try each ladder step or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.

The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-In-charge regarding the steps to be taken in this regard in an individual case will be final.

The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form wherever men above the age of 18 are employed on the work of lead painting the following precautions should be taken.

No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.

Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

a) White lead, sulphate or lead work products containing those pigments shall not be used in painting operation except in the form of paste or of paints ready for use.
Measures shall be taken whenever required in order to prevent danger arising from the application of paint in the form of spray. Measures shall be taken, whenever practicable to prevent danger arising out of dust caused by dry rubbing down and scrapping.

b) Adequate facilities shall be provided to enable working painter to wash during and on cessation of work. Suitable arrangements shall be made prevent clothing put off during working hours being spoiled by painting materials.

c) Cases of lead poisoning and of suspected lead poisoning shall be notified and shall be subsequently verified by a medical man appointed by the competent authorities of BSCDCL. The BSCDCL may require when necessary a medical examination of workers. Instructions with regard to the special hygienic precautions to be taken in the painting trade shall be distributed to working painters. When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provisions should be made for prompt first aid treatment for all injuries likely to be sustained during the course of the work. Use of hoisting machines and tackle including their attachment encourage and supports shall conform to the following standard of conditions.

d) These shall be of good mechanical construction, sound material and adequate strength and free from patent, defects and shall be kept in good working order.

Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffolding, winch or giving signals to operator. In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this clause shall be loaded beyond the safe working load except for the purpose of testing. In case of BSCDCL machines, the safe working load shall be notified by the Engineer-in-Charge. As regards Contractor"s machines the Contractor shall notify the safe working load of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get verified by the Engineer-in-Charge.

Motors gearing, transmission electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguard. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of

the load. Adequate precautions should be taken to reduce the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel, such as gloves sleeves and boots as may be necessary be provided. The worker should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

All scaffold, ladders, and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place of work spot. The person responsible for compliance of the safety codes shall be named therein by the contractor.

To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the Contractor shall be open to inspection by BSCDCL Official or their representatives.

Notwithstanding the above Clauses from (i) to (xiv) there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

SECTION-5

FORMS AND FORMATS

Annexure-"II"

ACCEPTANCE OF TENDER CONDITIONS

From: (On the letter head of the company by the authorized officer having power of attorney)

BSCDCL,
……
Sub: Name of the work & NIT No.:

Sir,

This has reference to above referred tender. I/We are pleased to submit our tender for the above work and I/We hereby unconditionally accept the tender conditions and tender documents in its entirety for the above work.

I/we are eligible to submit the tender for the subject tender and I/We are in possession of all the documents required.

I/We have viewed and read the terms and conditions of this GCC/SCC carefully. I/We have downloaded the following documents forming part of the tender document:

a. Notice Inviting Tender (pg……..to….pg-)
b. Instructions to Bidder (ITB) & General conditions of Contract (pg……..to….pg-)
c. Technical Specifications (pg……..to….pg-)
d. Bill of Quantities (BOQ)- (pg……..to….pg-)
e. Tender Drawings (pg……..to….pg-)
f. Acceptance of Tender Conditions (Annexure M)
g. Corrigendum ,if any (pg……..to….pg-)

I/we have uploaded the mandatory scanned documents such as cost of tender document, EMD, e-Tender Processing Fee and other documents as per Notice Inviting e-tender AND I/We agree to pay the cost of tender document, EMD, e- Tender Processing Fee (only receipt/proof of online payment) and other documents in physical form in the form and manner as described in NIT/ITT.

Should this tender be accepted, I/We agree to abide by and fulfill all terms and conditions referred to above and as contained in tender documents elsewhere and in default thereof, to forfeit and pay BSCDCL, or its successors or its authorized nominees such sums of money as are stipulated in the notice inviting tenders and tender documents.

If I/we fail to commence the work within 10 days of the date of issue of Letter of Award and/or I/we fail to sign the agreement as per Contract and/or I/we fail to submit performance guarantee as per of Clauses of Contract, I/we agree that BSCDCL shall, without prejudice to any other right or remedy, be at liberty to cancel the Letter of Award and to forfeit the said earnest money as specified above.

Your faithfully,
(Signature of the Bidder with
Rubber stamp)

Dated

Appendix - 'N"

FORM XXV

DETAILS OF THE BALANCE WORK IN HAND AS ON_____

(UPTO THE PRECEDING MONTH OF SUBMISSION OF BID) WITH BSCDCL

(To be submitted in Envelop-1)

S. No	Name of the Unit/Zone/SBG/R G B	Contract Value	Date of start as per LOI/ Contract	Date of completion as per LOI / Contract	Work done up to the preceding month of submission of bid	Balance value of work

Note: The bidder shall also include the value of all such works which are awarded to bidder but yet not started up to the preceding month of submission of bid.

Appendix –"0"

FORM XXVI AFFIDAVIT

(To be submitted by bidder on non-judicial stamp paper of Rs. 100/- (Rupees Hundred only) duly attached by Notary Public)

(To be submitted in Envelop-1)

Affidavit of Mr. .....S/o ..... R/o

.....

I, the deponent above named do hereby solemnly affirm and declare as under:

That I am the Proprietor/Authorized signatory of M/s……. Having its Head Office/Regd. Office at ……

That the information/documents/Experience certificates submitted by M/s…… along with the tender for …… *(NAME OF WORK*)……

To BSCDCL Ltd. are genuine and true and nothing has been concealed.

I shall have no objection in case BSCDCL verifies them from issuing authority(ies). I shall also have no objection in providing the original copy of the document(s), in case BSCDCL demand so for verification.

I hereby confirm that in case, any document, information & / or certificate submitted by me found to be incorrect / false / fabricated, BSCDCL at its discretion may disqualify / reject / terminate the bid/contract and also forfeit the EMD / All dues.

I shall have no objection in case BSCDCL verifies any or all Bank Guarantee(s) under any of the clause(s) of Contract including those issued towards EMD and Performance Guarantee from the Zonal Branch /office issuing Bank and I/We shall have no right or claim on my submitted EMD before BSCDCL receives said verification.

That the Bank Guarantee issued against the EMD issued by (name and address of the Bank) is genuine and if found at any stage to be incorrect / false / fabricated, BSCDCL

shall reject my bid, cancel pre-qualification and debar me from participating in any future tender for three years.

I, ..., the Proprietor / Authorised signatory of M/s..... do hereby confirm that the contents of the above Affidavit are true to my knowledge and nothing has been concealed there from..... and that no part of it is false.

Verified at ..... this..... day of .....

DEPONENT

ATTESTED BY (NOTARY PUBLIC)

APLICATION FOR EXTENSION OF TIME

(To be completed by the Contractor)

P A R T –I

Name of Contractor

Name of the work as given in the Agreement

Agreement No.

Estimated amount put to tender

Date of commencement work as per agreement

Period allowed for completion of work as per agreement

Date of completion stipulated as per agreement

Period for which extension of time has been give previously

Extension granted

First extension vide Engineer-in-charge letter No… ……date	Months	Days
2nd extension vide Engineer-in-charge letter No…… date	Months	Days
3rd extension vide Engineer-in-charge letter No……. date	Months	Days
4th extension vide engineer-in-charge letter No……. date	Months	Days

Total extension previously given

Reasons for which extension have been previously given (copies of the previous application should be attached)

Period for which extension is applied for:

Hindrances on account of which extension is applied for with dates on which hindrances occurred, and the period for which these are likely to last.

Serial No.

Nature of hindrance

Date of Occurrence

Period for which it is likely to last

Period for which extension required for this particular hindrance. Over

lapping period, if any, with reference to item

Net extension applied for

Remarks, if any

Total period for which extension is now applied for on account of hindrances mentioned above ……. Month/ days.

Extension of time required for extra work.

Details of extra work and on the amount involved:

Total value of extra work

Proportionate period of extension of time based on estimated amount put to tender on account of extra work.

Total extension of time required for 11 & 12

Submitted to the Engineer-in-Charges office.

SIGNATURE OF CONTRACTOR

DATE

APPLICATION FOR EXTENSION OF TIME

(PART – II)

Date of receipt of application from Contractor for the work in the Engineer-in-charge office.

Acknowledgement issued by Engineer-in-charge vide his letter No. dated

Engineer-in-charge remarks regarding hindrances mentioned by the Contractor.

Serial No.

Nature of hindrance

Date of occurrence of hindrance

Period for which hindrance, is likely to last

Extension of time period applied for by the contractor

Over lapping period, if any, giving reference to items which over lap

Net period for which extension is recommended. Remarks as to why the hindrance occurred and justification for extension recommended.

Engineer-in-charge recommendations.

The present progress of the work should be stated and whether the work is likely to be completed by the date up to which extension has been applied for. If extension of time is not recommended, what compensation is proposed to be levied under the agreement.

SIGNATURTE OF ENGINEER-IN-CHARGE

PROFORMA FOR EXTENSION OF TIME P A R T –III

To

NAME

ADDRESS OF THE CONTRACTOR SUBJECT:
Dear Sir(s)

Reference your letter No _____ dated _____ , in connection with the grant of extension of time for completion of the work…..

The date of completion for the above mentioned work, is …… as stipulated in the agreement, dated ……

Extension of time for completion of the above mentioned work is granted upto_____, without prejudice to the right of the BSCDCL to recover compensation for delay in accordance with the provision made in Clause of the said agreement dated the ___/ ___/ ___. It is also clearly understood that the BSCDCL shall not consider any revision in contract price or any other compensation whatsoever due to grant of this extension.

Provided that notwithstanding the extension hereby granted, time is and shall still continue to be the essence of the said agreement.

Yours faithfully,

FOR Bhopal Smart City Development Corporation Ltd.

PROFORMA OF BANK GUARANTEE IN LIEU OF E M D (TENDER BOND)

(Judicial Stamp paper of appropriate value as per stamp Act-of respective state)

In consideration of Bhopal Smart City Development Corporation Limited, having its Registered Office at, Near Natraj Petrol Pump Sector A, Berkheda (hereinafter called "BSCDCL" which expression shall unless repugnant to the subject or context include its successors and assigns) having issued Notice Inviting Tender No..... and M/s..... having its Registered Head Office at..... (hereinafter called the "BIDDER") is to participate in the said tender for.....

Whereas BSCDCL, as a special case, has agreed to accept an irrevocable and unconditional Tender Bond Guarantee for an amount of Rs..... valid upto..... from the Bidder in lieu of Cash Deposit of Rs..... required to be made by the Bidder, as a condition precedent for participation in the said tender.

We the ..... (hereinafter called the "BANK") having its Registered, Office at..... and branch office at..... do hereby unconditionally and irrevocably undertake to pay immediately on demand in writing and without demur/protest any amount but not exceeding Rs ..... Any such demand made by BSCDCL shall be conclusive and binding on us irrespective of any dispute or differences that may be raised by the Bidder. Any change in the constitution of the Bidder or the Bank shall not discharge our liability under the guarantee.

We, the..... Bank, lastly undertake not to revoke this guarantee during its currency without the prior consent of BSCDCL in writing and this guarantee shall remain valid upto.....Unless a claim is made within three months from the date of expiry i.e.

..... (three months after the date of expiry), we shall be relieved of our liability under

this guarantee thereafter.

FOR AND ON BEHALF OF BANK

PLACE :

DATED :

WITNESS.

1.

2

PROFORMA OF BANK GUARANTEE (PERFORMANCE)

(Judicial Stamp paper of appropriate value as per stamp Act-of respective state)

Whereas the Bhopal Smart City Development Corporation Limited, having its Registered Office at BSCDCL Near Natraj Petrol Pump Sector A, Berkheda, Bhopal (hereinafter called "BSCDCL" which expression shall include its successors and assigns) having awarded a work order/contract / supply order No. dated (hereinafter called the contract) to M/s. .... (hereinafter called

the contractor / supplier) at a total price of Rs..... subject to the terms and conditions contained in the contract.

WHEREAS, the terms and conditions of the contract require the contractor to furnish a

Rs.... ..... (Rupees.....
bank guarantee for .. ..) being ..... % of the

total value of the contract for proper execution and due fulfillment of the terms and conditions contained in the contract.

We, the Bank, (hereinafter called the "Bank") do hereby unconditionally and

BSCDCL
irrevocably undertake to pay to immediately on demand in writing and without protest/or demur all moneys payable by the contractor/supplier to BSCDCL in connection with the execution/supply of and performance of the works/equipment, inclusive of any loss, damages, charges, expenses and costs caused to or suffered by or which would be caused to or suffered by BSCDCL by reason of any breach by the contractor/supplier of any of the terms and conditions contained in the contract as specified in the notice of demand made by BSCDCL to the bank. Any such demand made by BSCDCL on the bank shall be conclusive evidence of the amount due and payable by the bank under this guarantee. However, the Bank's liability under this guarantee, shall be limited to Rs..... in the aggregate

and the bank hereby agrees to the following terms and conditions:-

(i) This guarantee shall be a continuing guarantee and irrevocable for all claims of BSCDCL as specified above and shall be valid during the period specified for the performance of the contract including the period of maintenance/warranty i.e. up to……

(ii) We, the said bank further agree with BSCDCL that shall have the fullest liberty without our consent and without affecting in any manner our obligations and liabilities hereunder to vary any of the terms and conditions of the said contract or to extend time for performance of contract by the contractor
from time to time or to postpone for any time or from time to time any of the powers exercisable by BSCDCL against the contractor/supplier under the contract and forbear or enforce any of the terms and conditions relating to the said contract and we shall not be relieved from our liability by reason of any such variations or extension being granted to the contractor or for any forbearance, act or omission on the part of BSCDCL or any indulgence by BSCDCL to the contractor or by any such matter or thing whatsoever, which under the law relating to the sureties would, but for this provision, have effect of so relieving us.

This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever BSCDCL may now or at any time have in relation to the

performance of the works/equipment and the company shall have full re-course to or enforce this security in performance to any other security or guarantee which the BSCDCL may have or obtained and there shall be no forbearance on the part of the company in enforcing or requiring enforcement of any other security which shall have the effect of releasing the Bank from its full liability. It shall not be necessary for BSCDCL to proceed against the said contractor/supplier before proceeding against the Bank.

This guarantee/ undertaking shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier/ contractor, but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to BSCDCL in terms thereof are paid by the Bank.

The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the bank in terms hereof, shall not be otherwise effected or suspended by reasons of any dispute or disputes having been raised by the supplier/contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial of liability by the supplier/contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to BSCDCL in terms hereof.

We, the said Bank, lastly undertake not to revoke this guarantee during its currency except with the previous consent of BSCDCL in writing. Unless a claim is made in writing within three months from the date of expiry of this guarantee i.e.....
(three months after the date of expiry) we shall be
relieved this guarantee thereafter.from all liabilities
under

Sign this …….. day of ……..at ……..

For and on behalf of Bank

WITNESS.

1.

2.

PROFORMA OF BANK GUARANTEE (FOR MOBILIZATION ADVANCE)

(Judicial Stamp paper of appropriate value as per stamp Act-of respective state)

Bhopal Smart City Development Corporation Limited, Near Natraj Petrol Pump, Sector A, Berkheda, Bhopal, Madhya Pradesh 4620231.0 In consideration of the Bhopal Smart City Development Corporation Limited, having its Registered Office at BSCDCL, Near Natraj Petrol Pump, Sector A, Berkheda,Bhopal (hereinafter called "BSCDCL" which expression shall unless repugnant to the subject or context include his successor and assigns) having agreed under the terms and conditions of Contract No..... dated..... made between..... and BSCDCL in connection with..... (hereinafter called "the said contract") to make at the request of the Contractor a Mobilization Advance of Rs..... for utilizing it for the purpose of the Contract on his furnishing a guarantee acceptable to BSCDCL, we the ..... Bank Ltd., (hereinafter referred to the "the said Bank") and having our registered office at..... do hereby guarantee the due recovery by BSCDCL of the said advance as provided according to the terms and conditions of the Contract. We..... do hereby undertake to pay the amount due and payable under this Guarantee without any demur, merely on a demand from BSCDCL stating that the amount claimed is due to BSCDCL under the said Agreement. Any such demand made on the..... shall be conclusive as regards the amount due and payable by the..... under this guarantee and..... agree that the liability of the ..... to pay BSCDCL the amount so demanded shall be absolute and unconditional notwithstanding any dispute or disputes raised by the Contractor and notwithstanding any legal proceeding pending in any court or Tribunal relating thereto. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs..... We ……. Bank further agree that BSCDCL shall be the sole judge of and as to whether the amount claimed has fallen due to BSCDCL under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by BSCDCL on account of the said advance together with interest not being recovered in full and the decision of BSCDCL that the amount has fallen due from contractor or the said Contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by BSCDCL shall be final and binding on us.

We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till BSCDCL certify that the said advance has been fully recovered from the said Contractor, and accordingly discharges this Guarantee subject, however, that BSCDCL shall have no claims under this Guarantee after the said advance has been fully recovered, unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.

BSCDCL shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or indemnity from time to time to vary any of the terms and conditions of the said Contract or the advance or to extend time of performance by the said Contractor or to postpone for any time and from time to time of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of terms and conditions governing the said Contract or the advance or securities available to BSCDCL and the said Bank shall not be released from its liability under these presents by any exercise by BSCDCL of the liberty with reference to the matters aforesaid or by reasons of time being given to the said Contractor or any other forbearance, act or omission on the part of BSCDCL or any indulgence by BSCDCL to

The said Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the bank from its such liability. 5.0 It shall not be necessary for BSCDCL to proceed against the Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which BSCDCL may have obtained or obtain from the Contractor or shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of BSCDCL in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.

Dated this .....day of.....

For and on behalf of Bank

(NAME AND DESIGNATION)

Dated:

PROFORMA OF BANK GUARANTEE

(IN LIEU OF SECURITY DEPOSIT)

(Judicial Stamp paper of appropriate value as per stamp Act-of respective state)

Bhopal Smart City Development Corporation Ltd., Near
Natraj Petrol Pump, Sector A, Berkheda,Bhopal

In consideration of the Bhopal Smart City Development Corporation Ltd., having its

Registered Office at Near Natraj Petrol Pump Sector A, Berkheda(hereinafter called "BSCDCL") which expression shall include its successors and assigns having awarded to M/s..... (hereinafter called "the Supplier/Contractor") which expression shall wherever the subject or context so permits includes its successors and assigns) a Contract in terms inter-alia of BSCDCL's letter No..... dated..... and the Contract/Purchase Conditions of BSCDCL and upon the condition of the Supplier/Contractor furnishing Security for the performance of the Supplier's obligations and /or discharge of the contractor's/supplier's liability under and/or in connection with the said supply contract upto a sum of Rs..... (Rupees..... only)

We,..... ((hereinafter called "The Bank") which expression shall include its successors and assigns) hereby undertake and guarantee payment to BSCDCL forthwith on the same day on demand in writing and without protest or demur of any and all moneys payable by the supplier/contractor to BSCDCL under, in respect or in connection with the said contract inclusive of all the losses, damages, costs, charges and expenses and other moneys payable in respect of the above as specified in any notice of demand made by BSCDCL to the Bank with reference to this guarantee upto and aggregate limit of Rs…....(Rupees.....only) and the bank hereby agree with BSCDCL that:

This Guarantee shall be continuing guarantee and shall …… remain valid and irrevocable for all claims of BSCDCL and liabilities of Supplier/Contractor arising upto and until midnight of.....

This Guarantee shall be in addition to any other Guarantee or Security whatsoever that BSCDCL now or at any time have in relation to the Supplier's obligations/liabilities under and/or in connection with the said supply/contract, and BSCDCL shall have full authority to take recourse or to enforce this Security in preference to any other Guarantee or Security which BSCDCL may have or obtain and no for bearance on the part of BSCDCL in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its liability hereunder.

BSCDCL shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the Supplier's/Contractor's obligations and/ or liabilities under or in connection with the said supply/contract or to grant time and / or indulgence to the supplier / contractor or to increase or otherwise vary the prices or the total contract value or to release or to forbear from enforcement of all or any of the conditions under the said supply / contract and / or the remedies of BSCDCL under any other security/securities now or hereafter held by BSCDCL and no such dealings, increase(s) or other indulgence(s) or arrangement(s) with the supplier / contractor or releasing or forbearance whatsoever shall have the effect of releasing the Bank from its full liability to BSCDCL hereunder or prejudicing rights of BSCDCL against the Bank. This Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier / contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to BSCDCL in terms thereof.

The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the Bank in terms hereof shall not be otherwise affected or suspended by reason of any dispute or disputes having been raised by the supplier /contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial or liability by the supplier/ contractor stopping/ preventing or purporting to stop or prevent any payment by the Bank to BSCDCL in terms thereof.

The amount stated in any notice of demand addressed by BSCDCL to the Guarantor as liable to be paid to BSCDCL by the supplier/contractor or as suffered or incurred by BSCDCL on account of any losses or damages, costs, charges and / or expenses shall as between the Bank and BSCDCL be conclusive of the amount so liable to be paid to BSCDCL or suffered or incurred by BSCDCL as the case may be and payable by the Guarantor to BSCDCL in terms hereof subject to a maximum of Rs ..... (Rupees ..... only),

Unless demand or claim under this Guarantee is made on the Guarantor in writing within three months form the date of expiry of the Guarantee i.e upto ..... the Guarantor shall be discharged from all liabilities under this Guarantee there under.

Notwithstanding anything contained herein before our liability under this guarantee is restricted to Rs . ..... (Rupees .....only). This guarantee will expire on..... Any claim under this Guarantee must be received by us within three months from the date of expiry i.e. ..... (date, three months after the expiry date) and if no such claim has been received by us by that date all your rights under this guarantee will cease.

For and on behalf of the Bank

Place Date

WITNESS:

1. 2.

PROFORMA OF BANK GUARANTEE
(FOR MOBILIZATION ADVANCE WITH INTEREST BEARING)

(Judicial Stamp per Stamp Act - paper of appropriate value as respective state)

Bhopal Smart City Development Corporation Limited,
Bhopal, Pin- 462023

In consideration of the Bhopal Smart City Development Corporation Limited., having its Registered Office at Bhopal -462023 (hereinafter called "BSCDCL" which expression shall unless repugnant to the subject: or context Include his successor and assigns) having agreed under the terms and conditions of Contract No. dated made between (name of the contractor) and BSCDCL in connection with (name of work) (hereinafter called "the said contract") to make at the request of the Contractor a Mobilization Advance of Rs. carrying interest @ … % p.a. for utilizing it for the purpose of the Contract on his furnishing a guarantee acceptable to BSCDCL, we the Bank (hereinafter referred to the "the said Bank") and having our registered office at do hereby guarantee the due recovery by BSCDCL of the said advance alongwith interest as provided according to the terms and conditions of the contract. We ...

do hereby undertake to pay the amount due and payable under this Guarantee without any demur, merely, on a demand from BSCDCL stating that the amount claimed is due to BSCDCL under the said Agreement. Any such demand made on the said bank shall be conclusive as regards the amount due and payable by the said contractor under this guarantee and agree that the liability of the said bank to pay BSCDCL the amount so demanded shall be absolute and unconditional notwithstanding any dispute or disputes raised by the Contractor and notwithstanding any legal proceeding pending in any court or Tribunal relating thereto. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs ……. inclusive of interest @ …….% p.a.

We the said bank further agree that BSCDCL shall be the sole judge of and as to whether the amount claimed has fallen due to BSCDCL under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by BSCDCL on account of the said advance together with interest not being recovered in full and the decision of BSCDCL that the amount has fallen due from' contractor or the said Contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by BSCDCL shall be final and binding on us.

We, the said Bank, further agree that the Guarantee herein contained shall remain

in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till BSCDCL certify Contractor, and accordingly discharges this Guarantee subject, however, that BSCDCL shall have no claims under this Guarantee unless a notice of the claims under this Guarantee has been served on the Bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.

BSCDCL shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or indemnity from time to time to vary any of the terms and conditions of the said Contract or the advance or to extend time of performance by the said Contractor or to postpone for any time and from time to time of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of terms and conditions governing the said Contract or the advance or securities available to BSCDCL and the said Bank shall

not be released from its liability under these presents by any exercise by BSCDCL of the liberty with reference to the matters aforesaid or by reasons of time being given to the said Contractor or any other forbearance, act or omission on the part of BSCDCL or any indulgence by BSCDCL to the said Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the bank from its such liability.

It shall not be necessary for BSCDCL to proceed against the Contractor before proceeding against the Bank and Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which BSCDCL may have obtained or obtain from the Contractor or shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of BSCDCL in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.

Dated this…..…. day of…….....

Place:

Date:

Witness:

1.

PROFORMA OF
INDENTURE FOR SECURED ADVANCE OR CREDIT

THIS INDENTURE made this day of _____ Between __ (hereinafter called the contractor) which expression shall where the Context as admits or implies be deemed to include his executor/administrators and assign of the one part and National Buildings Construction Corporation Ltd., having its Registered Office at BSCDCL, Bhopal (hereinafter called the Engineer) which expression shall where the context so admits or implies be deemed to include its successors and assign of the other part.

Whereas by an agreement dated (hereinafter called the said agreement). The

Contractor has agreed to construct.....

And whereas the Contractor has applied to the Engineer that he may be or be given credited for materials brought by him to the site of the work subject to the said agreement for use in construction of the work.

NOW THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Rs._____ (Rupees _____ only) paid to the contractor by the Engineer. The receipt where the Contractor hereby acknowledges and of such advance or credited (if any) as may be made to him as aforesaid the Contractor hereby covenants and agrees with The Engineer and declares as follows:

That all sums given as advance or credit by The Engineer to the Contractor as aforesaid shall be employed by the Constructor in or toward the execution of the said works and for no other purpose whatsoever.

That the material for which the advance or credit is given are offered to and accepted by The Engineer as security and are absolutely the Contractor's own property and free from encumbrances of any kind the Contractor will not make any application for or receives further advance or credit on the security or material which are not absolutely his own property and free from encumbrances of any kind and the Contractor shall indemnify The Engineer against any claims to any material in respect of which advance or credit has been made to him as aforesaid.

That the said material and all other material on the security of which any further advance or advances or credit may be given as aforesaid (hereinafter called the said materials) shall be used by the Contractor s solely in the execution of the said works in accordance with the direction of the Engineer and in terms of said agreement.

That the Contractor shall make at his own cost all necessary and adequate arrangement for the proper safe custody and protection against all risks of the said material and that until used in the construction as aforesaid the material shall remain at the site of the said works in Contractor's custody and on his responsibility and shall at all times be open to inspection by The Engineer. In the events of the materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in greater degree than in due to reasonable use and wear thereof the Contractor will replace the same with other materials of like quality of repair and make good the same as required by The Engineer. That said material shall not on any account be removed from the site of work expect with the written permission of The Engineer.

That the advance shall be repayable in full when or before Contractor receives payment from The Engineer of the price payable to him for the said work under the term and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done then on the occasion of each payment

The Engineer will be at liberty to make a recovery from the Contractor's bill from such payments by deducting there from the value of the said materials than actually used in the contraction and in respect of which recovery has not been made previously. The value of this purpose being determined in respect of each description of materials at the rates at which the amounts of the advance as made under these presents was calculated.

That if the Contractor shall at any time make at any default in the performance of observance in respect of any of the terms and provisions of the said agreement or of that provisions the total amount of the advance or advances that may still be owing to The Engineer, shall immediately on the happening of such default be repayable by the Contractor to The Engineer together with interest thereon at 12% p.a. from the date of respective dated to such advance or advances to the date of payment and with all costs. Damages and expenses incurred by The Engineer in or for recovery hereof or the Contractor hereby covenants and agrees with The Engineer to repay and pay the same respective to him accordingly.

That the Contractor hereby charges all the said materials with the repayment to The Engineer of all sums advances or credit as aforesaid and all costs. Charges, damages and expenses payable under these presents PROVIDED ALWAYS it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and wherever the covenant for payment and repayment herein before contained shall be become enforceable and the money owing shall not be paid in accordance therewith. The Engineer may at any time thereafter adopt all or any of the following courses he may deem best:

Seize the utilize the said material or any part thereof in the completion of the said works in accordance with the provision in that behalf contained in the said agreement debating the Contractor with the actual cost of effecting such completion and the amount due in respect of advance or credit under these presents and crediting the Contractor with value of work done as if he has carried it out in accordance with the said agreement and the rates thereby provided if the balance is against the Contractor is to pay the same to the engineer on demand.

Remove and sell by public action the seized materials or any part thereof and out of the money arising from the sale repay the engineer under these presents and pay over the surplus (if any) to the Contractor.

Deduct all or any part of the moneys owing from any sums due to the contractor under said agreement..Expect in the event of such default on the part of contractor as aforesaid, interest or the said advance shall not be payable.

That in the event of conflict between the provisions of these presents and the said agreements, the provision of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents, the settlement of which has not been hereinbefore expressly provided for the same shall so far as is lawful be subject to jurisdiction of BHOPAL courts only.

IN WITNESS whereof the said the engineer and the contractor hereunto set their respective hands and seals the day year first above written.

Signed Sealed and delivered by

Contractor The Engineers

AGREEMENT FORM

This agreement made on day of DD-MM-YY, between the Bhopal Smart City Development Corporation Limited (BSCDCL), a company incorporated under the Companies Act, 2013 having its Registered Office at BSCDCL Zone -14, Bhopal Municipal Corporation, BHEL, Govindpura Bhopal 462023, (hereinafter referred to as the "BSCDCL" which expression shall include its administrators, successors, executors and assigns) of the one part and M/s…….(hereinafter referred to as the "Contractor" which expression shall unless the context requires otherwise include its administrators, successors, executors and permitted assigns) of the other part WHEREAS, BSCDCL, has desirous of ……under Smart City Project (hereinafter referred to as the "PROJECT") had invited tenders as per tender documents vide Tender No……. AND WHEREAS M/s ……. And Contractors had participated in the above referred tender vide their tender opened on DD.MM.YY and BSCDCL has accepted their aforesaid tender and issued Letter of Intent for ……. under Smart City Project on the terms and conditions contained in its Letter of Intent No. Ref. …….Date.DD.MM.YY and the documents referred to therein, which have been unequivocally accepted by M/s ……..vide their acceptance letter along with performance bank guarantee dated DD.MM.YY resulting into a contract. NOW THEREFORE THIS DEED WITNESSETH AS UNDER:

ARTICLE 1.0 – AWARD OF CONTRACT

SCOPE OF WORK BSCDCL has awarded the contract to M/s …… for the work of ……
under Smart City Project on the terms and conditions in its Letter of Intent No. Ref. …… Bhopal, Date: DD.MM.YY and the documents referred to therein.
The award will take effect from the date of issue of work order. The terms and expressions used in this agreement shall have the same meanings as are assigned to them in the "Contract Documents" referred to in the succeeding Article.

ARTICLE 2.0 – CONTRACT DOCUMENTS

The contract shall be performed strictly as per the terms and conditions stipulated herein and in the following documents attached herewith (hereinafter referred to as "Contract Documents").BSCDCL Notice Inviting Tender No……BSCDCL's tender documents consisting of:

Section 1 to 5 -General Conditions of Contract (GCC) & others
Section 6-8 - Special Conditions of Contract including Appendices & Annexures and others
Section- 9 – Bill of quantity
Section-10- Drawings
Amendments/errata
Financial proposal-Bill of quantity quoted by M/s …….
Letter Of Intent Ref. No……/BSCDCL/2017, Bhopal, Date: 24/10/2017 ISSUED BY BSCDCL

Acceptance letter and performance guarantee submitted by M/s ……..
All the aforesaid contract documents referred to in Para above shall form an integral part of this Agreement, in so far as the same or any part thereof column, to the tender documents and what has been specifically agreed to by BSCDCL in its Letter of Intent. Any matter inconsistent therewith, contrary or repugnant thereto or deviations taken by the Contractor in its "TENDER" but not agreed to specifically by BSCDCL in its Letter of Intent, shall be deemed to have been withdrawn by the Contractor without any cost implication to BSCDCL. For the sake of brevity, this Agreement along with its aforesaid contract documents and work order(Letter of award) shall be referred to as the "Contract".

ARTICLE 3.0 – CONDITIONS & CONVENANTS

The scope of Contract, Consideration, terms of payments, advance, security deposits, taxes wherever applicable, insurance, agreed time schedule, compensation for delay and all other terms and conditions contained in contract document and BSCDCL's Letter of award(Work order) are to be read in conjunction with other aforesaid contract documents. The contractor shall duly perform the contract strictly and faithfully in accordance with the terms of this contract. The scope of work shall also include all such items which are not specifically mentioned in the Contract Documents but which are reasonably implied for the satisfactory completion of the entire scope of work envisaged under this contract unless otherwise specifically excluded from the scope of work in the Letter of Intent. Contractor shall adhere to all requirements stipulated in the Contract documents. Time is the essence of the Contract and it shall be strictly adhered to. The progress of work shall conform to agreed works schedule/contract documents and Letter of Intent. This agreement constitutes full and complete understanding between the parties and terms of the presents. It shall supersede all prior correspondence to the extent of inconsistency or repugnancy to the terms and conditions contained in Agreement. Only a written instrument shall effect any modification of the Agreement signed by the authorized representative of both the parties. The total contract price for the entire scope of this contract is item rate quoted by M/s …….. Totaling to Rs. …….which shall be governed by the stipulations of the contract documents.

ARTICLE 4.0 – NO WAIVER OF RIGHTS

Neither the inspection by BSCDCL or the Engineer-in- Charge or Owner or any of their officials, employees or agents nor order by BSCDCL or the Engineer-in- Charge for payment of money or any payment for or acceptance of, the whole or any part of the work by BSCDCL or the Engineer-in- Charge nor any extension of time nor any possession taken by the Engineer-in- Charge shall operate as waiver of any provisions of the contract, or of any power herein reserved to BSCDCL, or any right to damage herein provided, nor shall any waiver of any breach in the contract be held to be a waiver or any other or subsequent breach.

ARTICLE 5.0 – GOVERNING LAW AND JURISDICTION

The Laws applicable to this contract shall be the laws in force in India and jurisdiction of BHOPAL Court (s) only. Notice of Default Notice of default given by either party to the other party under the Agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto, if delivered against acknowledgment due or by FAX or by registered mail duly addressed to the signatories at the address mentioned herein above. IN W ITNESS W HEREOF, the parties through their duly authorized representatives have executed these presents (execution whereof has been approved by the Competent Authorities of both the parties) on the day, month and year first above mentioned at BHOPAL.

For and Behalf of:- For and Behalf of:-

Bhopal Smart City Development
Corporation Limited (BSCDCL)
BSCDCL Zone -14, Bhopal Municipal
Corporation, BHEL, Govindpura
Bhopal 462023

M/s ……..

WITNESS: WITNESS:
1. 1.

SECTION-6

SCOPE OF WORK
&
SPECIAL CONDITION OF CONTRACT

SCOPE OF WORK

GENERAL: Contractor shall be responsible for making the facility fit for the intended purpose while performing all of its obligations covered under the Contract Document in its entirety. The work shall be done in accordance to the drawings approved by the statutory authorities. Currently tender conditions and Design Criteria, Brief Technical Specifications for certain items of work are available in CPWD/PWD Technical Specifications. Scope includes further detailing, developing required specifications, preparing Good for Construction (GFC), coordinated drawings .The scope shall also include preparation of as built drawings before handing over the work to the Employer, maintaining the Quality assurance & Quality control (QA&QC), corrective actions, reporting and arranging for regular inspections by all concerned. Procurement, supply, construction, installation, furnishing, equipping, testing and commissioning shall be carried out for the following works:

1 Masonry
2 Plastering
3 Plumbing & Firefighting
4 Flooring and finishing
5 Furniture
6 Fabrication works
7 Dry Partition/Glass partition
8 False ceiling
9 Paneling
10 Specialized flooring if any other than that specified in schedule of Finishes
13 Painting other than that specified in schedule of Finishes
14 Glass doors/interior doors specified in schedule of doors
15 Gates including automation

The scope of work covered in this tender shall be as per the Bill of Quantities, specifications, drawings, instructions, orders issued to the contractor from time to time during the pendency of work. The drawings for this work, which may be referred for tendering, provide general idea only about the work to be performed under the scope of this contract. These may not be the final drawings and may not indicate the full range of the work under the scope of this contract. The work will be executed according to the drawings to be released as "GOOD FOR CONSTRUCTION" from time to time by the Engineer-in- charge of BSCDCL and according to any additions/ modifications/ alterations/ deletions made from time to time, as required by any other drawings that would be issued to the contractor progressively during execution of work. It shall be the responsibility of the contractor to incorporate the changes that may be in this scope of work, envisaged at the time of tendering and as actually required to be executed.

The quantities of various items as entered in the "BILL OF QUANTITIES" are indicative only and may vary depending upon the actual requirement. The contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items specified in the bill of quantities. The variation of quantities will be governed as per clause given in tender document.

1. The successful bidder needs to submit performance guarantee 5% (Five per cent) of the quoted price and security deposit 5% (Five per cent), which will be released after completion of 5 years.
2. The Rate should be quoted including All taxes and GST nothing shall be paid extra except Quoted rates.(If any rise in tax or if new tax is imposed by central or State Govt, or any Govt authority after Tender the contractor is to bear the same)
3. All the Civil work Should be repaired with original material including coloring if any breakage or dismantling work is done during installation of the system, including cleaning of the site, for which no extra payment shall be made to the contractor.
4. The rates to be given for furnished complete work, all material, labor wastage, royalties, taxes , lease rent , scaffolding , transportation charges, breakage, making good any damage to wall, ceiling, fitting etc, to make the original finish including painting, transportation, replacement, of any defective material, theft, insurance, variation in market rates, removal of rubbish dismantled material, cleaning of site be included in the quoted rates.
5. The contractor is to arrange for storage of material & its Security arrangement During the installation & commissioning of work.
6. The contractor will be fully responsible for any accident, damages, losses, that occurs during the installation & commissioning of work. No compensation will be made by the BSCDCL.
7. The Rates should be quoted for at site Bhopal.
8. Bidder should visit the site as mentioned in the Tender Document for detailed survey before Bidding

SPECIAL CONDITIONS OF CONTRACT (SCC)

GENERAL-

6.1. The following special conditions shall be read in conjunction with General conditions of contract. If there are any provisions in these Special Conditions, which are at variance with the provisions of General Conditions of Contract, the provisions in the Special Conditions shall take precedence.

6.2. Where any portion of Special Conditions of Contract is repugnant to or at variance with any provision of the instructions to Bidder and General Conditions of Contract and / or the other documents forming part of the contract then unless a different intention appears the provision of the Special Conditions of Contract shall be deemed to override the provisions of the general conditions of contract and / or the other documents forming part of the contract only to the extent such repugnant/various in the special conditions of contract as are not possible of being reconciled with the provisions in the special conditions of contract as are not possible of being reconciled with the provision with instructions to Bidder or General Conditions of contract and / or the other documents from part of the contract.

6.3. Items mentioned in the BOQ may vary or any changes are needed then it should bring to the attention of BSCDCL.

6.4. Working drawings are given by BSCDCL in tender document; if any deviations found and correction required then it should be brought to BSCDCL for rectification.

6.6 The items which are missing or not defined in the given BOQ in this Tender Document, then the contractor has to submit the items for approval to BSCDCL.

6.7 The contractor has to submit sample of the items defined in BOQ the same to be approved by BSCDCL, before use.

6.8 Internal wiring work should be done as per UADD/MPPWD/CPWD/MPPWD Specifications.

6.9 The working drawings shall be weighted from authorized certified Laboratory or from any NIT.

6.10 Bidder has to be submitted all kind of testing reports related to material, commissioning and installation. Testing of materials shall be done from Licensed laboratory or from engineering institute like MANIT/RGPV, before any commencement of work, and the same test reports shall be submitted to BSCDCL.

6.11 The Contractor shall have to maintain proper site documents and share the same with the Engineer-in-charge of BSCDCL as per CPWD Quality Assurance Manual such as Master Register Record,Site Order Record,Drawings Record,Daily Progress Record,NON-Confroming item Record.,Quality Audit Record.,Hindrences Record. ,Safety Assurance Record,Labour Welfare Record. etc

SECTION-7

TECHNICAL SPECIFICATIONS
&
LIST OF APPROVED MAKES

FLOORING

Notes: Applicable IS Code

IS 1124 Method of test for determination of water absortion, apparent specific gravity and porosity of natural building stones

IS 1130 Specification for marble (blocks, slabs and tiles)

IS1200-(Part XI) Method of measurement of Building and Civil Engineering work (Part 11) paving, floor finishes, dado and skirting

IS 1237-Edition 2.3 Specification for cement concrete flooring tiles

IS 2114 Code of practice for laying in-situ terrazzo floor finish

IS 13630 (Part-1 to 15) Methods of Testing of ceramic tiles

IS 15622 Specification for pressed ceramic tile

11.19 MARBLE STONE FLOORING

11.19.1 Marble Stone

It shall be as specified in sub head 8.0.

11.19.2 Dressing of Slabs

Every stone shall be cut to the required size and shape, fine chisel dressed on all sides to the full depth so that a straight edge laid along the side of the stone shall be fully in contact with it. The top surface shall also be fine chisel dressed to remove all waviness. In case machine cut slabs are used, fine chiesel dressing of machine cut surface need not be done provided a straight edge laid any where along the machine cut surfaces is in contact with every point on it. The sides and top surface of slabs shall be machine rubbed or table rubbed with coarse sand before paving. All angles and edges of the marble slabs shall be true, square and free from chippings and the surface shall be true and plane. The thickness of the slabs shall be 18, 30 or 40 mm as specified in the description of the item. Tolerance of + 3% shall be allowed for the thickness. In respect of length and breadth of slabs a tolerance of + 2% shall be allowed.

11.19.3 Laying

11.19.3.1 Base concrete or the RCC slab on which the slabs are to be laid shall be cleaned, wetted and mopped. The bedding for the slabs shall be with cement mortar 1:4 (1 cement : 4 coarse sand) or as given in the description of the item.

11.19.3.2 The average thickness of the bedding mortar under the slab shall be 20 mm and the thickness at any place under the slab shall be not less than 12 mm.

11.19.3.3 The slabs shall be laid in the following manner:

Mortar of the specified mix shall be spread under the area of each slab, roughly to the average thickness specified in the item. The slab shall be washed clean before laying. It shall be laid on top, pressed, tapped with wooden mallet and brought to level with the adjoining slabs. It shall be lifted and laid aside. The top surface of the mortar shall then be corrected by adding fresh mortar at hollows. The mortar is allowed to harden a bit and cement slurry of honey like consistency shall be spread over the same at the rate of 4.4 kg of cement per sqm. The edges of the slab already paved shall be buttered with grey or white cement with or without admixture of pigment to match the shade of the marble slabs as given in the description of the item.

The slab to be paved shall then be lowered gently back in position and tapped with wooden mallet till it is properly bedded in level with and close to the adjoining slabs with as fine a joint as possible. Subsequent slabs shall be laid in the same manner. After each slab has been laid, surplus cement on the surface of the slabs shall be cleaned off. The flooring shall be cured for a minimum period of seven days. The surface of the flooring as laid shall be true to levels, and, slopes as instructed by the Engineer-in-Charge. Joint thickness shall not be more than 1 mm.

Due care shall be taken to match the grains of slabs which shall be selected judiciously having uniform pattern of Veins/streaks or as directed by the Engineer-in-Charge.

11.19.3.4 The slabs shall be matched as shown in drawings or as instructed by the Engineer-in-Charge.

11.19.3.5 Slabs which are fixed in the floor adjoining the wall shall enter not less than 12 mm under the plaster skirting or dado. The junction between wall plaster and floor shall be finished neatly and withoutwaviness.

11.19.3.6 Marble slabs flooring shall also be laid in combination with other stones and/or in simple regular pattern/design as described in item of work and/or drawing.

11.19.4 Polishing and Finishing

Slight unevenness at the meeting edges of slabs shall then be removed by fine chiselling and finished in the same manner as specified in 11.10.3 except that cement slurry with or without pigments shall not be applied on the surface before each polishing.

11.19.5 Measurements

Marble stone flooring with different kind of marble shall be measured separately and in square metre correct to two places of decimal. Length and breadth shall be measured correct to a cm before laying skirting, dado or wall plaster. No deduction shall be made nor extra paid for voids not exceeding 0.20 square metre. Deductions for ends of dissimilar materials or other articles embedded shall not be made for areas not exceeding 0.10 square metre. Nothing extra shall be paid for laying the floor at different levels in the same room. Steps and treads of stairs paved with marble stone slabs shall also be measured under the item of Marble Stone flooring. Extra shall, however, be paid for such areas wherethe width of treads does not exceed 30 cm. Nosing for treads shall be measured in running metre and paid for extra. The width of treads shall be measured from the outer edge of the nosing, as laid, before providing the riser.

11.19.6 Rate

The rate shall include the cost of all materials and labour involved in all the operations described above. However, extra shall be paid for making special type of pattern/design/flowers as per drawings. No deductions shall be made in rate even if flooring is done without any pattern/design.

11.20 MARBLE STONE IN RISERS OF STEPS AND SKIRTING

11.20.1 Marble Stone Slabs and Dressing of Slabs shall be as specified in 11.19.1 and 11.19.2 except that the thickness of slabs shall be 18 mm. A tolerance of + 3% mm shall be allowed, unless otherwise specified in the description of the item.

11.20.2 Preparation of Surface

It shall be as specified in 11.18.2 where necessary, the wall surface shall be cut uniformly to the requisite depth so that the skirting face shall have the projection from the finished face of wall as shown in drawings or as required by the Engineer-in-Charge. In no case the skirting should project by more than thickness of stone.

11.20.3 Laying

The risers of steps and skirting shall be in grey or white cement admixed with or without pigment to match the shade of the stone, as specified in the description of the item, with the line of the slab at such a distance from the wall that the average width of the gap shall be 12 mm and at no place the width shall be less than 10 mm, if necessary, the slabs shall be held in position by temporary M.S. hooks fixed into the wall at suitable intervals. The skirting or riser face shall be checked for plane and plumb and corrected. The joints shall thus be left to harden then the rear of the skirting or riser slab shall be packed with cement mortar 1:3 (1 cement : 3 coarse sand) or other mix as specified in the description of the item. The fixing hooks shall be removed after the mortar filling the gap has acquired sufficient strength.

11.0 : FLOORING

The joints shall be as fine as possible but not more than 1 mm. The top line of skirting and risers shall be truly horizontal and joints truly vertical, except where otherwise indicated. The risers and skirting slab shall be matched as shown in drawings or as instructed by the Engineerin-Charge.

11.20.4 Curing, Polishing and Finishing

It shall be as specified in 11.11.4 as far as applicable, except that cement slurry with or without

pigment shall not be applied on the surface and polishing shall be done only with hand. The face and top of skirting shall be polished.

11.20.5 Measurements

Length shall be measured along the finished face of riser or skirting, correct to a cm. Height shall be measured from the finished level of tread or floor, to the top (the underside of tread, in the case of steps) correct to 0.5 cm. The areas shall be calculated in square metre correct to two places of decimal. Dado and lining of pillars etc. shall be measured as 'Marble work in wall lining. If the thickness is upto 25 mm or as "Marble Work" in Jambs, walls, columns and other plain work' if the thickness is more.

11.20.6 Rate

The rate shall include the cost of all materials and labour involved in all the operations described above.

PRESSED CERAMIC TILE FLOORING

The tiles shall be of approved make and shall generally conform to IS 15622. They shall be flat, and true to shape and free from blisters crazing, chips, welts, crawling or other imperfections detracting from their appearance. The tiles shall be tested as per IS 13630.

Classification and Characteristics of pressed ceramic tiles shall be as per IS 13712.

The tiles shall be square or rectangular of nominal size. Table 1,3,5, and 7 of IS 15622 give the modular preferred sizes and table 2,4,6 and 8 give the most common non modular sizes. Thickness shall be specified by the manufacturer. It includes the profiles on the visible face and on the rear side. Allowable nominal joint width upto 2mm for unrectified floor tiles and upto 1mm for rectified floor tiles. The joint in case of spacer lug tile shall be as per spacer. The tiles shall conform to table 10 of IS 15622 with water absorption 3 to 6%.

The top surface of the tiles shall be glazed. Glaze shall be either glossy or matt as specified. The underside of the tiles shall not have glaze on more than 5% of the area in order that the tile may adhere properly to the base. The edges of the tiles shall be preferably free from glaze. However, any glaze if unavoidable, shall be permissible on only upto 50 % of the surface area of the edges.

Coloured Tiles

Only the glaze shall be coloured as specified. The sizes and specifications shall be the same as for the white glazed tiles.

Decorative Tiles

The type and size of the decorative tiles shall be as follows: - (i) Decorated white back ground tiles
The size of these tiles shall be as per IS 15622.

(ii) Decorated and having coloured back-ground

The sizes of the tiles shall be as per IS 15622.

Preparation of Surface and Laying

Base concrete or the RCC slab on which the tiles are to be laid shall be cleaned, wetted and mopped. The bedding for the tile shall be with cement mortar 1:4 (1 cement : 4 coarse sand) or as specified. The average thickness of the bedding shall be 20 mm or as specified while the thickness under any portion of the tiles shall not be less than 10 mm.

Mortar shall be spread, tamped and corrected to proper levels and allowed to harden sufficiently to offer a fairly rigid cushion for the tiles to be set and to enable the mason to place wooden plank across and squat on it. Over this mortar bedding neat grey cement slurry of honey like consistency shall be spread at the rate of 3.3 kg of cement per square meter over an area upto one square meter. Tiles shall be soaked in water washed clean and shall be fixed in this grout one after another, each tile gently being tapped with a wooden mallet till it is properly bedded and in level with the

adjoining tiles. The joints shall be kept as thin as possible and in straight lines or to suit the required pattern.

The surface of the flooring during laying shall be frequently checked with a straight edge about 2 m long, so as to obtain a true surface with the required slope. In bath, toilet W.C. kitchen and balcony/verandah flooring, suitable tile drop or as shown in drawing will be given in addition to required slope to avoid spread of water. Further tile drop will also be provided near floor trap.

Where full size tiles cannot be fixed these shall be cut (sawn) to the required size, and their edge rubbed smooth to ensure straight and true joints.

Tiles which are fixed in the floor adjoining the wall shall enter not less than 10 mm under the plaster, skirting or dado.

After tiles have been laid surplus cement slurry shall be cleaned off.

Pointing and Finishing

The joints shall be cleaned off the grey cement slurry with wire/coir brush or trowel to a depth of 2 mm to 3 mm and all dust and loose mortar removed. Joints shall then be flush pointed with white cement added with pigment if required to match the colour of tiles. Where spacer lug tiles are provided, the half the depth of Joint shall be filled with polysulphide or as specified on top with under filling with cement grout without the lugs remaining exposed. The floor shall then be kept wet for 7 days. After curing, the surface shall be washed and finished clean. The finished floor shall not sound hollow when tapped with a wooden mallet.

Measurements

Length and breadth shall be measured correct to a cm before laying skirting, dado or wall plaster and the area calculated in square meter correct to two places of decimal. Where coves are used at the junctions, the length and breadth shall be measured between the lower edges of the coves.

No deduction shall be made nor extra paid for voids not exceeding 0.20 square meter. Deductions for ends of dissimilar materials or other articles embedded shall not be made for areas not exceeding 0.10 square meter.

Areas, where glazed tiles or different types of decorative tiles are used will be measured separately.

Rates

The rate for flooring shall include the cost of all materials and labour involved in all the operations described above, For tiles of sizes upto 0.16 sqm, unless otherwise specified in the description of the item. Nothing extra shall be paid for the use of cut (sawn) tiles in the work.

Extra over and above the normal rate for white tiles shall be paid where coloured or any other type of decorative tiles have been used.

PRESSED CERAMIC TILE FLOORING (VITRIFIED TILE FLOORING)

11.16.1 Operations as described in 11.15.1 to 11.15.6 shall be followed except the tiles shall conform to

Table 12 of IS 15622 (Tiles with water absorption E $\leq$ 0.08 per cent Group BIa) and the joint thickness in flooring shall not be more than 1mm.

11.16.2 Rate

The rate for flooring shall include the cost of all materials and labour involved in all the operations described above. Nothing extra shall be paid for the use of cut (sawn) tiles in the work.

[FOR DETAILED TECHNICAL SPECIFICATIONS PLEASE PREFER CPWD MPPWD SPECS]

FINISHING

13.1 CEMENT PLASTER

The cement plaster shall be 12 mm, 15 mm or 20 mm thick as specified in the item.

13.1.1 Scaffolding

For all exposed brick work or tile work double scaffolding independent of the work having two sets of vertical supports shall be provided. The supports shall be sound and strong, tied together with horizontalpieces over which scaffolding planks shall be fixed. For all other work in buildings, single scaffolding shall be permitted. In such cases the inner end ofthe horizontal scaffolding pole shall rest in a hole provided only in the header course for the purpose.Only one header for each pole shall be left out. Such holes for scaffolding shall, however, not be allowedin pillars/columns less than one metre in width or immediately near the skew backs of arches. The holesleft in masonry works for scaffolding purposes shall be filled and made good before plastering.Note : In case of special type of brick work, scaffolding shall be got approved from Engineer-in-charge in advance.

13.1.2 Preparation of Surface

The joints shall be raked out properly. Dust and loose mortar shall be brushed out. Efflorescence if any shall be removed by brushing and scrapping. The surface shall then be thoroughly washed with water, cleaned and kept wet before plastering is commenced. In case of concrete surface if a chemical retarder has been applied to the form work, the surfaceshall be roughened by wire brushing and all the resulting dust and loose particles cleaned off and careshall be taken that none of the retarders is left on the surface.

13.1.3 Mortar

The mortar of the specified mix using the type of sand described in the item shall be used. It shall be

as specified in Subhead 3.0. For external work and under coat work, the fine aggregate shall conform to grading IV. For finishing coat work the fine aggregate conforming to grading zone V shall be used.

13.1.4 Application of Plaster

13.1.4.1 Ceiling plaster shall be completed before commencement of wall plaster.

13.1.4.2 Plastering shall be started from the top and worked down towards the floor. All putlog holes shall be properly filled in advance of the plastering as the scaffolding is being taken down. To ensure even thickness and a true surface, plaster about 15 × 15 cm shall be first applied, horizontally and vertically, at not more than 2 metres intervals over the entire surface to serve as gauges. The surfaces of these gauged areas shall be truly in the plane of the finished plaster surface. The mortar shall then be laid on the wall, between the gauges with trowel. The mortar shall be applied in a uniform surface slightly more than the specified thickness. This shall be brought to a true surface, by working a wooden straight edge reaching across the gauges, with small upward and side ways movements at a time. Finally the surface shall be finished off true with trowel or wooden float according as a smooth or a sandy granular texture is required. Excessive troweling or over working the float shall be avoided.

13.1.4.3 All corners, arises, angles and junctions shall be truly vertical or horizontal as the case may be and shall be carefully finished. Rounding or chamfering corners, arrises, provision of grooves at junctions etc. where required shall be done without any extra payment. Such rounding, chamfering or grooving shall be carried out with proper templates or battens to the sizes required.

13.1.4.4 When suspending work at the end of the day, the plaster shall be left, cut clean to line both horizontally and vertically. When recommencing the plastering, the edge of the old work shall be scrapped cleaned and wetted with cement slurry before plaster is applied to the adjacent areas, to enable the two to properly join together. Plastering work shall be closed at the end of the day on the body of wall and not nearer than 15 cm to any corners or arrises. It shall not be closed on the body of the features such as plasters, bands and cornices, nor at the corners of arrises. Horizontal joints in plaster work shall not also occur on parapet tops and copings as these invariably lead to leakages. The plastering and finishing shall be completed within half an hour of adding water to the dry mortar. No portion of the surface shall be left out initially to be patched up later on. The plastering and finishing shall be completed within half an hour of adding water to the dry mortar.

13.1.5 Thickness

Where the thickness required as per description of the item is 20 mm the average thickness of the plaster shall not be less than 20 mm whether the wall treated is of brick or stone. In the case of brick work, the minimum thickness over any portion of the surface shall be not less than 15 mm while in case of stone work the minimum thickness over the bushings shall be not less than 12 mm.

13.1.6 Curing

Curing shall be started as soon as the plaster has hardened sufficiently not to be damaged when watered. The plaster shall be kept wet for a period of at least 7 days. During this period, it shall be suitably protected from all damages at the contractor's expense by such means as the Engineer-in-Charge may approve. The dates on which the plastering is done shall be legibly marked on the various sections plastered so that curing for the specified period thereafter can be watched.

13.1.7 Finish

The plaster shall be finished to a true and plumb surface and to the proper degree of smoothness as required. The work shall be tested frequently as the work proceeds with a true straight edge not less than 2.5 m long and with plumb bobs. All horizontal lines and surfaces shall be tested with a level and all jambs and corners with a plumb bob as the work proceeds.

13.1.8 Precaution Any cracks which appear in the surface and all portions which sound hollow when tapped, or arefound to be soft or otherwise defective, shall be cut out in rectangular shape and redone as directed by the Engineer-in-Charge.

(i) When ceiling plaster is done, it shall be finished to chamfered edge at an angle at its junction with a suitable tool when plaster is being done. Similarly when the wall plaster is being done, it shall be kept separate from the ceiling plaster by a thin straight groove not deeper than 6 mm drawn with any suitable method with the wall while the plaster is green.

(ii) To prevent surface cracks appearing between junctions of column/beam and walls, 150 mm wide chicken wire mesh should be fixed with U nails 150 mm centre to centre before plastering the junction. The plastering of walls and beam/column in one vertical plane should be carried out in one go. For providing and fixing chicken wire mesh with U nails payment shall be made separately.

13.1.9 Measurements

13.1.9.1 Length and breadth shall be measured correct to a cm and its area shall be calculated in squaremetres correct to two places of decimal.

13.1.9.2 Thickness of the plaster shall be exclusive of the thickness of the key i.e. grooves, or open joints in brick work.

13.1.9.3 The measurement of wall plaster shall be taken between the walls or partitions (the dimensions before the plaster shall be taken) for the length and from the top of the floor or skirting to the ceiling for the height. Depth of coves or cornices if any shall be deducted.

13.1.9.4 The following shall be measured separately from wall plaster.

(a) Plaster bands 30 cm wide and under

(b) Cornice beadings and architraves or architraves moulded wholly in plaster.

(c) Circular work not exceeding 6 m in radius.

13.1.9.5 Plaster over masonry pilasters will be measured and paid for as plaster only.

13.1.9.6 A coefficient of 1.63 shall be adopted for the measurement of one side plastering on honeycomb work having 6 x 10 cm. opening.

13.1.9.7 Molded cornices and coves.

(a) Length shall be measured at the centre of the girth.

(b) Molded cornices and coves shall be given in square metres the area being arrived at by multiplying length by the girth.

(c) Flat or weathered top to cornices when exceeding 15 cm in width shall not be included in the girth but measured with the general plaster work.

(d) Cornices which are curved in their length shall be measured separately.

13.1.9.8 Exterior plastering at a height greater than 10 m from average ground level shall be measured separately in each storey height. Patch plastering (in repairs) shall be measured as plastering new work, where the patch exceed 2.5 sqm. extra payment being made for preparing old wall, such as dismantling old plaster, raking out the joints and cleaning the surface. Where the patch does not exceed 2.5 sqm in area it shall be measured under the appropriate item under sub head 'Repairs to Buildings.'

13.1.9.9 Deductions in measurements, for opening etc. will be regulated as follows: (a) No deduction will be made for openings or ends of joists, beams, posts, girders, steps etc. upto 0.5 sqm in area and no additions shall be made either, for the jambs, soffits and sills of such openings. The above procedure will apply to both faces of wall.

(b) Deduction for opening exceeding 0.5 sqm but not exceeding 3 sqm each shall be made for reveals, jambs, soffits sills, sills, etc. of these openings.

(i) When both faces of walls are plastered with same plaster, deductions shall be made for one face only. (ii) When two faces of walls are plastered with different types of plaster or if one face is plastered and other is pointed or one face is plastered and other is unplastered, deduction shall be made from the plaster or pointing on the side of the frame for the doors, windows etc. on which width of reveals is less than that on the other side but no deduction shall be made on the other side. Where width of reveals on both faces of wall are equal, deduction of 50% of area of opening on each face shall be made from area of plaster and/or pointing as the case may be. (iii) For opening having door frame equal to or projecting beyond thickness of wall, full deduction for opening shall be made from each plastered face of wall.

(c) For opening exceeding 3 sqm in area, deduction will be made in the measurements for the full opening of the wall treatment on both faces, while at the same time, jambs, sills and soffits will be measured for payment.

In measuring jambs, sills and soffits, deduction shall not be made for the area in contact with the frame of doors, windows etc.

13.1.10 Rate :The rate shall include the cost of all labour and materials involved in all the operations described above.

13.2 CEMENT PLASTER WITH A FLOATING COAT OF NEAT CEMENT

13.2.0 The cement plaster shall be 12, 15 or 20 mm thick, finished with a floating coat of neat cement, as described in the item.

13.2.1 Specifications for this item of work shall be same as described in 13.1 except for the additional floating coat which shall be carried out as below When the plaster has been brought to a true surface with the wooden straight edge (clause 13.1.4.2) it shall be uniformly treated over its entire area with a paste of neat cement and rubbed smooth, so that the whole surface is covered with neat cement coating. The quantity of cement applied for floating coat shall be 1 kg per sqm. Smooth finishing shall be completed with trowel immediately and in no case later than half an hour of adding water to the plaster mix. The rest of the specifications described in 13.1.4 shall apply.

13.3 18 MM CEMENT PLASTER (TWO COAT WORK)

13.3.1 The specification for scaffolding and preparation of surface shall be as described in 13.1

13.3.2 Mortar

The mix and type of fine aggregate specified in the description of the item shall be used for the respective coats. Generally the mix of the finishing coat shall not be richer than the under coat unless otherwise described in item. Generally coarse sand shall be used for the under coat and fine sand for the finishing coat, unless otherwise specified for external work and under coat work, the fine aggregate shall conform to grading zone IV. For finishing coat work the fine aggregate conforming to grading zone V shall be used.

13.3.3 Application

13.3.3.1 The plaster shall be applied in two coats i.e. 12 mm under coat and then 6 mm finishing coat and shall have an average total thickness of not less than 18 mm.

13.3.3.2 12 mm Under Coat : This shall be applied as specified in 13.1.4 except that when the plaster has been brought to a true surface a wooden straight edge and the surface shall be left rough and furrowed 2 mm deep with a scratching tool diagonally both ways, to form key for the finishing coat. The surface shall be kept wet till the finishing coat is applied.

13.3.3.3 6 mm Finishing Coat : The finishing coat shall be applied after the under coat has sufficiently set but not dried and in any case within 48 hours and finished in the manner specified in 13.1.4.

[FOR DETAILED TECHNICAL SPECIFICATIONS PLEASE PREFER CPWD MPPWD SPECS]

GRID CEILING

Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance ?85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main ‘T’. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle

of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre& 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.

13.22 EXTERIOR PAINTING ON WALL

13.22.1

Material The paint shall be (Texured exterior paint/Acrylic smooth exterior paint/premium acrylic smooth exterior paint) of approved brand and manufacture. This paint shall be brought to the site of work by the contractor in its original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fornight's work. The materials shall be kept in the joint custody of the contractor and the 557 SUB HEAD.FINISHING Engineer-in-Charge. The empty containers shall not be removed from the site of work till the relevant item of work has been completed and permission obtained from the Engineer-in-Charge.

13.22.2

Preparation of Surface For new work, the surface shall be thoroughly cleaned off all mortar dropping, dirt dust, algae, fungus or moth, grease and other foreign matter of brushing and washing, pitting in plaster shall make good, surface imperfections such as cracks, holes etc. should be repaired using white cement. The prepared surface shall have received the approval of the Engineer in charge after inspection before painting is commenced.Application Base coat of water proofing cement paint. All specifications in respect of base coat of water proofing cement paint shall be as described under. Before pouring into smaller containers for use, the paint shall be stirred thoroughly in its container, when applying also the paint shall be continuously stirred in the smaller containers so that its consistency is kept uniform. Dilution ratio of paint with potable water can be altered taking into consideration the nature of surface climate and as per recommended dilution given by manufacturer. In all cases, the manufacturer's instructions & directions of the Engineer-in-charge shall be followed meticulously. The lids of paint drums shall be kept tightly closed when not in use as by exposure to atmosphere the paint may thicken and also be kept safe from dust. Paint shall be applied with a brush on the cleaned and smooth surface. Horizontal strokes shall be given, First and vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be finished as uniformly as possible leaving no brush marks.The specifications in respect of scaffolding, protective measures, measurements and rate shall be as described under 13.14.

[FOR DETAILED TECHNICAL SPECIFICATIONS PLEASE PREFER CPWD MPPWD SPECS]

WOOD AND P.V.C. Work

Applicable IS Codes

IS 204 (Part I) : Specification for tower bolts (ferrous bolt)
IS 204 (Part 11) Specification for tower bolts (non ferrous metals)
IS 205 Specification for non ferrous metal butt hinges
IS 206 Specification for Tee and strap hinges
IS 207 Specification for Gate and shutter hook and eye
IS 281 Specification for mild steel door bolts for use with pad locks
IS 303 Specification for plywood for general purposes
IS 362 Specification for parliament hinges
IS 363 Specification for hasps and stapple
IS 364 Specification for fan light catch
IS 419 Putty for use on window frames
IS 451 Technical supply condition for wood screws
IS 452 Specification for door spring rat tail type
IS 453 Specification for double acting spring hinge
IS 707 Glossary of terms applicable to timber technology and utilization
lS723 Specification for steel counter sunk head wire nails.
IS 729 Specification for drawer lock, cup board lock and box locks
IS 848 Specification for synthetic resin adhesive for plywood (phenoic and amino plastic)
IS 851 Specification for synthetic resin adhesive for const. work (non structural in wood)
IS 1003 (Part I) Specification for timber panelled and glazed shutter Part I (door shutters)
IS 1003 (Part II) Specification for timber panelled and glazed shutter Part II (window and ventilator shutter)
IS 1141 Specification for code of practice for seasoning of timber
IS 1200 Part XIV Method of measurement of building and civil engg work glazing. IS 1200 Part XIl Wood work and joinery
IS 1328 Specification for veneered decorative plywood
IS 1341 Specification for steel butt hinges
IS 1378 Specification for oxidized copper finishes
IS 1566 Specification for hard drawn steel wire fabric
IS 1568 Specification for wire cloth for general purpose
IS 1658 Specification for hard drawn steel wire fabric
IS 1659 Specification for block boards
IS 1734 Determination of density and moisture content,
IS 1823 Specification for floor door stopper
IS 1868 Specification for anodic coating on aluminium and its alloy
IS 2046 -do- Decorative thermosetting synthetic resin bonded laminated sheet
IS 2095 Specification for gypsum plaster board
IS 2202 (Pt I) Specification for wooden flush door shutter, solid core type (plywood face panels)
IS 2202 (Part II) -do- (Particle boards and hard board face panels)
IS 2209 Specification for mortice lock (Vertical Type)
IS 2380 Method of test for wood particle board and board for lignocelluloses material

IS 2547 Specification for gypsum plaster
IS 2681 Specification for non-ferrous metal sliding door bolts use with pad locks
IS 3087 Specification for wood particle boards (Medium density) for general purpose. IS 3097 Specification for veneered particle board
IS 3818 Specification for continuous (Piano) hinges
IS 3847 Specification for mortice night latch
IS 4948 Specification for welded steel wire fabric for general use
IS 4992 Specification for rebated mortice lock
IS 5187 Specification for flush bolts
IS 5509 Specification for Fire Retardant Plywood
IS 5930 Specification for mortice latch
IS 6318 Specification for plastic wire window fastners
IS 6607 Specification for rebated mortice lock (Vertical type)
IS 6760 Specification for sloted counter sunk head wood screws. IS 7196 Specification for hold fast
IS 7534 Specification for sliding locking bolts for use with pad lock
IS 8756 Specification for mortice ball catch for use in wooden almirah
IS 9308 (Part II) Specification for mechanically extracted coir fibres. (Mattress coir fibres) IS 9308 (Part III) -do- Decorated coir fibre
IS 12049 Dimensions and tolerance relating to wood based panel materials
IS 12406 Specification for medium density fibre board
IS 12817 Specification for stainless steel Butt Hinges
IS 12823 Specification for wood products -Prelaminated particle Boards
IS 14616 Specifications for laminated veneer lumber
IS 14842 Specification for coir veneer board for general purposes
IS 14856 Specification for glass fibre reinforced plastic (FRP) panel type door
IS 14900 Specifications for transparent float glass

Definition

1 **Best:-**
Refers to the quality of materials and workmanship, shall mean that in the opinion of the concerned Engineer-in-Charge, there is no superior material or article or class of workmanship obtainable in the market

2 **Ballies: -**
Thin round poles usually without bark.

3 **Beam: -**

4 **Cross Band**
A general term indicating a transverse layer of veneer or veneers in composite wood products.

5 **Decorative Veneers**
Veneers having attractive appearance due to figure, colour, grain, lusture, etc.

6 **Hard Wood**

7 **Freeze Rail**
Horizontal member, mortised or otherwise secured to the stiles of a door, provided just below the freeze panel usually provided for decorative purposes in the uppermost portion of the door.

8 **Joint**:A prepared connection for joining adjacent pieces of wood. veneer, etc.

9 **Muntin**
Small horizontal or vertical dividing bars within basic framework of a window, or door subdividing and supporting the glass panes or panels of doors.

10 Particle Board

A board manufactured from particles of wood or other lignocellulose material, for example, flakes, granules, shavings, slivers, splinter agglomerated, formed and pressed together by use of an organic binder together with one or more of the agents, such as heat, pressure, moisture and a catalyst.

11 Particle

Distinct particle or fraction of wood, or other lignocellulose material produced mechanically for use as the aggregate for making a particle board. This may be in the form of flake, granule, shaving, splinter and sliver.

12 Plywood

A board formed of three or more layers of veneers cemented or glued together, usually with the grain of adjacent veneers running at right angles to each other.

13 Seasoning

A process involving the reduction of moisture content in timber under more or less controlled conditions towards or to an amount suitable for the purpose for which it is to be used.

14 Seasoned Timber

Timber whose moisture content has been reduced to the specified minimum, under more or less controlled processes of drying.

15 First Class Wood

Individual hard and sound knots shall not be more than 25 mm in diameter and the aggregate area of all the knots shall not exceed one per cent of the area of the piece.

16 Second Class Wood

Individual hard and sound knot shall not be more than 40 mm in diameter and aggregate of all the knots shall not exceed one and half per cent of the area of the piece. Wood shall be generally free from sapwood, but traces of sapwood may be allowed.

SHUTTERS :

1 For all hard wood shutters, timber shall conform to IS : 883.

2 For factory made panelled shutters approved hard wood as per IS : 4021 duly kiln seasoned as per IS : 1141 shall only be accepted.

3 Flush doors with solid block board core shall conform to IS:2201-1973.

6 Glass panes shall conform to IS : 1761.

7 Teak wood shall be used with the government permission.

Measurements

Wood work shall be measured for finished dimensions. No allowance shall be made for dimensions supplied beyond those specified. Length of each piece shall be measured over all nearest to a cm. so as to include projections for tenons, scarves or mitres. Width and thickness shall be measured to the nearest mm. Cubical contents can be worked out in units cubic meters upto 3 places of decimal in whole numbers.

Framework of Shutters : The overall length and width of the framework of the shutters shall be measured nearest to a cm in fixed position (overlaps not to be measured in case of double leaved shutters) and the area calculated in square meters correct to two places of decimal. No deduction shall be made to form panel openings or louvers. No extra payments shall be made for shape, joints and labour involved in all operations described above.

For panelling of each type or for glazed panel length and width of opening for panels inserts

MANDATORY TESTS FOR WOOD & P.V.C. WORK

Material	Test	Field/ Laboratory Test	Test Procedure	Minimum quantity of material/ work for carrying out the test	Frequency of testing
Timber	Moisture content	Field by moisture	As given in specification	1 cum	Every one cum or part thereof.
Flush door	End immersion Test knife test Adhesion Test	Laboratory	IS 2202	26 shutters	As per sampling and testing specified in clause 9.7.11
Mortice	Testing of spring	Laboratory	IS 2209	50 Nos	100 or part thereof.

Rates :
The rate includes the cost of material and labour involved.

(For Detail Refer UADD Wood & PVC work specification / CPWD specification)

SANITARY INSTALLATIONS

Sanitary Material work shall be as per Specification of IS Code Listed below

S.No.	*Subject*	*I.S. Code No.*
1	Specification for glazed fire clay sanitary appliances: Part 1 : General requirements.	IS 771 (Pt.1)
2	Specification for glazed fire day sanitary appliances : Part 2 : Specific requirements of kitchen and laboratory sink.	IS 771 (Pt.2)
3	Specific action for general requirements for enameled cast iron sanitary appliances.	IS 772
4	Flushing cisterns for water closets and urinals (Other than plastic cistern)- Specifications.	IS 774
5	Phenolic moulding materials - Specification	IS 1300
6	Water fittings - copper allow float valves (horizontal plunger type) - Specifications	IS 1703
7	Cast Iron/Ductile Iron Drainage Pipes and pipe fittings for Over ground non-pressure pipe line socket and spigot series.	IS 1729
8	Specification for pillar taps for water supply purposes.	IS 1795
9	Polystyrene moulding and extrusion materials - Specifications	IS 2267
10	Specification for Automatic Flushing Cisterns for Urinals (Other than plastic cisterns)	IS 2326
11	Plastic seats and covers for water closets Part 1 : Thermo set seats and covers - Specifications	IS 2548 (Part-1)
12	Plastic seats and covers for water closets Part 2: Thermoplastic seats and covers - Specifications	IS 2548 (Part-2)
13	Vitreous Sanitary appliances (Vitreous china) - Specifications	IS 2556
14	Part 1 : General requirements	IS 2556 (Part-1)
15	Part 2 : Specific requirements of wash-down water closets.	IS 2556 (Part-2)
16	Part 3: Specific squatting pans.	IS 2556 (Part-3)
17	Part 4: Specific requirements of wash basins.	IS 2556 (Part-4)
18	Part 5 : Specific requirements of laboratory sinks.	IS 2556 (Part-5)
19	Part 6: Specific requirements of Urinals & Partition Plates	IS 2556 (Part-6)

20	Part 7 : Specific requirements of accessories for sanitary appliances.	IS 2556 (Part-7)
21	Part 14: Specific requirements of integrated squatting pans.	IS 2556 (Part-14)
22	Part 15 : Specific requirements of universal water closets.	IS 2556 (Part-15)
23	Specifications for Copper alloy waste fittings for wash basins and sinks.	IS 2963
24	Specifications for low density polyethylene pipes for potable water supplies.	IS 3076
25	Urea formaldehyde moulding materials - Specifications	IS 3389
26	Specifications for centrifugally cast (spun) iron spigot and socket soil, waste and ventilating pipes fittings and accessories.	IS 3989
27	Specification for electroplated coating of nickel and chromium on copper and copper alloys.	IS 4827
28	Specifications for high density polyethylene pipes for potable water supplies.	IS 4984
29	Unplasticized P.V.C. pipes for potable water supply - Specifications.	IS 4985
30	Plastic flushing cisterns for water closets and urinals - Specifications	IS 7231
31	Stainless steel sinks for domestic purposes - Specifications.	IS 13983

- All joints shall be made with special care, particularly those between pipes of different material. All joints shall be perfectly air and water tight. No joint shall be embedded in wall at any cost.
- Flushing Cisterns:The flushing cisterns shall be automatic or manually operated high level or low level as specified, for water closets and urinals. A high level cistern is intended to operate with minimum height of 125 cm and a low level cistern with a maximum height of 30 cm between the top of the pan and the under side of the cistern. Cisterns shall be of following type (i) Vitreous China (IS 774) for Flushing type (ii) Automatic Flushing Cistern (IS 2326) and (iii) Plastic cisterns (IS 7231).
- All exposed G.I., C.I. or lead pipes and fittings shall be painted with approved quality of paint
- All sanitary and plumbing work shall be carried out through licensed plumbers

- Fixing of Urinal Lipped, Half Stall (Single or Range)
  Urinals shall be fixed in position by using wooden plugs and screws. It shall be at a height of 65 cm from the standing level to the top of the lip of the urinal, unless otherwise directed by the Engineer-in-Charge. The size of wooden plugs shall be 50 mm x 50 mm at base tapering to 38 mm x 38 mm at top and of length 5.0 cms. These shall be fixed in the wall in cement mortar 1:3 (1 cement : 3 fine sand). After the plug fixed in the wall, the mortar shall be cured till it is set.
- Fixing of Stall Urinal (Single or Range)
  The floor slab shall be suitably sunk to receive the stall urinal. Where the floor slab is not sunk, the stall urinal shall be provided over a platform. The lip of the stall urinal shall be flush with the finished floor level adjacent to it. The stall urinal shall be laid over a fine sand cushion of average 25 mm thickness. A space of not less than 3 mm shall be provided all- round, in front, side and filled with water proofing plastic compound. Care shall be taken that after the sub-grade for the floor is cast, one week should lapse before urinals are installed. The trap and fittings shall be fixed as directed by the Engineer-in-Charge. Payment for the floor and its sub-grade shall be made separately.
- Fixing of Wash basin

The installation shall consist of an assembly of wash basin, pillar taps, C.I. brackets, C.P. brass of P.V.C. union, as specified. The wash basin shall be provided with one or two15mm C.P. brass pillar taps, as specified. The height of top of the rim of wash basin from the floor level shall be within 750mm to 800 mm.

- The basin shall be supported on a pair C.I. cantilever brackets conforming to IS 775 and shall be embedded in cement concrete (1:2:4) block 100 x 75 x 150 mm. Use of M.S. angle or Tee section as bracket is not permitted. Brackets shall be fixed in position before dado work is done. The wall plaster on the rear shall be cut to rest over the top edge of the basin so as not to leave any gap for water to seep through between wall plaster & skirting of basin. After fixing the basin, plaster shall be made good and surface finished matching with the existing one. S.C.I. floor traps conforming to IS 1729 having 50 mm water seal (minimum 35 mm in two pipe systems with gully trap) should be used. Waste pipes laid horizontally should have gradient not flatter than 1 in 50 and not steeper than 1 in 10.
- Inatallation of Squatting Pan & Water Closet shall be done as per Specifications.

- Measurement

  (i) The pipes shall be measured net when fixed in position excluding all fittings along its length, correct to a cm. When collars are used for jointing SCI pipes these shall be measured as fittings and shall be paid for separately. No allowance shall be made for the portions of the pipe lengths entering the sockets of the adjacent pipes or fittings. The above shall apply to both cases i.e. whether the pipes are fixed on wall face or embedded in masonry. No deduction shall be made in the former case from the masonry measurement for the volume of concrete blocks embedded therein. Similarly no deduction shall be made for the volume occupied by the pipes from the masonry when the former are embedded in the later.

  (ii) Sinks, urinals, squatting pan, basins, water closets, foot rest (pair) etc. shall be measured in nos
- **Rates :-**

  Rate include the cost of all the materials and labour involved for the completion of items.

(For Detail Refer MPPWD specification / CPWD specification)

AUTOMATIC SLIDING DOOR OPERATOR.

Compliant with European standards and produced according to the guidelines for power-operated windows, doors and gates, BGR 232, the UVV and the VDE regulations. TÜV design tested, tested according to the low voltage guidelines, fulfils DIN 18650 standards. The track profile should be separate from the main profile for enabling reduction in vibration insulation. Operator length = 4150 mm, clear passage opening upto 2000 mm, clear passage height upto 2500 mm, includes micro processor controlled drive unit, with self learning mechanism, program selector with knob, motion detector (eagle 6 radars, 02 nos), mechanical components, toothed belt, cover profile, floor guide for frameless glass (02 nos), glass clamping rail (02 nos), safety device-light barrier (01 pair). Body finish : standard silver anodised operator profile, electromechanical lock with 12 mm plain toughened frameless glass for complete elevation - 2 moving panels. UPS of 750 VA shall be provided by others, which will give power backup of 20 min. Only & if the duration of power cut to the operator is more than 30 min., then separate arrangement needs to be done for the same as automatic operator requires uninterrupted stabilized power supply. The above work complete in all respect as per approved drawings and to the satisfaction of engineer-in-charge / architect consultant

ELECTRIC POWER DISTRIBUTION AND WIRING

3.1 Introduction

The electric power will be received and distributed in a building, through following means:-

(i) Cabling and switchgear to receive power.

The building is divided into convenient number of parts, each part served by a rising main system to distribute power vertically/horizontally.

(ii) Power fl ows from rising main through tap-off box to fl oor main board to fi nal DBs and then to wiring.

(iii) Dedicated circuit for different loads such as lighting, HVAC, power plug loads shall be provided, wherever possible.

(iv) Rising main, which takes care of general lighting and power outlet load of the building, should have independent cables for lighting as well as power, wherever possible. Other loads like lifts, water pump sets, other motor loads are fed by independent cables of suitable capacity fed from properly designed essential/ nonessential LT power panels with suitably designed switchgear having necessary control and safely features.

(v) Therefore the distribution/wiring system essentially consists of provision of cables, switchgear, rising main, bus-ducting, earthing, laying of pipes/ conduits etc. (in surface or recess) based on proper detailed designing to decide on various sizes/ capacities of these components and various controls and safeties involved, to provide an effi cient, reliable, safe and adequate electrical distribution and wiring system.

(vi) A typical schematic diagram of power distribution of a building is enclosed. (See Fig. 3)

3.2 System of Distribution and Wiring

(i) The wiring shall be done from a distribution system through main and/or branchdistribution boards. The system design and location of boards will be properlyworked out.

(ii) Each main distribution board and branch distribution board shall be controlled byan incoming circuit breaker/linked switch with fuse. Each outgoing circuit shall becontrolled by a circuit breaker/switch with fuse.

(iii) For non-residential and residential buildings as far as possible DBs shall beseparate for light and power.

(iv) Only MCCB/MCB/HRC fuse type DBs shall be used. Rewirable type fuses shallnot be used.

(v) Three phase DBs shall not be used for fi nal circuit distribution as far as possible.
(vi) 'Power' wiring shall be kept separate and distinct from light wiring, from the level of circuits, i.e., beyond the branch distribution boards. Conduits for light/power wiringshall be separate.
(vii) Essential/non-essential/UPS distribution each will have a completely independentand separate distribution system starting from the main, switchboard upto fi nalwiring for each system. As for example, conduit carrying non-essential wiring shallnot have essential or UPS wiring. Wiring for essential and UPS supply will havetheir own conduit system. No mixing of wiring is allowed.
(viii) Generally, no switchboard will have more than one source of incoming supply.More than one incoming supply will be allowed only at main board with propersafety and interlocking so that only one source can be switched on at a time.
(ix) Each MDB/DB/Switch Board will have reasonable spare outgoing ways for futureexpansion.
(x) Balancing of 3-phase circuit shall be done.

3.3 Wiring

3.3.1 ***Submain & Circuit Wiring***
(a) *Submain Wiring*
Submain wiring shall mean the wiring from one main/distribution switchboard to another.
(b) *Circuit Wiring*
Circuit wiring shall mean the wiring from the distribution board to the 1st tapping point inside the switch box, from where point wiring starts.
3.3.2 ***Measurement of Submain and Circuit Wiring***
(i) Circuit and submain wiring shall be measured on linear basis along the run of thewiring. The measurement shall include all lengths from end to end of conduit orchannel as the case may be, exclusive of interconnections inside the switchboardetc. The increase on account of diversion or slackness shall not be included in the measurement.
(ii) The length of circuit wiring with two wires shall be measured from the distributionboard to the nearest switch box from which the point wiring starts. Looping ofswitch boxes also will be counted towards circuit wiring, measured along the lengthof conduit/channel.

(iii) When wires of different circuits are grouped in a single conduit/ channel, the sameshall be measured on linear basis depending on the actual number and sizes ofwires run.(iv) Protective (loop earthing) conductors, which are run along the circuit wiring andthe submain wiring, shall be measured on linear basis and paid for separately.
Note: Conduit carrying submain will not carry circuit/point wiring. Similarly conduitcarrying circuit wiring will not carry submain/point wiring. Conduit carrying pointwiring will not carry submain/circuit wiring.
3.3.3 ***Measurement of Other Wiring Work***
Except as specifi ed above for point wiring, circuit wiring and submain wiring, othertypes of wiring shall be measured separately on linear basis along the run of wiringdepending on the actual number and sizes of wires run.
3.4 Point Wiring
3.4.1 ***Defi nition***
A point (other than socket outlet point) shall include all work necessary in completewiring to the following outlets from the controlling switch or MCB.(a) Ceiling rose or connector (in the case of points for ceiling/exhaust fan points,prewired light fi ttings, and call bells)
(b) Ceiling rose (in case of pendants except stiff pendants).(c) Back plate (in the case of stiff pendants).(d) Lamp holder (in the case of goose neck type wall brackets, batten holders and
fi ttings which are not prewired).

3.4.2 ***Scope***

Following shall be deemed to be included in point wiring:

(a) Conduit/channel as the case may be, accessories for the same and wiring cablesbetween the switch box and the point outlet, loop protective earthing of each fan/light fixture.

(b) All fixing accessories such as clips, screws, Phil plug, rawl plug etc. as required.

(c) Metal or PVC switch boxes for control switches, regulators, sockets etc, recessedor surface type, and phenolic laminated sheet covers over the same.

(d) Outlet boxes, junction boxes, pull-through boxes etc. but excluding metal boxes ifany, provided with switchboards for loose wires/conduit terminations.

(e) Control switch or MCB, as specified.

(f) 3 pin or 6 pin socket, ceiling rose or connector as required. (2 pin and 5 pin socket outlet shall not be permitted.)

(g) Connections to ceiling rose, connector, socket outlet, lamp holder, switch etc.

(h) Bushed conduit or porcelain tubing where wiring cables pass through wall etc.

(**Note*:*** In areas where false ceiling are provided, termination of wires should beat the fi ttings. Flexible conduits from ceiling junction box to the fittings shall be provided duly coupled at both ends. This shall be included within the scope of point wiring.)

(i) Interconnecting wiring between switches within the switch box on the same circuit.

3.4.3 ***Measurement***

(a) *Point Wiring (other than socket outlet points)*

(i) Unless and otherwise specifi ed, there shall be no linear measurement forpoint wiring for light points, fan points, exhaust fan points and call bell points.These shall be measured on unit basis by counting, and classifi ed as laiddown in 3.4.4.

3.4.4 ***Classification***

Points measured under 3.4.3 on unit basis shall be classifi ed as under according to thetype of building:

(a) *Residential Buildings*

(i) Group 'A', for point wiring for type I, type II and type III residential quarters and hostels.

(ii) Group 'B', for point wiring for type IV and above type of residential quarters and barracks.

(b) *Non-residential Buildings*

Group 'C' for all types of non-residential buildings such as offi ces, hospitals, laboratories, educational institutions, libraries etc.

(c) *For any Other Type of Building*The group under which the points are to be classifi ed shall be decided by theconcerned Chief Engineer (Elect.).

3.4.5 ***Point Wiring for Socket Outlet Points***

(i) The light plug (6 A) point and power (16 A) point wiring shall be measured on linearbasis, from the respective tapping point of live cable, namely, switch box, anothersocket outlet point, or the sub-distribution board as the case may be, up to thesocket outlet.

(ii) The metal/PVC box with cover, switch/MCB, socket outlet and other accessories shall be measured and paid as a separate item.

Note: There shall normally be no "on the board" light plug point.

(iii) The power point outlet may be 16 A/6 A six pin socket outlet, where so specifi ed in the tender documents.

3.4.6 ***Group Control Point Wiring***

(i) In the case of points with more than one point controlled by the same switch, suchpoints shall be measured in parts i.e. (a) from the switch to the fi rst point outlet asone point and classifi ed according to 3.4.4, and (b) for the subsequent points, thedistance from that outlet to the next one and so on, shall be treated as separatepoint(s) and classifi ed according to 3.4.4. (ii) No recovery shall be made for non-provision of more than one switch in such cases.

3.4.7 ***Twin Control Light Point Wiring***

(i) A light point controlled by two numbers of two way switches shall be measured as two points from the fitting to the switches on either side and classifi ed according to 3.4.4.

(ii) No recovery shall be made for non-provision of more than one ceiling rose or connector in such cases.

3.4.8 ***Multiple Controlled Call Bell Point Wiring***

(i) In the case of call bell points with a single call bell outlet, controlled from more than one place, the points shall be measured in parts i.e. (a) from the call bell outlet to one of the nearest ceiling roses meant for connection to bell push, treated as one point and classifi ed according to 3.4.4, and (b) from that ceiling rose to the next one and so on, shall be treated as separate
point(s) and classifi ed according to 3.4.4. (ii) No recovery shall be made for non-provision of more than one ceiling rose or connector for connection to call bell in such cases.

3.5 Wiring System

(i) Wiring shall be done only by the looping system. Phase/live conductors shall be looped at the switch box. For point wiring, neutral wire/earth wire looping for the 1st point shall be done in the switch box; and neutral/earth looping of subsequent points will be made from point outlets. (ii) In wiring, no joints in wiring will be permitted any where, except in switch box orpoint outlets, where jointing of wires will be allowed with use of suitable connector.(iii) The wiring throughout the installation shall be such that there is no break in theneutral wire except in the form of linked switchgear.(iv) Light, fans and call bells shall be wired in the 'lighting' circuits. 15A/16A socketoutlets and other power outlets shall be wired in the 'power' circuits. 5A/6A socketoutlets shall also be wired in the 'power' circuit both in residential as well as nonresidential buildings.

(v) *Colour Coding*

Following colour coding shall be followed in wiring:
Phase : Red/Yellow/Blue.(Three phase wiring)
Live : Red (Single phase wiring)
Neutral : Black
Earth : Yellow/Green.

(vi) *Termination of Circuit into Switchboard*

Circuit will consist of phase/neutral/earth wire. Circuit will terminate in a switch board (fi rst tapping point, where from point wiring starts) in following manner:
Phase wire terminated in phase connector.
Neutral wire terminated in neutral connector.
Earth wire terminated in earth connector. The switchboard will have phase, neutral and earth terminal connector blocks to receive phase/ neutral/ earth wire.
See Fig 4.

Run of Wiring

(i) The type of wiring shall be as specifi ed in the tender documents namely, surface conduit/recessed conduit, steel/PVC, channel.
(ii) Surface wiring shall run as far as possible along the walls and ceiling, so as to be easily accessible for inspection.
(iii) Above false ceiling, in no case, open wiring shall be allowed. Wiring will be done in recessed conduit or surface steel conduit.
(iv) In recessed conduit system, routes of conduit will be planned, so that various inspection boxes provided don't present a shabby look. Such boxes can be provided 5 mm above plaster level, and they can be covered with plaster of paris with marking of junction boxes.
(v) Where number of electrical services like electrical wiring, telephone wiring, computer cabling, pass through corridors, it may be proper to plan such service with properly designed aluminium/PVC channels duly covered by a false ceiling, so that subsequently such service can be maintained and additional cables can be provided.
(vi) Generally conduits for wiring will not be taken in fl oor slabs. When it is unavoidable special precaution to be taken to provide fl oor channels with provision for safety and maintenance. Alternatively false fl ooring can be provided.

3.7 Passing through Walls or Floors

(i) When wiring cables are to pass through a wall, these shall be taken through a protection (steel/ PVC) pipe or porcelain tube of suitable size such that they pass through in a straight line without twist or cross in them on either porcelain, PVC or other approved material.

(ii) All fl oor openings for carrying any wiring shall be suitably sealed after installation.

3.8 Joints in Wiring

(i) No bare conductor in phase and/or neutral or twisted joints in phase, neutral, and/or protective conductors in wiring shall be permitted.

(ii) There shall be no joints in the through-runs of cables. If the length of fi nal circuit or submain is more than the length of a standard coil, thus necessitating a throughjoint, such joints shall be made by means of approved mechanical connectors in suitable junction boxes.

(iii) Termination of multistranded conductors shall be done using suitable crimping type thimbles.

3.9 Ratings of Outlets

(to be adopted for design).

(i) Incandescent lamps in residential and non-residential buildings shall be rated at 60W and 100W respectively.

(ii) Ceiling fans shall be rated at 60W. Exhaust fans, fl uorescent tubes, compact fluorescent tubes, HPMV lamps, HPSV lamps etc. shall be rated according to their capacity. Control gear loses shall be also considered as applicable.

(iii) 6A and 16A socket outlet points shall be rated at 100W and 1000W respectively, unless the actual values of loads are specifi ed.

3.10 Capacity of Circuits

(i) Lighting circuit shall feed light/fan/ call bell points. Each circuit shall not have more than 800 Watt connected load or more than 10 points whichever is less. However, in case of CFL points where load per point may be less, number of points may be suitably increased.

(ii) Power circuit in non-residential building will have only one outlet per circuit.

(iii) Each power circuit in residential building can feed following outlets:

(a) Not more than 2 Nos. 16A outlets.

(b) Not more than 3 Nos. 6A outlets.

(c) Not more than 1 No.16A and 2 Nos. 6A outlets.

(iv) Load more than 1 KW shall be controlled by suitably rated MCB and cable size shall be decided as per calculations.

(v) *Power Wiring with Bus Trunking*

It is permitted to meet large-scale power requirement in a hall, or fl oor, with use of single phase or 3 phase bus bars running inside a metal enclosure. This will be provided with careful design and use of factory fabricated bus-trunking of reputed make, conforming to relevant BIS standards and with standard accessories like End feed unit, tap off with necessary safety features like over current, short-circuit and earth fault protection. Such trunking will be of specified breaking KA rating.

3.11 Socket Outlets

(i) Socket outlets modular type shall be 6A 3 pin, 16 Amp 3 pin or 16/6 Amp 6 pin. 5pin socket outlets will not be permitted. The third pin shall be connected to earth through protective (loop earthing) conductor. 2 pin or 5 pin sockets shall not be permitted to be used.

(ii) Conductors connecting electrical appliances with socket outlets shall be of flexible type with an earthing conductor for connection to the earth terminal of plug and the metallic body of the electrical appliance.

(iii) Sockets for the power outlets of rating above 1KW shall be of industrial type with associated plug top and controlling MCB.

(iv) Where specifi ed, shutter type (interlocking type) of sockets shall be used.

(v) Every socket outlet shall be controlled by a switch or MCB, as specified. The control switch/MCB shall be connected on the ‘live’ side of the line.

(vi) 5A/6A and 15A/16A socket outlets shall be installed at the following positions,unless otherwise specifi ed.
(a) *Non-residential buildings* – 23 cm above fl oor level.
(b) *Kitchen* – 23 cm above working platform and away from the likely positions of stove and sink.
(c) *Bathroom* – No socket outlet is permitted for connecting a portable appliancethereto. MCB/IC switch may be provided above 2 m for fi xed appliances, andat least 1 m away from shower.
(d) *Rooms in residences* – 23 cm above fl oor level, or any other level in special cases as desired by the Engineer-in-charge.
(vii) Unless and otherwise specifi ed, the control switches for the 6A and 16A socket outlets shall be kept along with the socket outlets.

3.12 Cables

(i) Copper conductor cable only will be used for submain/ circuit/ point wiring.
(ii) Minimum size of wiring:
Light Wiring : 1.5 sq.mm.
Power Wiring : 4.0 sq.mm.
Power circuit rated : More than 1 KW, Size as per calculation.
(iii) Insulation : Copper conductor cable shall be PVC insulated conforming
to BIS Specification.
(iv) Multi stranded : Cables are permitted to be used.

3.13 Flexible Cable

(i) Conductor of fl exible cables shall be of copper. The cross sectional area of conductor for fl exible cable shall be as per design.
(ii) Only 3 core fl exible cables shall be used for connecting single-phase appliances.
(iii) Unless the fl exible cables are mechanically protected by armour, or tough rubber, or PVC sheath, these shall not be used in workshops and other places where they are liable to mechanical damage.
(iv) Flexible cable connection to bell push from ceiling rose shall be taken through steel conduit/metallic casing and capping.

3.14 Wiring Accessories

(a) ***Control Switches for Point***

(i) Control switches (single pole switch) carrying not more than 16A shall be modular type. The switch shall be 'On' when the knob is down. (ii) (a) In type I, II & III quarters, Barracks & school buildings (except principal's & staff rooms) etc. Piano type switches shall be provided (unless specifi cally asked for by the user department / Architect.) (b) Modular type switches to be provided for remaining types of buildings i.e. in all types of remaining non-residential buildings & residential buildings of type IV & above & Transit hostel or as may be decided by the Architect/ user department. (**Note**: Provision is meant for new constructions and in existing buildings during rewiring if the building work renovation is also in progress in the area. Otherwise existing type of piano switches will be continued.)
(iii) It is recommended to provide double pole MCB in proper enclosure as poweroutlet for window type AC units, geysers etc.

(b) ***Switch Box***

(i) Switch box shall be hot dip galvanized, factory fabricated, suitable in sizefor surface/ recess mounting and suitable in size for accommodating therequired number of switches and accessories (where required to be used forapplications other then modular switches/ sockets).
(ii) Switch box also can be of non-metallic material. The technical sanctioningauthority will approve specifi ed makes of reputed quality and specifi cations.(c) ***Switch Box Covers (for application other than modular type)*** Phenolic laminated sheets of approved shade shall be used for switch box covers.These shall be of 3 mm thick synthetic phenolic resin bonded laminated sheet asbase material and conforming to grade P- I of IS 2036 : 1974.

Note: Specifi cation for switch boxes is covered in the chapters on the varioustypes of wiring.

(d) ***Ceiling Rose***
(i) A ceiling rose shall not be used on a circuit, the voltage of which normallyexceeds 250V.
(ii) Only one fl exible cord shall be connected to a ceiling rose. Specially designedceiling roses shall be used for multiple pendants.
(iii) A ceiling rose shall not embody fuse terminal as an integral part of it.(e) ***Lamp Holders***
(i) Lamp holders may be batten, angle, pendant or bracket holder type as required. The holder shall be made of brass and shall be rigid enough tomaintain shape on application of a nominal external pressure. There shouldbe suffi cient threading for fi xing the base to the lamp holder part so that theydo not open out during attention to the lamp or shade.(ii) Lamp holders for use on brackets and the like shall have not less than 1.3 cmnipple, and all those for use with fl exible pendant shall be provided with cordgrips.
(iii) All lamp holders shall be provided with shade carriers.
(iv) Where center contact Edison Screw lamp holders are used, the outer orscrew contact shall be connected to the 'middle wire', or the neutral conductorof the circuit.

EARTHING

SCOPE
This chapter covers the essential requirements of earthing system components andtheir installation. This shall be read with Appendix F, which lays down criteria for theirdesign. For details not covered in these specifi cations IS code of Practice on Earthing(IS 3043 : 1987) shall be referred to.

8.1 Application

(i) The electrical distribution system in the Department is with earthed neutral (i.e.neutral earthed at the transformer / generator end). In addition to the neutralearthing, provision is made for earthing the metallic body of equipments and noncurrentcarrying metallic components in the sub-station, as well as in the internal/external electrical installations.
(ii) Earthing system is also required for lightning protection, computer installations andhospital operation theaters, etc. for functional reasons.
(iii) Earthing requirements are laid down in Indian Electricity Rules, 1956, as amendedfrom time to time, and in the Regulations of the Electricity Supply Authorityconcerned. These shall be complied with.
(iv) ***Application for Internal E.I.***
(a) Every sub-main will have earth continuity conductor to run along withsub-main wiring. In case of 3-phase sub-main wiring two earth continuityconductors shall be provided.
(b) Every circuit will have its earth continuity conductor to run alongwith circuitwiring. In case of 3-phase circuit two earth continuity conductors shall beprovided.
(c) Looping of earth is allowed only in case of point wiring.(d) When 2/3 power outlets are looped to one circuit, earth looping of theseoutlets is permissible.

8.2 Types of Electrodes & Material

8.2.1 ***Earth Electrodes***
8.2.1.1 *Types*
The type of earth electrode shall be any of the following, as specifi ed. (For selectioncriteria in designs, Appendix F may be referred to).
(a) Pipe earth electrode.
(b) Plate earth electrode.
(c) Strip or conductor earth electrode.
8.2.1.2 *Electrode Materials and Dimensions*
(i) The materials and minimum sizes of earth electrodes shall be as per Table IX(revised).
(ii) GI pipe electrodes shall be cut tapered at the bottom, and provided with holes of12 mm dia, drilled not less than 7.5 cm from each other upto 2 m of length from thebottom.

(iii) The length of the buried strip or conductor earth electrode shall be not less than15 m. This length shall suitably be increased if necessary, on the basis of theinformation available about soil resistance, so that the required earth resistanceis obtained. Prior approval of the Engineer-in-charge shall be taken for any suchincrease in length.
(iv) All hardware items used for connecting the earthing conductor with the electrodeshall be of GI in the case of GI pipe and GI plate earth electrodes, and forgedtinned brass in case of copper plate electrodes.

8.2.2. ***Earthing Conductor & Sizes***

(i) The earthing conductor (protective conductor from earth electrode up to the mainearthing terminal/earth bus, as the case may be) shall be of the same material asthe electrode, viz. GI or copper, and in the form of wire or strip as specifi ed.(ii) The size of earthing conductor shall be specifi ed, but this shall not be less than thefollowing (For calculating the size of the earthing conductor in design, Appendix Fpara 3.5.1).
(a) 4 mm dia. (8 SWG) copper wire,
(b) 25 mm x 4 mm in the case of GI strip, or
(c) 20 mm x 3 mm in the case of copper strip.
(iii) Earthing conductor larger than the following sectional areas need not be used,unless otherwise specified.
(a) 150 sq.mm. in case of GI, or
(b) 100 sq.mm. in case of copper.

8.2.3 ***Earth Continuity / Loop Earthing Conductor & Sizes***

(i) The material and size of protective conductors shall be as specifi ed below (for
criteria in design of these Appendix F may be referred to):*Size of phase Size of protective conductor of the sameconductor material as phase conductor*Upto 4 sq.mm. Same size as that of phase conductor
Above 4 sq.mm. up to 16 sq.mm. Same size as that of phase conductorAbove 16 sq.mm. up to 35 sq.mm. 16 sq.mm.Above 35 sq.mm. Half of the phase conductor

8.3 Location for Earth Electrodes

(i) Normally an earth electrode shall not be located closer than 1.5 m from anybuilding. Care shall be taken to see that the excavation for earth electrode doesnot affect the foundation of the building; in such cases, electrodes may be locatedfurther away from the building, with the prior approval of the Engineer-in-charge.
(ii) The location of the earth electrode will be such that the soil has a reasonablechance of remaining moist as far as possible. Entrances, pavements and roadways,should be avoided for locating earth electrodes.

8.4 Installation

8.4.1 ***Electrodes***

8.4.1.1 *Various Types of Electrodes*

(i) (a) Pipe electrode shall be buried in the ground vertically with its top at not lessthan 20 cm below the ground level. The installation shall be carried out asshown in Fig. 11 (revised).
(b) In locations where the full length of pipe electrode is not possible to beinstalled due to meeting a water table, hard soil or rock, the electrode may beof reduced length, provided the required earth resistance result is achievedwith or without additional electrodes, or any alternative method of earthing
may be adopted, with the prior approval of the Engineer-in-charge. Pipeelectrodes may also be installed in horizontal formation in such exceptionalcases.
(ii) Plate electrode shall be buried in ground with its faces vertical, and its top not lessthan 3.0 m below the ground level. The installation shall be carried out as shownin Fig. 12 (revised).
(iii) When more than one electrode (plate/pipe) is to be installed, a separation of notless than 2 m shall be maintained between two adjacent electrodes.(iv) (a) The strip or conductor electrode shall be buried in trench not less than 0.5 mdeep.

(b) If conditions necessitate the use of more than one strip or conductor electrode,they shall be laid as widely distributed as possible, in a single straight trenchwhere feasible, or preferably in a number of trenches radiating from onepoint.

(c) If the electrode cannot be laid in a straight length, it may be laid in a zigzagmanner with a deviation upto 45 degrees from the axis of the strip. It can alsobe laid in the form of an arc with curvature more than 1 m or a polygon.

8.4.1.2 ***Artificial Treatment of Soil***

When artificial treatment of soil is to be resorted to, the same shall be specified inthe schedule of work. The electrode shall be surrounded by charcoal / coke and saltas indicated in Fig. 11 and 12. In such cases, excavation for earth electrode shall beincreased as per the dimensions indicated in these figures.

8.4.1.3 *Watering Arrangement*

(i) In the case of plate earth electrodes, a watering pipe 20 mm dia. Medium classpipe shall be provided and attached to the electrodes as shown in Fig. 11 and 12.A funnel with mesh shall be provided on the top of this pipe for watering the earth.(ii) In the case of pipe electrodes, a 40 mm x 20 mm reducer shall be used for fixingthe funnel with mesh.

(iii) The watering funnel attachment shall be housed in a masonry enclosure of sizenot less than 30 cm x 30 cm x 30 cm.

(iv) A cast iron / MS frame with MS cover, 6 mm thick, and having locking arrangementshall be suitably embedded in the masonry enclosure.

8.4.2 ***Earthing Conductor (Main Earthing Lead)***

(i) In the case of plate earth electrode, the earthing conductor shall be securelyterminated on to the plate with two bolts, nuts, check nuts and washers.(ii) In the case of pipe earth electrode, wire type earthing conductor shall be securedas indicated in Fig. 11 using a through bolt, nuts and washers and terminating socket.(iii) A double C-clamp arrangement shall be provided for terminating tape type earthingconductor with GI watering pipe coupled to the pipe earth electrode. Galvanized“C” shaped strips, bolts, washers, nuts and check nuts of adequate size shall beused for the purpose.(iv) The earthing conductor from the electrode up to the building shall be protectedfrom mechanical injury by a medium class, 15 mm dia. GI pipe in the case of wire,and by 40 mm dia, medium class GI pipe in the case of strip. The protection pipein ground shall be buried at least 30 cm deep (to be increased to 60 cm in case ofroad crossing and pavements). The portion within the building shall be recessed inwalls and fl oors to adequate depth in due co-ordination with the building work.(v) The earthing conductor shall be securely connected at the other end to the earthstud/earth bar provided on the switch board by:

(a) Soldered or preferably crimped lug, bolt, nut and washer in the case of wire,and

(b) Bolt, nut and washer in case of strip conductor.In the case of sub-stations or alternators, the termination shall be made on theearthing terminal of the neutral point on the equipment and/or the earth bus, as thecase may be.

8.4.3 ***Loop Earthing/ Earth Continuity Conductor***

(i) Earth terminal of every switchboard in the distribution system shall be bonded tothe earth bar/ terminal of the upstream switch board by protective conductor(s).

(ii) Two protective conductors shall be provided for a switchboard carrying a 3-phaseswitchgear thereon.

(iii) Loop earthing of individual units will not be however necessary in the case ofcubicle type switchboards.

(iv) The earth connector in every distribution board (DB) shall be securely connectedto the earth stud/ earth bar of the corresponding switch board by a protectiveconductor.

(v) The earth pin of socket outlets as well as metallic body of fan regulators shall beconnected to the earth stud in switch boxes by protective conductor. Where theswitch boxes are of non-metallic type, these shall be looped at the socket earthterminals, or at an independent screwed connector inside the switch box. Twistedearth connections shall not be accepted in any case.

8.5 Earth Resistance

(i) The earth resistance at each electrode shall be measured. No earth electrode shallhave a greater ohmic resistance than 5 ohms as measured by an approved earth testing apparatus. In rocky soil the resistance may be up to 8 ohms.

(ii) Where the above stated earth resistance is not achieved, necessary improvementshall be made by additional provisions, such as additional electrode(s), differenttype of electrode, or artifi cial chemical treatment of soil etc., as may be directed bythe Engineer-in-charge.

8.6 Marking

(i) Earth bars/terminals at all switch boards shall be marked permanently, either as"E" or as

(ii) Main earthing terminal shall be marked "SAFETY EARTH – DO NOT DISCONNECT".

8.7 Use of Residual Current Devices (RCDs)

An extract on selection and application of RCDs (also known as RCCBs) from IS12640: 1988 is given at Appendix G. Provision of RCD shall be specifi ed in individualcases keeping in view the type, use, importance, system of earthing and nature ofelectrical installations to be protected by the RCCBs, requirements of the local electricsupply company, etc. The sensitivity shall be 30 mA, 100 mA, 300 mA, or 500 mA, asspecified.**TABLE IX (Revised)Materials and Sizes of Earth Electrodes** *[Clause 8.2.1.2(i)]Type of Electrodes Material Size*Pipe GI medium class 40 mm dia4.50 m long (without any joint)Plate (i) GI 60 cm x 60 cm x 6 mm thick (ii) Copper 60 cm x 60 cm x 3 mm thick Strip (i) GI 100 sq. mm section (ii) Copper 40 sq. mm section Conductor (i) Copper 4 mm dia (8 SWG)

Note : Galvanisation of GI items shall conform to Class IV of IS 4736 : 1986.

[FOR DETAILED SPECIFICATION REFER MPPWD/CPWD TECHNICAL SPECIFICATION]

	NON SOR-B162 FURNITURE & FURNISHING WORK	
	SENSORED DOOR OPERATING SYSTEM	
1	Providing and fixing Automatic Sliding door operator, compliant with European standards and produced according to the guidelines for power-operated windows, doors and gates, BGR 232, the UVV and the VDE regulations. TÜV design tested for durability of 1 MillionCycles, tested according to the low voltage guidelines, fulfils DIN 18650 standards, for frameless glass door application modular design including internal cover and with 12mm toughened glass for 1 No. sliding door panel and 2 Nos fixed panels .Operator & Frame Finish should be Silver Anodized E6/C0, with operator dimensions (H x D) : 100 x 180 mm and of length as required to suit the opening size given below. Operators shall be with Self balancing Panel suspension system and with Anti-Jump fitting. The track profile should be separate from the main profile for enabling reduction in vibration insulation, With backplate for easy Installation. Microprocessor-controlled control unit, Self-learning, with adjustable parameters for opening and closing speed, hold-open time and opening and closing force, reversing when obstruction is encountered, with SMPS, Class of protection IP 20. Activators- Combination Radars System (02 Nos) on Inside & Outside, Light barriers comprising receiver and transmitter - 01 Pair with, 5 Position Program Switch with Knob. Operator's Max Panel Weight Carrying Capacity of 1 X 120 Kgs/ 2 X 100 Kgs. The system shall have constant power supply 230V± 5%, 50Hz, AC .	
i	Automatic Bi - Parting Panels Frameless Sliding Door Operator for upto 2.1 Mtr(Height) x2.7 Mtr(Width) Opening (Glass Panel Price not Included)	
ii	Automatic Bi - Parting Panels frameless Sliding Door Operator for upto 2.1 Mtr(Height) x 1.2/0.90 Mtr(Width) Opening (Glass Panel Price not Included)	
iii	Automatic Bi - Parting Panels frameless Sliding Door Operator for upto 2.1 Mtr(Height) x 1.5 Mtr(Width) Opening (Glass Panel Price not Included)	
	MANUAL GLASS DOORS	

2	"Design supply and installation of Glazed door with floor spring and standard patch Fittings of SS-304 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass hold t with SS- 304 Grade Stainless steel patch fittings . The rate shall include all design, fittings, labour, hardware such as lock,handle, cutting hole other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener, anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of opening shall be measured."	
	POWDER COATED METALIC DOOR	
3	Providing and fixing fectory finished metalic door should have of following specification: (i) **Door shutter construction:**Shutter shall have thickness of 46mm and 1.0/1.2mm thk.(as recommonded by company as per width of shutter)slip coated pre galvanised steel sheet confirming to ASTM A527,JIS G 3302 or BS 2989 1994,IS 277.Zinc coating 80-120 g.m2 on both faces .should have lock formed panel with internal stiffeners of 3mm thk made of GP.3.0mm thk hinge reinforcing,Whole shutter shaould be filled with paper honeycomb of 150gsm . **Door Frame**: Shall confirming to IS 4351:2003,1.2mm thick pre galvanised steel sheet with mitred and welded comes,frame should also have hinge reinforcing plates,fixing plates and hardware mounting plates.Approved make :TATA/Pravesh	
4	Providing and fixing fectory finished fire rated metalic door should have of following specification: (i) **Door shutter construction:**Constructed from 0.80mm(22swg)thick skin pass Galvanized iron sheet (Conform to IS 277) formed to provide 46mm fully flushed double skinned door shutter. **Door Frame**: Shall confirming to IS 4351:2003,1.2mm thick skin pass galvanised steel sheet formed to double rebated profile of sz 143x58mm.Vision panel:Fire rated vision glass single glazed with 7.0mm thk clear wired glass. Core Material(infilling:The internal construction of the door is a specially designed fire rated honey comb kraft paper insulation with reinforcement at top ,bottom and stile surrounds. Approved make:TATA/Pravesh	

5	**Flushed door** :Providing and fixing ISI marked flush door shutters 30mm thick conforming to IS: 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3mm face veneers on both faces of shutters and including ISI butt hinges and screws.	
i	laminated with 4 mm natural teak veneer duly polished with melamine with under coates of sanding sealer	
ii	laminated with 1mm thick designer laminate with combination of charcoal sheet.	
	ACOUSTICAL CEILING	
6.00	Providing and fixing of Glass Fiber Acoustical Suspended Ceiling System with 16mm thick microlook edge tiles of size 595x595mm as approved by Engineer-in-charge, in true horizontal level suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 gsm/sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 15x38mm made from 0.30mm thick (minimum) sheet, spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27x37x25x1.6 x mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4mm GI adjustable rods with galvanised butterfly level clips of size 85x30x0.8 mm spaced at 1200mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications drawings and as directed by Engineer-in-charge.The tiles should have Humidity Resistance (RH) of 99%, NRC 0.5, Light Reflectance ≥83%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Colour White, Fire Performance UK Class 0 / Class 1 (BS 476 pt - 6 and7) in module size of 600 x 600 x 16mm with Bio Block coating on the face of the tile, suitable for Green Building application, with Recycled content of 38 - 41%. The Tile and Grid system used together should carry a 15 year warranty.	
7.00	**WOODEN CEILING**	

	Providing, fabrication, installation of wooden false ceiling in perfect line and level, having base frame made up of 18 mm plywood having width 100 mm and panelled with 12mm thick Plywood laminated with 4mm thick natural Veneer, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, making required opening for fixing of the light fixtures and finishing the veneer surface with melamine polish over two or more coat of sanding sealer, base frame suspended on 18 mm thick plywood sandwiched to form 38 mm X 100 mm members and fixed to soffit with help of screw anchored with rawl plugs of required size, including necessary SS screws, adhesive etc. required for fixing, pasting all complete and direction of Engineer-in-charge.	
8.00	**WALL PANELLING AND PARTITIONS**	
i	**Fabric Acoustic Wall Panelling upto 2.40 Lavel:-** Providing and installation of acoustical wall panelling/partition wood finish Slats made out of HDF board , Melamine / veneer laminated finish, perforated wooden grooved slats (2mm grooves @ 8mm centers) / (2mm Slats @16mm pitch) / (2mm grooves @ 32mm centers) / (2mm grooves @ 64mm centers), backlined with black acoustical fleece, tongue-groove edge for a seamless look, FR grade, of lineal dimension size 128mm x 2440mm x 16mm thick having density 1000Kg /m3, weight 12.8Kgs/m2 installed by using GI strut system. The GI strut system includes GI Cross channel having thickness 0.45mm, length 3600mm, knurled web 40mm, depth 10mm and equal flanges 15mm is fastened vertically/ horizontally at every 600mm centers. Aluminium core cross channel having thickness 0.5mm, length 2400mm, web 15mm and 27mm, depth 18mm and flanges of 7mm with suitable edge and centre brackets is then fixed perpendicular to the cross channel with the help of fasteners at every 400mm centers. Contractor to Provide expansion joints of 3mm at every 5mts bothways.	

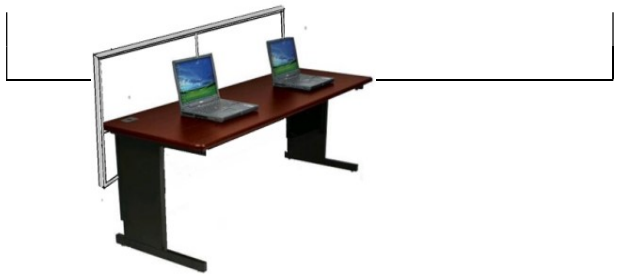
ii	Providing & fixing in position panelling for partitions / walls/ columns/ beams etc. with base frame made up of 18 mm thick plywood with two ply sandwitched to give finished 36 mm x 50 mm section and fixed to form 600 mm c/c grid work including extra member at skirting level, providing slots for passing the electrical/ data conduits in the framework as per the requirement, fixing the frame to wall with minimun 100 mm fully threaded SS screws and PVC rawl plug including panelling the frame with 8mm thk plywood laminated with 1mm thick decorative mica , providing grooves of size 8 mm X 4 mm as per drawing on the panelling including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	
9.00	Providing and fixing in position wooden partition (partly glazed) with frame made up of 18 mm thick plywood with two ply sandwitched to give finished 36 mm X 75 mm section and placed at 600mm c/c bothways horizontally and vertically and fixed on floor and soffit with anchore fastener of required size, providing slots for passing the electrical/ data conduits in the framework as per the requirement including panelling the frame on both faces with 8mm thk plywood laminated with 1mm thick designer laminate of approved colour and make, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, fixing 8 mm thick plain galss of required size in the glazed portion of partition with suitable teak wood beading, finishing of beading with malamine polish over two or more coats of sanding sealer including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	
10.00	Providing and fixing in position Designer solid wooden partition with frame made up of 18 mm thick plywood with two ply sandwitched to give finished 36 mm X 75 mm section and placed at 600mm c/c bothways horizontally and vertically and fixed on floor and soffit with anchore fastener of required size, providing slots for passing the electrical/ data conduits in the framework as per the requirement including panelling the frame on both faces with 8mm thk plywood laminated with 1mm thick laminate of approved colour and make, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, finishing all lippings and beading surfaces with spraying coat of melamine polishing over preprepared surface with 2 or more coats of sanding sealer of approved make including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	

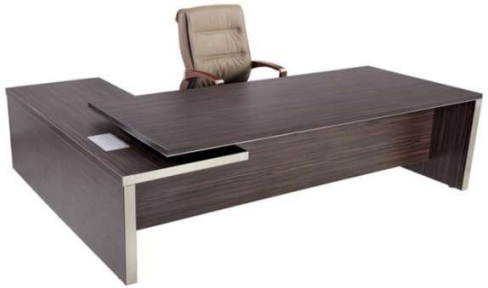
11.00	Providing and fixing in position solid wooden low height partition with frame made up of 18 mm thick plywood with two ply sandwitched to give finished 36 mm X 75 mm section and placed at 600mm c/c bothways horizontally and vertically and fixed on floor with anchore fastener of required size, providing slots for passing the electrical/ data conduits in the framework as per the requirement including panelling the frame on both faces with 8mm thk plywood laminated with 1mm thick laminate of approved colour and make, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, providing and fixing 12mm thick High density MDF board moulding on the partition top with 6mm spacer of MDF board to maintain uniform groove of 6 mm and finishing all exposed surfaces with spraying coat of melamine polish over preprepared surface with 2 or more coats of sanding sealer of approved make including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	
12.00	Providing and fixing in position Designer solid wooden partition with frame made up of 18 mm thick ply with two ply sandwitched to give finished 36 mm X 75 mm section and placed at 600mm c/c bothways horizontally and vertically and fixed on floor with anchore fastener of required size, providing slots for passing the electrical/ data conduits in the framework as per the requirement including panelling the frame on both faces with 12mm thk plywood laminated with 1mm thick designer laminate with combination of charcoal sheet/designer MDF board of approved pattern ,colour and make, providing grooves of size 8/4 mm as per drawing on the panelling, providing and fixing 12mm thick High density MDF board moulding on the partition top with 6mm spacer of MDF board to maintain uniform groove of 6 mm and finishing all exposed surfaces with spraying coat of melamine polish over preprepared surface with 2 or more coats of sanding sealer of approved make including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	

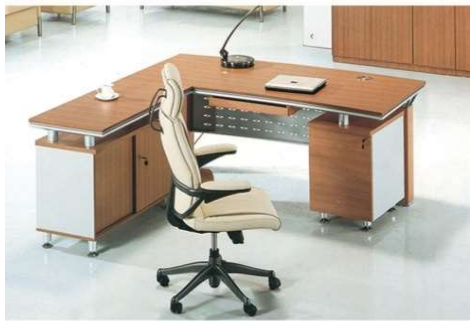
13.00	"Design supply and installation of Glazing system , System held with patch Fittings of SS-304 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass with film held together with SS- 304 Grade Stainless steel . The Glass fins and glass panel assembly shall be connected to Slab/beams by means of SS- 316 Grade stainless steel brackets and Anchor bolts , non staining weather sealants of approved make, Teflon/ nylon bushes and separators to prevent bi-metallic contacts, all complete to perform as per specification and approved drawings. The complete system to be designed to accommodate thermal expansion and seismic movements etc. The joints between glass panels (6 to 8 mm) and gaps at the perimeter and in U channel of the assembly to be filled with non staining weather sealant, so as to make the entire system fully water proof and dust proof. The rate shall include all design, Engineering and shop drawing including approval from structural designer, labour, TandP, scaffolding , other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener, anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of Glass panel inside the SS channel shall be measured."	
14.00	Providing and fixing factory made UPVC white colour sliding glazes partition /door comprising of UPVC multi chambered frame with in-built rollar track and sash extruded profile es duly reinforced with 1.6 +0.20 mm thick galvanized mild steel section made from roll forming process of rwquired length (shape and size according to UPVC profile),appropriate dimension uPVC extruded glazing beads, uPVC extruded interlock and uPVC extruded inline sash adaptor(if required), EPDM gasket,wool pile,zinc alloy (white powder coated) handle with key on one side of external panels along with zinc plated mild steel multi poimnt locking having transmission gear with keeps,zinc alloy (white powder coated) cresent lock (if required),stainless steel (SS 304 grade) ,body with adjustable double nylon rollars (weight bearing capacity to be 120 kgs),G.I fastener 100x8mm size for fixing frame to finished wall and necessary stainless steel screws etc.Profile of frame and sash shall be mitred cut and fusion welded at all corners,including drilling of holes for fixing hardware's and drainage of water etc.after fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealent over backer rod of required size and of approved quality .all complete as per approved drawing & direction of Engineer -in -charge,(Single/double glass panes,wire mesh and silicon sealent shall be paid seperately).	
i	Two track three panel sliding door/partition made of (Big searies) frame 116x45 mm & sash 46x82mm both having wall thickness of 2.3 +2.0 mm and single glazing bead.(Area of door above 2.0 sqm upto 5.0 sqm)	

ii	Three track three panel sliding door/partition made of (Big searies) frame 116x45 mm & sash 46x82mm both having wall thickness of 2.3 +2.0 mm and single glazing bead.(Area of door above 2.0 sqm upto 5.0 sqm)	
15.00	**MODULAR PARTITIONS**	
i	**Full Height Partitions in Solid finish**	
	83mm Full Height Partition with laminate / fabric / marker / Soft board Finish	
	Partition will have double skin provision for 12mm Thick tiles, Structure material and All Exposed will be Aluminum Anodized finish and the connecting members used for joining False ceiling to Hard Ceiling are CRCA powder coated	
ii	**Full Height Partitions in Single Glass finish**	
	Partition will have Single skin provision for 10 mm thick plain toughened glass at Centre. Structure material and All Exposed will be Aluminum Anodized finish and connecting members used for joining False ceiling to Hard Ceiling are CRCA powder coated	
	Rates are inclusive of the toughened glass.	
iii	**Full Height Partitions in Double Glass finish with Horizontal Grid**	
	Partition will have double skin provision for 8 mm thick plain toughened glass from Outside and 5 mm thick plain toughened glass from inside. Structure material and All Exposed will be Aluminum Anodized finish and connecting members used for joining False ceiling to Hard Ceiling are CRCA powder coated	
	Rates are inclusive of the toughened glass.	
iv	**full Height Partitions in Double Glass finish and Horizontal Vanishing Blinds**	
	Partition will have double skin provision for 8 mm thick plain toughened glass from out side and 5mm thick plain toughened glass from inside. Structure material and All Exposed will be Aluminum Anodized finish and connecting members used for joining False ceiling to Hard Ceiling are CRCA powder coated. Additional Blinds are provided in between the glasses to provide privacy in the partition. Blinds are operated by the Knobs which will be fitted to the partition from the internal side	
	Rates are inclusive of the toughened glass.	
v	**Glass Doors Frame & Door**	
	Door Hardware consist of Floor Spring, Patch fitting , Lock and Handle	
	Size :- 900mm x 2130mm	
	Glass is 12mm Toughened Glass	

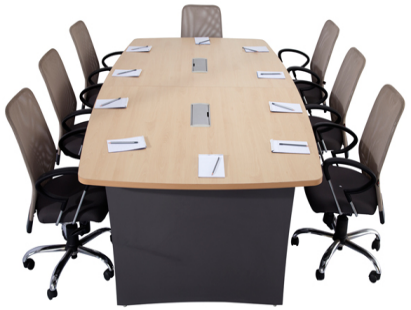
vi	**Solid Door Frame & Door with Vision Panel**	
	Door frame consisting of Hinges , door closer and lock	
	Size :- 900mm x 2130mm	
	Door panel of 43mm Thick , Internal construction is Block Board with 5mm Prelaminated MDF on both side with a vision panel at eye level	
16.00	Box Panelling: Providing and fixing in position wooden box panelling with frame made up of 18 mm thick plywood and panelled with 12mm ply wood laminated with 4mm thick natural veneer of approved make and shade, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, finished with spray coat of melamine over pre prepared surface with two or more coat of sanding sealer, making slots as shown in drawing for display including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge	
	FURNITURE: RACKS AND STORAGES	
17.00	Providing and fixing in position 450 mm wide wooden display cum show rack made up of 18 mm thick plywood laminated with 4mm thick veneer /designer mica/ 6mm Corian in combination on all the exposed surfaces, finishing all the veneer surfaces with spray coat of melamine polish over 2 or more coats of sanding sealer of approved make including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	
18.00	Providing and fixing in position wooden storage unit as per design and drawing including shutters of required size made up of 18mm th plywood except at the back side where it shall be 6 mm thick plywood, laminating all the exposed plywood surafaces with 1.0 mm thick decorative laminate of approved colour and shade and 0.8 mm balancing lamination on internal surface, edge banding all the exposed edges such as of shutters/ drawers etc. with 2 mm thick matching PVC edge banding, providing and fixing on shutters auto closing nickel plated steel clip-on-hinges of approved make including mounting plate, providing and fixing nickle plated steel telescopic slider of appropriate capacity and of approved make for the drawers and suitable locking arrangemet with three keys, including providing and fixing on shutters/ drawers SS 304 handles of dia 10 mm and sizei 125/ 150 mm as required including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	
i	Low height up to 1.2 m	
ii	Full Height 2.10M	

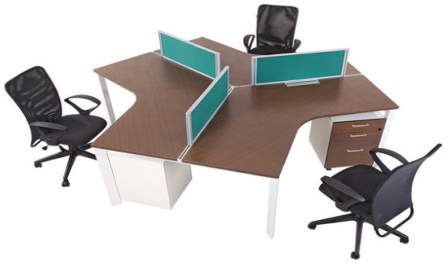
19.00	Storage(3900x450x1000mm Storage 12 Openable doors storage unit with BSL & all side edge bending in 18 mm thikckness. All in Single Laminate (One Colour)	
i	3500x450x1000mm	
ii	3000x450x1000mm	
iii	2100x450x1000mm	
iv	2100x450x750mm	
v	3000x450x750mm	
	FURNITURE: TABLES	
20.00	Providing and fixing in position Running staff table as per design and drawing with postformed pre laminated partical board confirming to IS 2380 top,Table shall have all vertical support in partical board and shall be equiped with keyboard trey,CPU trolly ,double raceway for data cable and electrical cable. Note:Table shall have vertical top mounted modesty panel .	
iii	2 Seater SZ 1650 x600x900mm	
21.00	Providing and fixing Reception Counter of size 2500 x700x 1200 mm made up of 18 mm thick Plywood having corian finished costumer top and fecia of thickness 12 mm and laminated with 4mm thick natural veneer on all the exposed surfaces and 0.80 mm thick laminate on all internal surfaces, providing and fixing edge banding with 2 mm thick PVC strip on all edges, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, providing key-board trays with slides, SS wire managers, etc. as per the drawing and requirement, including providing and fixing shall have 3 nos. drawer units with drawers and shutters below working top as per the drawing, providing and fixing nickle plated steel telescopic slider of approprate capacity approved make for the drawers and suitable locking arrangemet with three keys, including providing and fixing on shutters/ drawers handles of dia 10 mm and size 125/ 150 mm as required and Grade SS 304 including necessary SS screws, adhesive etc. required for fixing, pasting all complete **Approved make:Wipro/Godrej/Geeken/Spacewood**	

22.00	**EXECUTIVE Table-1 :**Providing and fixing in position table similar to Model name Broadway /Sleel line with the following details and specifications: (i) Main Table: having work top and side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2mm thick edge banding and required arrangement for fixing of extension unit. (ii) Extension Unit:of Company standard size having top made up of 25 mm thick MDF laminated with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding. All other specifications, including necessary plinth levelers,Metal frames, cable managers, nails, screws, adhesive etc all complete should be strictly followe as per manufacturer's specification and direction of Engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood or Equivalent.**	
	Sz L2100x 2330x750mm	
23.00	**EXECUTIVE Table-2 :**Providing and fixing in position table Model name Exclusive/Steel line of size 1800 mm L X 900 mm D X 750 mm H with the following details and specifications:(i) Main Table: having work top made of 65 mm thick MDF laminated with veneer , modesty panel of height 600 mm made up of 16 mm thick MDF laminated with veneer (ii) Extension Unit:of size 1200 mm W X 445 mm D X 660 mm H having top made up of 25 mm thick MDF laminated with veneer Veneer, modesty panel of size (iii) Pedestal Unit: mobile unit with outer frame having size 510mm x 445 mm x 635 mm (outer) having 3 drawers (pencil, utility and filing) all made up of MDF laminated with veneer on both sides and all edges sealed with 2 mm thick edge banding, drawers fixed with nickle plated steel telescopic sliders of approved make, MS powder coated handles of size 150 mm and a central lock for three drawers, unit provided with castors with front two lockable castors.All the exposed surface coated with PU of hardness 1.5H, including necessary plinth levelers, cable managers, nails, screws, adhesive etc all complete as per manufacturer's specification and direction of Engineerincharge. **Approved make:Wipro/Godrej/Geeken/Spacewood**	

	Sz 1800 x 1750 x 750mm	
24.00	**OFFICERS** : Supplying and fixing in position table of Model Name Classic/Steel line with the following details and specifications: (i) Main Table: having work top and two side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2mm thick edge banding and required arrangement for fixing of extension unit. (ii) Extension Unit: of size 1050 mm WX 450 mm DX 705 mm H with required arrangement for fixing to the main table and having having work top and one side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2 mm thick edge banding.	
	(iii) Pedestal Unit: mobile unit with outer frame having size 400 mm x 450 mm x 680 mm (outer) and internal 3 drawers (pencil, utility and filing) all made up of18 mm thick plain particle board clad with1 mm thick decorative laminate on both sides and all edges sealed with 2 mm thick edge banding, drawers fixed with nickle plated steel telescopic sliders of approved make, SS 304 handles of size 150 mm and a central lock for three drawers, unit provided with castors with front two lockable castors. including necessary plinth levelers, cable managers, nails, screws, adhesive etc all complete as per manufacturer's specification and direction of Engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood**	
i	Main table of Size 1800WX 900 DX750H	

25.00	**OFFICERS** : Supplying and fixing in position table of Model Name Numero/Steel line with the following details and specifications: (i) Main Table: having work top and two side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2mm thick edge banding and required arrangement for fixing of extension unit. (ii) Extension Unit: of size 1050 mm WX 450 mm DX 705 mm H with required arrangement for fixing to the main table and having having work top and one side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2 mm thick edge banding.	
	(iii) Pedestal Unit: mobile unit with outer frame having size 400 mm x 450 mm x 680 mm (outer) and internal 3 drawers (pencil, utility and filing) all made up of18 mm thick plain particle board clad with1 mm thick decorative laminate on both sides and all edges sealed with 2 mm thick edge banding, drawers fixed with nickle plated steel telescopic sliders of approved make, SS 304 handles of size 150 mm and a central lock for three drawers, unit provided with castors with front two lockable castors. including necessary plinth levelers, cable managers, nails, screws, adhesive etc all complete as per manufacturer's specification and direction of Engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood**	
i	Main table of Size 1650 WX 750 DX750H	
	Numero-7 without side unit	
ii	Main table of Size 1200 WX750 DX750H	

####	**Discussion Table**: Supplying & Fixing in position table of Model Name Boardroom/Steel line overall size 2100 x1200x 750 mm having the top made up of 25 mm thick prelaminated particle board with 2 mm thick PVC edge banding, side panels made up of 25 mm thick prelaminated particle board with 2 mm thick PVC edge banding on sides and 0.8 mm thick PVC edge banding at the bottom, modesty panel made up of 18 mm thick prelaminated particle board with 0.8 mm thick PVC edge banding, Access flap & switch mounting Tray made from matt finished sliver anodised aluminium extrusion and plastic moulded components to facilitate acess of electrical/ data/ voice sockets from the top and 0.8 -1.2 mm powder coated MS sheets respectively having provision for mounting 8 module switch plate all complete as per manufacture's specification and direction of engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood**	
	8 seater 2400x1200x750mm	
	12 seater 3000x1200x750mm	
####	**Conference Table**: Supplying & Fixing in position table of Model Name Boardroom/Steelline or approved equivalent having the top made up of 25 mm thick prelaminated particle board with 2 mm thick PVC edge banding,Top shall be rested on steel frame panelled with uphilstered panel on both the faces flushed with steel frame section. top of table should also havedge Access flap & switch mounting Tray made from matt finished sliver anodised aluminium extrusion and plastic moulded components to facilitate acess of electrical/ data/ voice sockets from the top and 0.8 -1.2 mm powder coated MS sheets respectively having provision for mounting 8 module switch plate all complete as per manufacture's specification and direction of engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood**	
	24 seater 7400x4200x750mm	
	15 seater 4500x1500x750mm	
	FURNITURE: WORKSTATION	

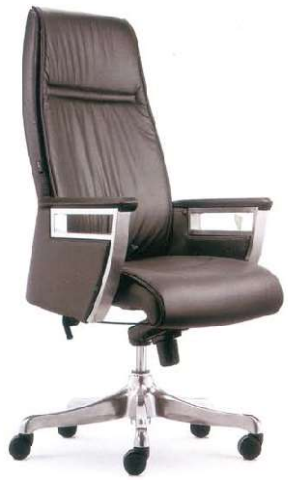
28.00	**Workstation for Computer Lab**: Providing and fixing in position panel based modular linear workstation similar to MAX/STRATUM/Steelline having following specifications: (i) Frames of partition panels which includes horizontal top rails, horizental connector profiles at every division of tiles made up of of aluminium extruded sections and comprise of of two type of sections one having thickness 50-60 mm for back spine panel and 20-25 mm for fin panels, vertical end post to have continuous vertical loacking arrangement for interconnection of two adjacenet panels. Bottom of the partition panel made up of minimum 1 mm thick CRCA steel. (ii) Joinery posts made up of aluminium extruded section provided at the junctions of panels and shall be 2-way, 3-way or 4-way as required having continuous locking arrangement. (iii) Trims provided to cover the exposed edges of the frame made up of aluminium extruded section having flat or curved profilie giving aesthetic look to the frame. (iv) Caps provided to cover the joineries made up of die cast aluminium or hard plastic. (v) Comprehensive wire management system for elecrical and data wires at the top and bottom tile levels, having provision to take wires from side walls at both the levels, provision of cutouts for mounting of switches at any level, separate slots for passage of data and elecrical wires, concealed conduits for verical passage of wires etc.	
	(vi) Top rails, end post, joineries, trims made out of aluminium and frame bottom all are duly epoxy powder coated having thickness 50-60 microns. (vii)Table top of width 600 mm, fixed at height of 750 mm from the ground level and made up of 25 mm thickplain particle board laminated with 0.6 mm laminate and 0.8 mm thick balancing laminate at the bottom, top having front edge to be postformed and all other edges to be covered with 2 mm thick PVC laminate. (viii) table top provided with circular holes as per requirement to ficilatate wire connections and covered with modular wire manager made in ABS.	

	(ix) Tiles for main spine panel: The bottom tile shall be press fitted on the panel frame using snap-on-clips made of nylon 66, and provided with laminates on either side with 8 mm thick particle board laminated with 0.6 mm high pressure laminateon outer side and 0.6 mm backing lamiante on inner side and having all its edges with 0.5 mm PVC edging. The Intermediate block shall be provided with 3 mm thick MDF with 0.6 mm laminate on both sides over the paper honeycomb of required thickness. Top tile shall be provided on either side with 8 mm thick particle borad upholstered with fabric using adhesive on both sides.(x) Tiles for fin panel:The bottom and inetrmediate tiles shall be provided with 16 mm thick particle board laminated with 0.6 mm high pressure laminateon both sides and having all its edges with 0.5 mm PVC edging.Top tile provided with18 mm thick plain particle board upholstered with fabric using adhesive.(xi) Mid partitions below table top shall be made up of 25 mm thick plain particle board laminted with 1 mm thick decorative laminate on both sides and edges sealed with 2 mm thick PVC edge banding. including all necessary accessories like plinth leveler, clips etc. and materials like screws, adhesive etc. all complete as per direction of engineer-in-charge.
	Approved make:Wipro/Godrej/Geeken/Spacewood
i	3 Seater Size 2250 x 600 x 900 mm

29.00	**Workstation for Office** : Providing and fixing in position panel based modular pentagonal (concave curved inner junction) workstation similar to MAX/STRATUM/Steelline of size 1500/ 900 mm (L) X 600 mm (D) X 1200/ 900 mm (H) and of approved make having following specifications: (i) Frames of partition panels which includes horizontal top rails, horizental connector profiles at every division of tiles made up of of aluminium extruded sections and comprise of sections having thickness 50-60 mm for spine and fin panels, vertical end post to have continuous loacking arrangement for interconnection of two adjacenet panels, (ii) Joinery posts made up of aluminium extruded section provided at the junctions of panels and shall be 2-way, 3-way or 4-way as required having continuous locking arrangement. (iii) Trims provided to cover the exposed edges of the frame made up of aluminium extruded section having flat or curved profilie giving aesthetic look to the frame. (iv) Caps provided to cover the joineries made up of die cast aluminium or hard plastic. (v) Comprehensive wire management system for elecrical and data wires by providing raceway at two levels one just below the table top and other at skirting level, both covered with aluminium extruded plates form both sides and snap fitted with aluminium extruded raceway clip, raceway panel having provision for mounting and punching switch & socket plates and socket plates	

	(vi) Top rails, end post, joineries and raceway panels made out of aluminium all are duly epoxy powder coated having thickness 50 microns. (vii)Table top of pentagonal shape and of width 600 mm, fixed at height of 750 mm from the ground level and made up of 25 mm thick plain particle board laminated with 1 mm thick decorative laminate and 0.8 mm thick balancing laminate at the bottom and all other edges to be covered with 2 mm thick PVC laminate. (viii) table top provided with circular holes as per requirement to ficilatate wire connections and covered with modular wire manager made in ABS. (ix) The bottom block 1st and 3rd tiles (from the bottom) of the spine panel of length 1500 mm and height 1200 mm provided with 9 mm thick decorative prelaminated particle board of approved shade on both side pased on the particle board batten frame, 2nd tile provided with racwway and 4th i.e. the top panel povided with split tile having half length with whiteboard tile and balance half with tackable fabric tile. The whiteboard tile made of 8 mm thick particle board laminated with 0.6 mm high pressure white laminate on outer side and 0.6 mm backing laminate on inside having all the edges provided with 0.5 mm PVC edging.	
	(x) Fin Panel of length 600 mm and height 1200 mm is to be provided with tiles having the same detailing as above The top, inetrmediate and bottom tiles of fin panel of length 900 mm and height 900 mm provided with 18 mm thick decorative prelaminated board. (xi) Mid partitions, if required, made up of Gable ends and mid partitiof as per design and drawing with p mm thickplain particle board laminted with 1 mm thick decorative laminate on both sides and edges sealed with 2 mm thick PVC edge banding. including all necessary accessories like plinth leveler, clips etc. and materials like screws, adhesive etc. all complete as per direction of engineer-in-charge.	
	Manufacturing, supplying and placing in position of the 60mm Thick Panel Based (Startum/MAX/Steelline). 1500X1500X1050mm Height. Partition is made of 60mm thick aluminum frames in the main as well as return spine finished with 2mm Thick PVC Edge band. Worktop is supported upon Top Patti and 60mm Dia Round Pole Leg . Worktop height 750mm from ground level.	
i	Complete corner set including partition of sz 1500 X 1500x1200 mm.	

ii	Center set including front partition of sz 1500 X 600x1200 mm.	
30.00	Providing and installation of following accessories for work stations:	
i	Mobile Pedestal unit made of 18mm thick PLPB-with D Type handle & Lock hettich make. All the Item will be as per manufacturer's specifications, drawings & direction of Engineer in charge. The Products should be tested as per BIFMA standards. The Product should have ISO-9001:2000 and ISO 14001-2004 certifications.The boards used should meet international standards of quality and safety, as per EN 312, type P II, E2 and Indian standards IS 3087, grade II.Should meet stringent norms of bending strength, screw-withdrawal strength and modulus of elasticity .	
	Mobile Pedestal W400XD450XH680mm	
ii	25mm thick Gable End (W590 X H725mm)	
iii	Laminated Keyboard	
iv	Laminated CPU Trolley	
v	Plain Glass Divider (W590 H430)	
	Reference item code: Model name Stratum,Max Approved make:Wipro/Godrej/Geeken/Spacewood	
31.00	**Center Table:** Providing and fixing in position center table as per design and drawing made up of 18mm thick Plywood with 12mm th. toughen glass top and laminated with 1.0 mm thick decorative laminate of desired shadeand 0.8 mm thick balancing lamination on the internal surface, edge banding all the external edges with 2 mm thick matching PVC strip, table top shall be supported on 1" high s.s.studds and whole table shall rest on 2" high nickel plated legs as per direction of Engineer-in-Charge.	
i	SZ 1200X1200X450MM	
ii	SZ 600X1200X450MM	
31.00	**Corner Table:** Providing and fixing in position center table as per design and drawing made up of 18mm thick Plywood with 12mm th. toughen glass top and laminated with 1.0 mm thick decorative laminate of desired shadeand 0.8 mm thick balancing lamination on the internal surface, edge banding all the external edges with 2 mm thick matching PVC strip, table top shall be supported on 1" high s.s.studds and whole table shall rest on 2" high nickel plated legs as per direction of Engineer-in-Charge.	

	SZ :600x600x400MM	
	FURNITURE: CHAIRS & SOFA	
####	**Executive Chair-1 (High Back)**: Supplying and installing High back chair Model mint-1, ergonomically designed for contoured lumber support for extra comfort having seat made up of insert moulded polyurethane foam of density 75 +/- 4kg/m3 upholstered with foam laminated mesh fabric assembled over plastic seat cover, the back made up of two pieces injection moulded frame with the inner frame upholstered with mesh fabric and mounted on the main assembly, the armrest top made up of injection moulded polyurethane and mounted on the injection moulded height adjustable type armrest with height adjustable up to 45 +- 5 mm, synchronised pivot mechanism of 360 degree revolving type and having tilt with 3-position locking anti-shock feature, pneumatic height adjustment of 90 mm, neck rest assembly mounted on top of back made up of polyurethane foam upholstered with foam laminated mesh fabric and having vertical adjustment up to 45 mm & angular adjustment of 30 degrees, the pedestal made up of Die-cast Aluminium fitted with 5 No's twin wheel castors which aer injection moulded in Black PP all complete as per manufacturer's specification and direction of Engineer-in-charge. **Approved make :Wipro/Godrej/Geeken/Spacewood**	
i	All specifications as per above but non revolving Visitor chair similer to Mint-3 or	

####	**Executive Chair-2 (High Back)**: Supplying and installing High back chair Model Leoma, make Godrej or equivalent, ergonomically designed for contoured lumber support for extra comfort having seat made up of insert moulded polyurethane foam of density 75 +/- 4kg/m3 upholstered with foam laminated mesh fabric assembled over plastic seat cover, the back made up of two pieces injection moulded frame with the inner frame upholstered with mesh fabric and mounted on the main assembly, the armrest top made up of injection moulded polyurethane and mounted on the injection moulded height adjustable type armrest with height adjustable up to 45 +- 5 mm, synchronised pivot mechanism of 360 degree revolving type and having tilt with 3-position locking anti-shock feature, pneumatic height adjustment of 90 mm, neck rest assembly mounted on top of back made up of polyurethane foam upholstered with foam laminated mesh fabric and having vertical adjustment up to 45 mm & angular adjustment of 30 degrees, the pedestal made up of Die-cast Aluminium fitted with 5 No's twin wheel castors which aer injection moulded in Black PP all complete as per manufacturer's specification and direction of Engineer-in-charge.	
	Visitor chair all as above Model Mint-2	
####	**Officer chair-2 (mid Back):** Supplying and installing Mid back chair Model Name Alpha-1 , make Geeken/Scott/Godrej or equivalent, ergonomically designed for contoured lumber support for extra comfort having seat made up of insert moulded polyurethane foam of density 75 +/- 4kg/m3 upholstered with foam laminated mesh fabric assembled over plastic seat cover, the back made up of two pieces injection moulded frame with the inner frame upholstered with mesh fabric and mounted on the main assembly, the armrest top made up of injection moulded polyurethane and mounted on the injection moulded height adjustable type armrest with height adjustable up to 45 +- 5 mm, synchronised pivot mechanism of 360 degree revolving type and having tilt with 3-position locking anti-shock feature, pneumatic height adjustment of 90 mm, the pedestal made up of Die-cast Aluminium fitted with 5 No's twin wheel castors which aer injection moulded in Black PP all complete as per manufacturer's specification and direction of Engineer-in-charge.	 Alpha 1

i	Visitor chair all as above Model Alpha-4	
####	**Staff chair-(mid Back):** Supplying and installing Mid back chair Model Name Sleek-13/Sleek-2 Leoma, make Geeken/Scott/Godrej or equivalent, ergonomically designed for contoured lumber support for extra comfort having seat made up of insert moulded polyurethane foam of density 75 +/- 4kg/m3 upholstered with foam laminated mesh fabric assembled over plastic seat cover, the back made up of two pieces injection moulded frame with the inner frame upholstered with mesh fabric and mounted on the main assembly, the armrest top made up of injection moulded polyurethane and mounted on the injection moulded height adjustable type armrest with height adjustable up to 45 +- 5 mm, synchronised pivot mechanism of 360 degree revolving type and having tilt with 3-position locking anti-shock feature, pneumatic height adjustment of 90 mm, the pedestal made up of Die-cast Aluminium fitted with 5 No's twin wheel castors which aer injection moulded in Black PP all complete as per manufacturer's specification and direction of Engineer-in-charge.	

####	**Conference/ Discussion room chair**: Supplying and fixing Mid back chair Model Name Astra-6 or make Geeken/Scott/Godrej approved equivalent ergonomically designed for contoured lumber support for extra comfort having the seat and back made up of 12 mm thick hot pressed plywood upholstered with synthetic leather and moulded Polyurenthane Foan with density = 45+/-2 kg/m3, the armrest is made of moulded polyurethane and mounted on to a fixed type chrome plated M.S tubular armrest support and having a vertical adjustment of 15 mm. the synchronised pivot mechanism of 360 degree revolving type and having tilt with 4-position locking anti-shock feature, pneumatic height adjustment of 90 mm, the pedestal fabricated with 2 mm HR sheet, chrome plated and assembled with injection moulded black polypropylene hub cap and fitted with 5 No's twin wheel castors which aer injection moulded in Black Nylon all complete as per manufacturer's specification and direction of Engineer-in-charge.	
37.00	Supplying and installing Medium Back chair Model No. GW 705 make Geeken or approved equivalent ergonomically designed for proper lumber support having seat made up of 12 mm thick hot pressed moulded plywood and upholstered with fabric of approved colour and shade filled with PU foam of density for seat 45 +/- 2 kg/cum and back 32 kg/cum, polyproplyen shell behind the seat and back, PP armrests with chrome plated metal base, pneumatic gas lift, push back body contact mechanism with seat and back are arrested together for motion on central pivot, metal powder coated pedestal with Nylon twin wheel casters 5 nos. in star pattern all complete as per manufacturer's specification and direction of Engineer-in-charge.	

38.00	SOFA: Supplying and installing Sofa of Make Geeken Model name Flemingo or equivalent having specification as under: Upholstery : PVC Frame Material : Tropical Solid Wood joined by means of hardened steel screws and steel bolts, as well as glue. Seat Foam : Slab stock foam along with recron sheet. Foam Density : 17 kg/ cubic cm. Back Foam : Slab stock foam with recron fill. Foam Density : 17 kg/cubic cm Webbing : S-spring with cross menbrane Inner frame basic structure: made of wooden and commercial ply 12 mm thick frame seat fome use 40kg/m3 in back 32kg/m3 leatherite 1mm+- 0.1 mm upholstery and leg stainless steel 202 grade flate size 90X10mm thick and pvc shoe is used in the bottom of the frame. Providing and placing sofa inner frame , basic structure made of wooden and commercial ply 12 mm thick frame seat fome use 40kg/m3 in back 32kg/m3 leatherite 1mm+- 0.1 mm upholstery with woodan leg	
i	2 Seater 1780 mm (L) X 800 mm (D) X 725 mm (H)	
ii	1 Seater 900 mm (L) X 800 mm (D) X 725 mm (H)	

39.00	SOFA: Supplying and installing Sofa of Make Geeken Model name **"Aura"** or equivalent having specification as under: Upholstery : PVC Frame Material : Tropical Solid Wood joined by means of hardened steel screws and steel bolts, as well as glue. Seat Foam : Slab stock foam along with recron sheet. Foam Density : 17 kg/ cubic cm. Back Foam : Slab stock foam with recron fill. Foam Density : 17 kg/cubic cm Webbing : S-spring with cross menbrane Inner frame basic structure: made of wooden and commercial ply 12 mm thick frame seat fome use 40kg/m3 in back 32kg/m3 leatherite 1mm+- 0.1 mm upholstery and leg stainless steel 202 grade flate size 90X10mm thick and pvc shoe is used in the bottom of the frame. Providing and placing sofa inner frame , basic structure made of wooden and commercial ply 12 mm thick frame seat fome use 40kg/m3 in back 32kg/m3 leatherite 1mm+- 0.1 mm upholstery with S.S. legs	 
i	3 Seater :2110(L) 965(D) 825 (H)	
ii	2 Seater 1510 (L) 965(D) 825 (H)	
iii	1 Seater 920 (L) 965 (D) 825 (H)	
	COMPACTOR'S	
40.00	**Double Faced Mobile Unit for Compactor 2150mmH x 1830mmW x 900mmD**	

i	**Single Faced Mobile Unit for Compactor 2150mmH x 1830mmW x 457mmD** Providing and fixing Double Faced Mobile Unit for Compactor 2150mmH x 1830mmW x 900mmD - BASE FRAME : Base Frame shall be fabricated in channel Type from minimum 2.5 mm thick MS Sheet Size of Channel 25mm x 100mm x 45mm. GUIDE RAILS : The guide rails shall be made out of 28mm Bright bar placed on 1.2 mm thick M.S. Plate which will be above the floor and are as per the international standard of safety. SUPER STRUCTURE : Super structure of the Mobile storage system will consist of knock down type panels. All the components such as shelves, front panel, end panel, vertical rear panel, central partition etc. Will act as an integral member of the Unit. SHELVES : Shelves made of 22SWG thick Prime Quality C.R.C.A. having 10 folds each will be provided each designed to carry a U.D.L. of 70 kgs. VERTICAL PANEL : Vertical panel consists of the front, Centre & rear panel shall be made out of 20SWG thick C.R.C.A. Prime quality Mild Steel & designed to take the load of shelves. DRIVE COVER PANEL : Made out of 22SWG thick C. R.C. A. prime quality Steel to cover the entire drive mechanism. CENTRE PARTITION : The Centre partition will comprise of a full C.R.C.A. prime quality Mild Steel 22SWG Sheet. LOCKING : System will be provided with individual rack locking as well as centralised locking arrangement on the last unit when all units are brought together, central lock when operated gets locked with the floor & does not allow access to the units. DRIVE MECHANISM : Driving Mechanism will be provided externally supported on special grade anti-friction bearing to have smooth & effortless movement. Entire mechanism or gear & sprockets shall be incorporated within the front panel provided in the front of the unit within an area of 1000mm x 200mm x 60mm. DRIVING WHEEL : Fully Powder Coated three pronged drive wheel for better torque & free movement of the rack over the guide rail. INDEXING ARRANGEMENT : Acrylic card holders provided on the front panel for easy identification & retrieval. FINAL FINISH : Powder Coating (8 tanks process with 70 microns).	

	Providing and fixing Single Faced Mobile Unit for Compactor 2150mmH x 1830mmW x 457mmD - BASE FRAME : Base Frame shall be fabricated in channel Type from minimum 2.5 mm thick MS Sheet Size of Channel 25mm x 100mm x 45mm. GUIDE RAILS : The guide rails shall be made out of 28mm Bright bar placed on 1.2 mm thick M.S. Plate which will be above the floor and are as per the international standard of safety. SUPER STRUCTURE : Super structure of the Mobile storage system will consist of knock down type panels. All the components such as shelves, front panel, end panel, vertical rear panel, central partition etc. Will act as an integral member of the Unit. SHELVES : Shelves made of 22SWG thick Prime Quality C.R.C.A. having 10 folds each will be provided each designed to carry a U.D.L. of 70 kgs. VERTICAL PANEL : Vertical panel consists of the front, Centre & rear panel shall be made out of 20SWG thick C.R.C.A. Prime quality Mild Steel & designed to take the load of shelves. DRIVE COVER PANEL : Made out of 22SWG thick C. R.C. A. prime quality Steel to cover the entire drive mechanism. CENTRE PARTITION : The Centre partition will comprise of a full C.R.C.A. prime quality Mild Steel 22SWG Sheet. LOCKING : System will be provided with individual rack locking as well as centralised locking arrangement on the last unit when all units are brought together, central lock when operated gets locked with the floor & does not allow access to the units. DRIVE MECHANISM : Driving Mechanism will be provided externally supported on special grade anti-friction bearing to have smooth & effortless movement. Entire mechanism or gear & sprockets shall be incorporated within the front panel provided in the front of the unit within an area of 1000mm x 200mm x 60mm. DRIVING WHEEL : Fully Powder Coated three pronged drive wheel for better torque & free movement of the rack over the guide rail. INDEXING ARRANGEMENT : Acrylic card holders provided on the front panel for easy identification & retrieval. FINAL FINISH : Powder Coating (8 tanks process with 70 microns).	
ii	**Single Faced Fixed Unit for Compactor 2150mmH x 1830mmW x 457mmD**	

	Providing and fixing Single Faced Fixed Unit for Compactor 2150mmH x 1830mmW x 457mmD - BASE FRAME : Base Frame shall be fabricated in channel Type from minimum 2.5 mm thick MS Sheet Size of Channel 25mm x 100mm x 45mm. GUIDE RAILS : The guide rails shall be made out of 28mm Bright bar placed on 1.2 mm thick M.S. Plate which will be above the floor and are as per the international standard of safety. SUPER STRUCTURE : Super structure of the Mobile storage system will consist of knock down type panels. All the components such as shelves, front panel, end panel, vertical rear panel, central partition etc. Will act as an integral member of the Unit. SHELVES : Shelves made of 22SWG thick Prime Quality C.R.C.A. having 10 folds each will be provided each designed to carry a U.D.L. of 70 kgs. VERTICAL PANEL : Vertical panel consists of the front, Centre & rear panel shall be made out of 20SWG thick C.R.C.A. Prime quality Mild Steel & designed to take the load of shelves. DRIVE COVER PANEL : Made out of 22SWG thick C. R.C. A. prime quality Steel to cover the entire drive mechanism. CENTRE PARTITION : The Centre partition will comprise of a full C.R.C.A. prime quality Mild Steel 22SWG Sheet. LOCKING : System will be provided with individual rack locking as well as centralised locking arrangement on the last unit when all units are brought together, central lock when operated gets locked with the floor & does not allow access to the units. DRIVE MECHANISM : Driving Mechanism will be provided externally supported on special grade anti-friction bearing to have smooth & effortless movement. Entire mechanism or gear & sprockets shall be incorporated within the front panel provided in the front of the unit within an area of 1000mm x 200mm x 60mm. DRIVING WHEEL : Fully Powder Coated three pronged drive wheel for better torque & free movement of the rack over the guide rail. INDEXING ARRANGEMENT : Acrylic card holders provided on the front panel for easy identification & retrieval. FINAL FINISH : Powder Coating (8 tanks process with 70 microns).	
	MISCELLANEOUS	
41.00	Providing and fixing wooden picture frame as per design and drawing made up of 100x50mm first quality seasoned teak wood polished with melamine with 2 or more coats of sanding sealer .	

42.00	Providing and fixing Rollar blinds of make VISTA (Cat No. G-313 & G-314) or equivalent having louvers 100 mm wide of fabric quality dust guard, fixed with GI bracket of minimum thickness 3 mm and head rail of high strength aluminium alloy section size (25 x 47 x 1 mm) thick other accessories like end control unit, tilt rod, bottom chain and weight assembly etc. complete all as per direction of Engineer-in-charge.	
43.00	Providing and fixing in position Tufted Loop pile carpet of make Unitex product name Trump: Ocean or approved equivalent,100% polypropylene, having pile weight 850 gms / sqm (±5%) and Pile thickness 6 mm all complete with an under layer PU foam of required thickness as per the direction of Engineer-in-charge. Carpet to be installed with standard fevicol / Dunlop adhesives.	
44.00	Providing and fixing 50 micron thick Frosted heat /light control film make Garware/ 3M or approved equivalent to window/door glazing in desired pattern all complete.	
	NON SOR B12CIVIL WORKS	
	SANITARY FIXTURES & FITTINGS ESTIMATE	
1.0	Providing and fixing white color vitreous Wall hung European W.C. with CP bolts, nuts, CI brackets, with 'P' or 'S' trap including low level same color glazed concealed dual flushing cistern of 3 / 6 liters capacity , with brass working parts, chrome plated mounting bolts, actuater (push button), angle valve, flush pipe, inlet spud, slip in connector, brass ball valve & PVC floating ball, with brass CP wall cap and CP tubes, same color plastic seat with C.P. Fixtures, like bolts & rubber buffers etc. complete including same color porcelain paper holder for toilet paper roll and CP jet system complete with 15 mm dia CP connection pipe with 15 mm dia CP stop cock complete including cutting and making good the walls and floors wherever required.	
2.0	Providing and fixing of approved make white glazed 550 x 400 mm size counter sunk oval wash basin mounted on CI bracket with 32mm CP brass bottle trap of casted type 32mm CP waste coupling, 32mm medium class GI waste pipe taken upto floor trap in concealed plumbing with the required specials, 1 No. 15mm CP brass **Push type** pillar tap (2.5 LPM), 1 No. 15mm CP brass angular stop cock with wall flange and 1 No. 450 mm long CP copper inlet connecting pipe with end nuts all of approved make etc., complete.	

3.0	Providing and fixing White glazed vitreous chinaware urinal (flat back) with Sensor System With Fuzzy Logic Control Software battery operated mini bardon urinal with rear inlet, concealed C.I. brackets, Heavy duty flexible hose, Inlet Spud T62-16V1, Urinal Sensor (Concealed Type) brass C.P. supply and flushing connections with 1 N0. 15 mm Dia. Brass C.P. angle type stop cock with brass C.P. wall cap, with C.P. waste coupling with 32 mm Dia C.P. bottle traps with C.P. wall caps brass CP cones at inlet and outlets concealed lead pipes drains form bottle trap drain pipes in floor. Joining etc complete.	
4.0	Providing and fixing Low flow PTMT swivelling shower, 15mm nominal bore with Flow rate @ 8.4 LPM, Weighing not less than 40gms	
5.0	15mm dia nominal bore Low flow C.P. brass bib cock of approved quality confirming to IS : 8931 with flow rate @ 8.4 LPM	
6.0	Providing and fixing 15mm dia nominal bore C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms with flow rate @ 8.4 LPM	
7.0	Providing and fixing grab bar 600mm as per approved make. (Utec make TVB - 7632)	
8.0	Providing and fixing C.P. brass twin robe hooks as per approved make.(Utec make UT101)	
	NON SOR ELECTRICAL WORKS	
1.00	**POWER CABLES**	
	P/L/T/C Of 50sq.mm x3.5 core Aluminiun armoured cable.	
2.00	Supply and fixing of recessed mounting type Led light fixture, LED of 1 to 3 W each assembled on single MCPCB, having color temp 6500K & having 50000 burning hrs life with minimum @ L 90, system lumen output should be minimum with efficacy>80lm/W. LED driver, PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Housing made of CRCA with glare free diffused polycarbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer manadatory i/c connection wire, testing etc. to complete the job. 2 Yrs Guarantee certificate from manufacturer. Make :Wipro code:	
i	Led luminiare 1' X 1', 24W , 4-6.5k	
ii	Led luminiare 2' X 2', 36/38W , 4-6.5k	

3.00	Supplying and fixing recessed mounting LED down lighter, LED of 1 to 3 W each assembled on single MCPCB, having color temp 6500K & having 50000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy>80lm/W. LED driver PF 0.95 & THD < 90%. The colour rendering index of LED light should be more than 70. Housing made of CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer manadatory. i/c connection wire, testing etc. to complete the job. 2 Yrs Guarantee certificate from manufacturer. Make :Wipro code : CRDL11RO17HP57 for 17/18 watt and LD71-151-XXX-50-xx(maxi)/LD74-151-XXX-50-xx(maxi) for 15/16 watt or equivilent.	
i	15/16 W, 180/200mm (	
ii	18 W, 180/200mm	
ii	6/8 W, 100/120mm	
ii	Dimmable Ballast for 12w/18w/34-36 watt fixture for dimming the fixture	
iii	Supplying and fixing Circular suspended LED decorative light fixtures with Universal suspention system , LED of having color temp 6500 K & having 50000 burning hrs life with minimum @ L 70,to complete the job. 2 Yrs Guarantee certificate from manufacturer. Make :Wipro code : LM71-341-XXX-40-XX For 17/18 watt and or equivilent.	
	Occupency sensing system	
4.00	S/I/T/C of high performance microwave presence detectors of recces mounting with slide open window confirming to EMC-89/336/EEC & LVD-73/23/EEC with flame retardant ABS body of Wipro,Phillips or equivilent make. modle no - 20010 of wipro Occupancy	
5.00	Providing and fixing podwer coated m.s.raceway in 16 guage including jointer elbow etc. complete with all chase work and making good the surface.	
	Of SZ 150X50MM	
6.00	Providing and fixing podwer coated m.s.Junction box in 16	
	Of SZ 150X150MMX65MM	

	PART-D: Lighting Management System	
1.00	Supply, Testing and Commissioning of pre-assembled processor panel containing processors with configurable links. Ethernet switch. Panel accepts one 220-240V, 1 phase, 2 wire, 6- 10A feed, (10A-1P over-current protection, per circuit, by others. For Combined Lighting management and Shading management system **Approved make : Fibaro,Wipro Lutron**	
2.00	Supply, Testing and Commissioning Lighting control and monitor software, per processor in English, captures floor wise consumption, each event. Approved make : Fibaro,Wipro Lutron	
3.00	Supply, Testing and Commissioning of Power Supply Approved make : Fibaro,Wipro Lutron	
4.00	Supply, Testing and Commissioning of Wireless Occupancy/Vacancy Sensor for rooms with a frequency of 865 MHz, Ceiling mount, infrared, 37.2 sq m (400 sq ft), battery-powered, 102 mm (4.0 in) diameter, white. **Approved make : Fibaro,Wipro Lutron**	
5.00	Supply, Testing and Commissioning of Wireless Daylight Sensor for rooms which works on 865 MHz, ceiling mount, battery-powered, 44 mm (1.6 in) diameter Approved make : Fibaro,Wipro Lutron	
6.00	Supply, Testing and Commissioning of Sensor Module, to connect 10 number of sensors either of the Occupancy / Daylight / Personal sensors/PIco. No wired connections, ceiling mount Approved make : Fibaro,Wipro Lutron	
7.00	Supply, Testing and Commissioning of Eco system/DALI Dimming controller; Controls 2 independent DALI links with up to 64 DALI ballasts per link. 4 groups of sensors inputs: Occ sensor, daylight sensor and IR sensor. Requires mains/line voltage feed **Approved make : Fibaro,Wipro Lutron**	
8.00	Supply, Testing and Commissioning of 0-10 volt dimming module, with 4 corresponding feed through 10 ampere switched outputs.Each 0-10 volt output can source or sink 50ma per output. Includes QS communication link to any QS device . Requires mains/linevoltage feed . **Approved make : Fibaro,Wipro Lutron**	

9.00	Supply, Testing and Commissioning of Switching module, with 4 feed through 10 ampere switched outputs.Should have anbypass contact closure input builtin without connecting any external devices . **Approved make : Fibaro,Wipro Lutron**	
10.00	Supply, Testing and Commissioning of Wireless personlised control Keypad with a WPC approved frequency of 865 Mhz, 2 button +3 button keypad,including single gang faceplate,mounts on glass surfaces also, with guranteed 10 year battery life along with necessary fixing arrangements and programming at site etc, complete as required Approved make : Fibaro,Wipro Lutron	
11.00	Supply, Testing and Commissioning of Wireless personlised control Keypad with a WPC approved frequency of 865 Mhz, 2 button +3 button keypad,including single gang faceplate,mounts on glass surfaces also, with guranteed 10 year battery life along with necessary fixing arrangements and programming at site etc, complete as required **Approved make : Fibaro,Wipro Lutron**	

FIREFIGHTING

LIST OF BUREAU OF INDIAN STANDARD CODES S. No.	I.S. No.	Subject
1.	IS 1239 (Part-I) :1990	Mild steel tubes, tubular and other wrought steel fittings.
2.	IS 3589-2001	Steel pipe for water and sewerage.
3.	IS 5290-1993 (Reaffirmed 1998)	Landing valves specification (Hydrant valve) Third Revision)
4.	IS 13095-1991 (Reaffirmed 2003)	Butterfly valves for General purposes.
5.	IS 5312 (Part-I) 2004	Swing check type reflux. (Non return) valve for water works purposes specification. (Part-1 Single door pattern) (Part-II Multiple door pattern)
6.	IS 636-1988	Non-Percolating flexible fire fighting Delivery hose.
7.	IS 884-1985	First aid hose reed for fire fighting.
8.	IS 12585 (1988)	Specification for thermoplastic mores for water - General Purpose.
9.	IS 904-1983	Specification for 2-way and 3-way suction collecting, heads for fire fighting purposes.

LIST OF APPROVED MAKES

Block Board/Ply	Greenply,Duro,Bhutan Tuff
Laminate	Greenlam /Formica, Decolam, Sundek, Merino, Duro,
Screws	GKW or equivalent
Locks and Latches, Hinges Hardware	Godrej, Secur, Doorset,Haffle
Foam	M.M. Foam, Kool foam or equivalent
Paints	Asian, Nerolac, Berger or equivalent
Mirror	Golden fish, Modi ,ASI
Glass	Saint Gobain, ASI
Adhesives	Vamicol, Fevicol ,Woodgrip or equivalent
Floor Spring / Door closer /Door slidings	Dorma, Ozone ,Everite or equivalent
Texture Paint	Spectrum / Heritage / Unitile / Kamdhenu
Blinds	VISTA / MAC or equivalent

Carpet	Birla Trans Asia or equivalent
Pre-laminated board	Novapan, Bhutan
Aluminium section	Indal, Hindalco ,Ralco
Teak wood	CP teakwood, Burma teakwood
Teak board	Mysore chip boards, Jyoti boards, Bhutan boards
Medium Density Fibre Board	Greenply,Marino,Actiontesa
Flush Door	Greenply/BhutanTuff/Green Flush Door/Kitply/Duroply/Alpro
POP	Jk Laxmi, Birla, Sakarni
Floor Tiles	Kajaria / Nitco / Somani/ Johnson
Wooden Flooring	Vista,cronotex, Green floor max or equivalent
Gypsum Board False Ceiling	Armstrong, Gyproc or equivalent
Accoustic Tile Ceiling	Armstrong, Gyproc or equivalent
Metalic door /Fire rated door	TATA Pravesh,Schott, Saint Gobain, or equivalent
Modular Furniture	Godrej,Geeken,spacewood,Wipro
Metal Tile Ceiling	Armstrong, Gyproc or equivalent
Wooden Ceiling	Armstrong, Gyproc or equivalent
SS Handrail	Kich, dorma, Hilti ,Doorset or equivalent
Insulated Panel	Rinac, Lloyd or equivalent
Cement bonded board	`BISON' by NCL
Non Cementous board	Everest ,Ramco or equivalent
Folding/ movable Acoustic Partition	Dorma
Plumbing Fixtures	Hindware, Parryware, jaguar
Insulated Panel	Rinac, Lloyd or equivalent
cement	L& T,Lafarge,ACC or equivalent

FIRE HYDRENT SYSTEM:	
M.S.Pipes	Zindal,Surya,Tata or equivalent
Pumps	Kirloskar,Mathar & Plast or equivalent
Sprinklers	Tyco ,MCM or equivalent
Hydrent Valves	New Edge,Marshal,Padmini or equivalent
Gun metal Valves	Sant,Kranti,Kartar or equivalent
Nozzels	New Edge, Marshal,Padmini or equivalent
Pressure Switch	Enfoss,Donfoss or equivalent
first -Aid hose reel	New Edge,Marshal,Padmini or equivalent
FIRE FIGHTING	
Fire alarm control panel	Bosch,Honeywell XLS 3000 Searies
Smoke Detector	Bosch,Honeywell XLS 3000 Searies
Powder Detector	Bosch,Honeywell XLS 3000 Searies
OFFICE AUTOMATION SYSTEM	
Processor panel	Fibaro,Wipro, Lutron ,Criston
Control and monitor software	Fibaro,Wipro, Lutron ,Criston
Daylight ,Occupancy/Vacancy Sensor	Fibaro,Wipro, Lutron ,Criston
Dimming controller	Fibaro,Wipro, Lutron ,Criston

ELECTRICAL	
ITEMS	**Approved Make**
EARTHING	ASHLOK/OBO/GEPL
BATTERIES	EXIDE / AMCO / PRESTOLITE / AMARON / GENPRO / STANDARD FURUKAWA / LUCAS / HBL NIFE
Light Fixtures/Fittings	Wipro, Philips, Scott, Figaro
Wire and Cables	Polycab,RR,Havells Schneider
Modular switch/Socket	MK,Honeywell,Anchor,Legrand

SECTION-8

DRAWINGS

(ATTACHED SEPARATELY)

SECTION-9

BILL OF QUANTITY

S.NO	DSR. No	PARTICULARS	Quantity	UNIT	RATE	AMOUNT
		CIVIL &FURNISHING WORK(Flooring)				
1	11.41.3	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.				
		Size of Tile 800x800 mm	773.00		1414.95	1093756.35
2	11.41.4	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.				
		Size of Tile 1000x1000 mm	832.00		2057.85	1712131.20
3	11.51.1	Providing and laying machine cut, mirror polished, Italian Marble stone flooring laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm, including Providing and laying machine cut, mirror polished, Italian Marble stone flooring laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over 20mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm, including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				

		18 mm thick Italian Marble stone slab, Perlato, Rosso verona,Fire Red or Dark Emperadore etc.	94.00	Sqm	5006.10	4,70,573
4	8.11.1	Providing and fixing machine cut, mirror/ eggshell polished , Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.				
		18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	390.00	Sqm	6647.35	2592466.50
5	8.12.1	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :				
		Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	357.00	Sgm	2887.85	1030962.45
		FALSE CEILING:				
		GRID CEILING				

6	26.27.1	Providing and fixing at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance > 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised @80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod upto 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be prepainted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.				
		With 16mm thick bevelrd tegular mineral fibre false ceiling tile (NRC 0.55 to 0.60)	1256.00	Sqm	1535.00	1927960.00

7	12.45.3	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts and bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm or both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with.				

		12.5mm thick tapered edge gypsum moisture resistant board	575.00	Sqm	958.65	551223.75
		PAINTING & FINISHING				
8	DSR 13.83.2	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour: Two coats	400.00	Sqm	71.00	28400.00
9	DSR 13.85.3	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content. With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	400.00	Sqm	36.95	14780.00
10	DSR 13.80	Providing and applying white cement based putty of average thickness 1mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	400.00	sqm	87.35	34940.00

Sub Head-II "NON_SOR_Civil&Furniture"			
S.NO	**PARTICULARS**	**QUANTITY**	**UNIT**
	PART-A: FURNITURE & FURNISHING WORK		
	SENSORED DOOR OPERATING SYSTEM		
1	Providing and fixing Automatic Sliding door operator, compliant with European standards and produced according to the guidelines for power-operated windows, doors and gates, BGR 232, the UVV and the VDE regulations. TÜV design tested for durability of 1 MillionCycles, tested according to the low voltage guidelines, fulfils DIN 18650 standards, for frameless glass door application modular design including internal cover and with 12mm toughened glass for 1 No. sliding door panel and 2 Nos fixed panels .Operator & Frame Finish should be Silver Anodized E6/C0, with operator dimensions (H x D) : 100 x 180 mm and of length as required to suit the opening size given below. Operators shall be with Self balancing Panel suspension system and with Anti-Jump fitting. The track profile should be separate from the main profile for enabling reduction in vibration insulation, With backplate for easy Installation. Microprocessor-controlled control unit, Self-learning, with adjustable parameters for opening and closing speed, hold-open time and opening and closing force, reversing when obstruction is encountered, with SMPS, Class of protection IP 20. Activators- Combination Radars System (02 Nos) on Inside & Outside, Light barriers comprising receiver and transmitter - 01 Pair with, 5 Position Program Switch with Knob. Operator's Max Panel Weight Carrying Capacity of 1 X 120 Kgs/ 2 X 100 Kgs. The system shall have constant power supply 230V± 5%, 50Hz, AC .		

i	Automatic Bi - Parting Panels Frameless Sliding Door Operator for upto 2.1 Mtr(Height) x2.7 Mtr(Width) Opening (Glass Panel Price Included)	2.00	Set
ii	Automatic Bi - Parting Panels frameless Sliding Door Operator for upto 2.1 Mtr(Height) x 1.2/0.90 Mtr(Width) Opening (Glass Panel Price Included)	2.00	Set
iii	Automatic Bi - Parting Panels frameless Sliding Door Operator for upto 2.1 Mtr(Height) x 1.5 Mtr(Width) Opening (Glass Panel Price Included)	1.00	Set
	MANUAL GLASS DOORS		
2	"Design supply and installation of Glazed door with floor spring and standard patch Fittings of SS-304 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass hold t with SS- 304 Grade Stainless steel patch fittings . The rate shall include all design, fittings, labour, hardware such as lock,handle, cutting hole other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener, anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of opening shall be measured."	64.50	Sqm
	POWDER COATED METALIC DOOR		
3	Providing and fixing fectory finished metalic door should have of following specification: (i) **Door shutter construction:**Shutter shall have thickness of 46mm and 1.0/1.2mm thk.(as recommonded by company as per width of shutter)slip coated pre galvanised steel sheet confirming to ASTM A527,JIS G 3302 or BS 2989 1994,IS 277.Zinc coating 80-120 g.m2 on both faces .should have lock formed panel with internal stiffeners of 3mm thk made of GP.3.0mm thk hinge reinforcing,Whole shutter shaould be filled with paper honeycomb of 150gsm . **Door Frame**: Shall confirming to IS 4351:2003,1.2mm thick pre galvanised steel sheet with mitred and welded comes,frame should also have hinge reinforcing plates,fixing plates and hardware mounting plates.Approved make :TATA/Pravesh	42.53	Sqm
4	Providing and fixing fectory finished fire rated metalic door should have of following specification: (i) **Door shutter construction:**Constructed from 0.80mm(22swg)thick skin pass Galvanized iron sheet (Conform to IS 277) formed to provide 46mm fully flushed double skinned door shutter. **Door Frame**: Shall confirming to IS 4351:2003,1.2mm thick skin pass galvanised steel sheet formed to double rebated profile of sz 143x58mm.Vision panel:Fire rated vision glass single glazed with 7.0mm thk clear wired glass. Core Material(infilling:The internal construction of the door is a specially designed fire rated honey comb kraft paper insulation with reinforcement at top ,bottom and stile surrounds. Approved make:TATA/Pravesh	15.00	Sqm
5	**Flushed door** :Providing and fixing ISI marked flush door shutters 30mm thick conforming to IS: 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3mm face veneers on both faces of shutters and including ISI butt hinges and screws.		
i	laminated with 4 mm natural teak veneer duly polished with	17.01	Sqm
	melamine with under coates of sanding sealer		

ii	laminated with 1mm thick designer laminate with combination of charcoal sheet.	7.00	Sqm
	ACOUSTICAL CEILING		
6	Providing and fixing of Glass Fiber Acoustical Suspended Ceiling System with 16mm thick microlook edge tiles of size 595x595mm as approved by Engineer-in-charge, in true horizontal level suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 gsm/sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 15x38mm made from 0.30mm thick (minimum) sheet, spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27x37x25x1.6 x mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4mm GI adjustable rods with galvanised butterfly level clips of size 85x30x0.8 mm spaced at 1200mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications drawings and as directed by Engineer-in-charge.The tiles should have Humidity Resistance (RH) of 99%, NRC 0.5, Light Reflectance ≥83%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Colour White, Fire Performance UK Class 0 / Class 1 (BS 476 pt - 6 and7) in module size of 600 x 600 x 16mm with Bio Block coating on the face of the tile, suitable for Green Building application, with Recycled content of 38 - 41%. The Tile and Grid system used together should carry a 15 year warranty.	186.00	Sqm
7	**WOODEN CEILING**		
	Providing, fabrication, installation of wooden false ceiling in perfect line and level, having base frame made up of 18 mm plywood having width 100 mm and panelled with 12mm thick Plywood laminated with 4mm thick natural Veneer, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, making required opening for fixing of the light fixtures and finishing the veneer surface with melamine polish over two or more coat of sanding sealer, base frame suspended on 18 mm thick plywood sandwiched to form 38 mm X 100 mm members and fixed to soffit with help of screw anchored with rawl plugs of required size, including necessary SS screws, adhesive etc. required for fixing, pasting all complete and direction of Engineer-in-charge.	80.00	Sqm
8	**WALL PANELLING AND PARTITIONS**		

i	**Fabric Acoustic Wall Panelling upto 2.40 Lavel:-** Providing and installation of acoustical wall panelling/partition wood finish Slats made out of HDF board , Melamine / veneer laminated finish, perforated wooden grooved slats (2mm grooves @ 8mm centers) / (2mm Slats @16mm pitch) / (2mm grooves @ 32mm centers) / (2mm grooves @ 64mm centers), backlined with black acoustical fleece, tongue-groove edge for a seamless look, FR grade, of lineal dimension size 128mm x 2440mm x 16mm thick having density 1000Kg /m3, weight 12.8Kgs/m2 installed by using GI strut system. The GI strut system includes GI Cross channel having thickness 0.45mm, length 3600mm, knurled web 40mm, depth 10mm and equal flanges 15mm is fastened vertically/ horizontally at every 600mm centers. Aluminium core cross channel having thickness 0.5mm, length 2400mm, web 15mm and 27mm, depth 18mm and flanges of 7mm with suitable edge and centre brackets is then fixed perpendicular to the cross channel with the help of fasteners at every 400mm centers. Contractor to Provide expansion joints of 3mm at every 5mts bothways.	340	Sqm
ii	Providing & fixing in position panelling for partitions / walls/ columns/ beams etc. with base frame made up of 18 mm thick plywood with two ply sandwitched to give finished 36 mm x 50 mm section and fixed to form 600 mm c/c grid work including extra member at skirting level, providing slots for passing the electrical/ data conduits in the framework as per the requirement, fixing the frame to wall with minimun 100 mm fully threaded SS screws and PVC rawl plug including panelling the frame with 8mm thk plywood laminated with 1mm thick decorative mica , providing grooves of size 8 mm X 4 mm as per drawing on the panelling including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	325.00	Sqm
9	Providing and fixing in position wooden partition (partly glazed) with frame made up of 18 mm thick plywood with two ply sandwitched to give finished 36 mm X 75 mm section and placed at 600mm c/c bothways horizontally and vertically and fixed on floor and soffit with anchore fastener of required size, providing slots for passing the electrical/ data conduits in the framework as per the requirement including panelling the frame on both faces with 8mm thk plywood laminated with 1mm thick designer laminate of approved colour and make, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, fixing 8 mm thick plain galss of required size in the glazed portion of partition with suitable teak wood beading, finishing of beading with malamine polish over two or more coats of sanding sealer including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	115.00	Sqm

10	Providing and fixing in position solid wooden partition with frame made up of 18 mm thick plywood with two ply sandwitched to give finished 36 mm X 75 mm section and placed at 600mm c/c bothways horizontally and vertically and fixed on floor and soffit with anchore fastener of required size, providing slots for passing the electrical/ data conduits in the framework as per the requirement including panelling the frame on both faces with 8mm thk plywood laminated with 1mm thick laminate of approved colour and make, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, finishing all lippings and beading surfaces with spraying coat of melamine polishing over preprepared surface with 2 or more coats of sanding sealer of approved make including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	77.00	Sqm
11	Providing and fixing in position solid wooden low height partition with frame made up of 18 mm thick plywood with two ply sandwitched to give finished 36 mm X 75 mm section and placed at 600mm c/c bothways horizontally and vertically and fixed on floor with anchore fastener of required size, providing slots for passing the electrical/ data conduits in the framework as per the requirement including panelling the frame on both faces with 8mm thk plywood laminated with 1mm thick laminate of approved colour and make, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, providing and fixing 12mm thick High density MDF board moulding on the partition top with 6mm spacer of MDF board to maintain uniform groove of 6 mm and finishing all exposed surfaces with spraying coat of melamine polish over preprepared surface with 2 or more coats of sanding sealer of approved make including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	50.00	Sqm
12	Providing and fixing in position solid wooden partition with frame made up of 18 mm thick ply with two ply sandwitched to give finished 36 mm X 75 mm section and placed at 600mm c/c bothways horizontally and vertically and fixed on floor with anchore fastener of required size, providing slots for passing the electrical/ data conduits in the framework as per the requirement including panelling the frame on both faces with 12mm thk plywood laminated with 1mm thick designer laminate with combination of charcoal sheet/designer MDF board of approved pattern ,colour and make, providing grooves of size 8/4 mm as per drawing on the panelling, providing and fixing 12mm thick High density MDF board moulding on the partition top with 6mm spacer of MDF board to maintain uniform groove of 6 mm and finishing all exposed surfaces with spraying coat of melamine polish over preprepared surface with 2 or more coats of sanding sealer of approved make including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	143.00	Sqm

13	"Design supply and installation of Glazing system , System held with patch Fittings of SS-304 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass with film held together with SS- 304 Grade Stainless steel . The Glass fins and glass panel assembly shall be connected to Slab/beams by means of SS- 316 Grade stainless steel brackets and Anchor bolts , non staining weather sealants of approved make, Teflon/ nylon bushes and separators to prevent bi-metallic contacts, all complete to perform as per specification and approved drawings. The complete system to be designed to accommodate thermal expansion and seismic movements etc. The joints between glass panels (6 to 8 mm) and gaps at the perimeter and in U channel of the assembly to be filled with non staining weather sealant, so as to make the entire system fully water proof and dust proof. The rate shall include all design, Engineering and shop drawing including approval from structural designer, labour, TandP, scaffolding , other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener, anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of Glass panel inside the SS channel shall be measured."	80.53	Sqm
14	Providing and fixing factory made UPVC white colour sliding glazes partition /door comprising of UPVC multi chambered frame with in-built rollar track and sash extruded profile es duly reinforced with 1.6 +0.20 mm thick galvanized mild steel section made from roll forming process of rwquired length (shape and size according to UPVC profile),appropriate dimension uPVC extruded glazing beads, uPVC extruded interlock and uPVC extruded inline sash adaptor(if required), EPDM gasket,wool pile,zinc alloy (white powder coated) handle with key on one side of external panels along with zinc plated mild steel multi poimnt locking having transmission gear with keeps,zinc alloy (white powder coated) cresent lock (if required),stainless steel (SS 304 grade) ,body with adjustable double nylon rollars (weight bearing capacity to be 120 kgs),G.I fastener 100x8mm size for fixing frame to finished wall and necessary stainless steel screws etc.Profile of frame and sash shall be mitred cut and fusion welded at all corners,including drilling of holes for fixing hardware's and drainage of water etc.after fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealent over backer rod of required size and of approved quality .all complete as per approved drawing & direction of Engineer -in -charge		
i	Two track three panel sliding door/partition made of (Big searies) frame 116x45 mm & sash 46x82mm both having wall thickness of 2.3 +2.0 mm and single glazing bead.(Area of door above 2.0 sqm upto 5.0 sqm)	175.00	Sqm
ii	Three track three panel sliding door/partition made of (Big searies) frame 116x45 mm & sash 46x82mm both having wall thickness of 2.3 +2.0 mm and single glazing bead.(Area of door above 2.0 sqm upto 5.0 sqm)	100.00	Sqm
15	**MODULAR PARTITIONS**		
i	**Full Height Partitions in Solid finish**	83.25	Sqm
	83mm Full Height Partition with laminate / fabric / marker / Soft board Finish		

	Partition will have double skin provision for 12mm Thick tiles, Structure material and All Exposed will be Aluminum Anodized finish and the connecting members used for joining False ceiling to Hard Ceiling are CRCA powder coated		
ii	**Full Height Partitions in Single Glass finish**	120.00	Sqm
	Partition will have Single skin provision for 10 mm thick plain toughened glass at Centre. Structure material and All Exposed will be Aluminum Anodized finish and connecting members used for joining False ceiling to Hard Ceiling are CRCA powder coated		
	Rates are inclusive of the toughened glass.		
iii	**Full Height Partitions in Double Glass finish with Horizontal Grid**	32.21	Sqm
	Partition will have double skin provision for 8 mm thick plain toughened glass from Outside and 5 mm thick plain toughened glass from inside. Structure material and All Exposed will be Aluminum Anodized finish and connecting members used for joining False ceiling to Hard Ceiling are CRCA powder coated		
	Rates are inclusive of the toughened glass.		
iv	**Full Height Partitions in Double Glass finish and Horizontal Vanishing Blinds**	47.00	Sqm
	Partition will have double skin provision for 8 mm thick plain toughened glass from out side and 5mm thick plain toughened glass from inside. Structure material and All Exposed will be Aluminum Anodized finish and connecting members used for joining False ceiling to Hard Ceiling are CRCA powder coated. Additional Blinds are provided in between the glasses to provide privacy in the partition. Blinds are operated by the Knobs which will be fitted to the partition from the internal side		
	Rates are inclusive of the toughened glass.		
v	**Glass Doors Frame & Door**	3.00	Nos.
	Door Hardware consist of Floor Spring, Patch fitting , Lock and Handle		
	Size :- 900mm x 2130mm		
	Glass is 12mm Toughened Glass		
vi	**Solid Door Frame & Door with Vision Panel**	3.00	Nos.
	Door frame consisting of Hinges , door closer and lock		
	Size :- 900mm x 2130mm		
	Door panel of 43mm Thick , Internal construction is Block Board with 5mm Prelaminated MDF on both side with a vision panel at eye level		
16	Box Panelling: Providing and fixing in position wooden box panelling with frame made up of 18 mm thick plywood and panelled with 12mm ply wood laminated with 4mm thick natural veneer of approved make and shade, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, finished with spray coat of melamine over pre prepared surface with two or more coat of sanding sealer, making slots for display including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.For payment plan area shall be measured.	252.00	Sqm
	FURNITURE: RACKS AND STORAGES		

17	Providing and fixing in position 450 mm wide wooden display cum show rack made up of 18 mm thick plywood laminated with 4mm thick veneer /designer mica/ 6mm Corian in combination on all the exposed surfaces, finishing all the veneer surfaces with spray coat of melamine polish over 2 or more coats of sanding sealer of approved make including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.	37.00	Sqm
18	Providing and fixing in position wooden storage unit as per design and drawing including shutters of required size made up of 18mm th plywood except at the back side where it shall be 6 mm thick plywood, laminating all the exposed plywood surafaces with 1.0 mm thick decorative laminate of approved colour and shade and 0.8 mm balancing lamination on internal surface, edge banding all the exposed edges such as of shutters/ drawers etc. with 2 mm thick matching PVC edge banding, providing and fixing on shutters auto closing nickel plated steel clip-on-hinges of approved make including mounting plate, providing and fixing nickle plated steel telescopic slider of appropriate capacity and of approved make for the drawers and suitable locking arrangemet with three keys, including providing and fixing on shutters/ drawers SS 304 handles of dia 10 mm and sizei 125/ 150 mm as required including necessary SS screws, adhesive etc. required for fixing, pasting all complete as per direction of Engineer-in-Charge.		
i	Low height up to 1.2 m	27.00	Sqm
ii	Full Height 2.10M	25.00	Sqm
19	Storage(3900x450x1000mm Storage 12 Openable doors storage unit with BSL & all side edge bending in 18 mm thikckness. All in Single Laminate (One Colour)		
i	3500x450x1000mm	5.00	Each
ii	3000x450x1000mm	6.00	Each
iii	2100x450x1000mm	5.00	Each
iv	2100x450x750mm	3.00	Each
v	3000x450x750mm	9.00	Each
	FURNITURE: TABLES		
20	Providing and fixing in position Running staff table as per design and drawing with postformed pre laminated partical board confirming to IS 2380 top,Table shall have all vertical support in partical board and shall be equiped with keyboard trey,CPU trolly ,double raceway for data cable and electrical cable. Note:Table shall have vertical top mounted modesty panel .		
iii	2 Seater SZ 1650 x600x900mm	6.00	Each

21	Providing and fixing Reception Counter of size 2500 x700x 1200 mm made up of 18 mm thick Plywood having corian finished costumer top and fecia of thickness 12 mm and laminated with 4mm thick natural veneer on all the exposed surfaces and 0.80 mm thick laminate on all internal surfaces, providing and fixing edge banding with 2 mm thick PVC strip on all edges, providing grooves of size 8 mm X 4 mm as per drawing on the panelling, providing key-board trays with slides, SS wire managers, etc. as per the drawing and requirement, including providing and fixing shall have 3 nos. drawer units with drawers and shutters below working top as per the drawing, providing and fixing nickle plated steel telescopic slider of approprate capacity approved make for the drawers and suitable locking arrangemet with three keys, including providing and fixing on shutters/ drawers handles of dia 10 mm and size 125/ 150 mm as required and Grade SS 304 including necessary SS screws, adhesive etc. required for fixing, pasting all complete **Approved make:Wipro/Godrej/Geeken/Spacewood**	2.00	Each
22	**EXECUTIVE Table-1 :**Providing and fixing in position table similar to Model name Broadway /Sleel line with the following details and specifications: (i) Main Table: having work top and side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2mm thick edge ba nding and required arrangement for fixing of extension unit. (ii) Extension Unit:of Company standard size having top made up of 25 mm thick MDF laminated with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding. All other specifications, including necessary plinth levelers,Metal frames, cable managers, nails, screws, adhesive etc all complete should be strictly followe as per manufacturer's specification and direction of Engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood or Equivalent.**		
	Sz L2100x 2330x750mm	3.00	Each

23	**EXECUTIVE Table-2 :**Providing and fixing in position table Model name Exclusive/Steel line of size 1800 mm L X 900 mm D X 750 mm H with the following details and specifications: (i) Main Table: having work top made of 65 mm thick MDF laminated with veneer, modesty panel of height 600 mm made up of 16 mm thick MDF laminated with veneer. (ii) Extension Unit:of size 1200 mm W X 445 mm D X 660 mm H having top made up of 25 mm thick MDF laminated with veneer Veneer, modesty panel of size (iii) Pedestal Unit: mobile unit with outer frame having size 510mm x 445 mm x 635 mm (outer) having 3 drawers (pencil, utility and filing) all made up of MDF laminated with veneer on both sides and all edges sealed with 2 mm thick edge banding, drawers fixed with nickle plated steel telescopic sliders of approved make, MS powder coated handles of size 150 mm and a central lock for three drawers, unit provided with castors with front two lockable castors. All the exposed surface coated with PU of hardness 1.5H, including necessary plinth levelers, cable managers, nails, screws, adhesive etc all complete as per manufacturer's specification and direction of Engineerincharge. **Approved make:Wipro/Godrej/Geeken/Spacewood**		
	Sz 1800 x 1750 x 750mm	14.00	Each
24	**OFFICERS** : Supplying and fixing in position table of Model Name Classic/Steel line with the following details and specifications: (i) Main Table: having work top and two side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2mm thick edge banding and required arrangement for fixing of extension unit. (ii) Extension Unit: of size 1050 mm WX 450 mm DX 705 mm H with required arrangement for fixing to the main table and having having work top and one side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2 mm thick edge banding.		
	(iii) Pedestal Unit: mobile unit with outer frame having size 400 mm x 450 mm x 680 mm (outer) and internal 3 drawers (pencil, utility and filing) all made up of18 mm thick plain particle board clad with1 mm thick decorative laminate on both sides and all edges sealed with 2 mm thick edge banding, drawers fixed with nickle plated steel telescopic sliders of approved make, SS 304 handles of size 150 mm and a central lock for three drawers, unit provided with castors with front two lockable castors. including necessary plinth levelers, cable managers, nails, screws, adhesive etc all complete as per manufacturer's specification and direction of Engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood**		
i	Main table of Size 1800WX 900 DX750H	11.00	Each

25	**OFFICERS** : Supplying and fixing in position table of Model Name Numero/Steel line with the following details and specifications: (i) Main Table: having work top and two side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2mm thick edge banding and required arrangement for fixing of extension unit. (ii) Extension Unit: of size 1050 mm WX 450 mm DX 705 mm H with required arrangement for fixing to the main table and having having work top and one side panels of understructure made of 25 mm thick plain particle board clad with 0.6 mm thick post formed laminate and 1 mm thick backing laminate with flat edge duly sealed with 2 mm thick PVC edge banding, having modesty panel made up of 18 mm thick plain particle board clad with 1 mm thick decorative laminate on both side and edges sealed with 2 mm thick edge banding.		
	(iii) Pedestal Unit: mobile unit with outer frame having size 400 mm x 450 mm x 680 mm (outer) and internal 3 drawers (pencil, utility and filing) all made up of18 mm thick plain particle board clad with1 mm thick decorative laminate on both sides and all edges sealed with 2 mm thick edge banding, drawers fixed with nickle plated steel telescopic sliders of approved make, SS 304 handles of size 150 mm and a central lock for three drawers, unit provided with castors with front two lockable castors.Including necessary plinth levelers, cable managers, nails, screws, adhesive etc all complete as per manufacturer's specification and direction of Engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood**		
i	Main table of Size 1650 WX 750 DX750H	4.00	Each
	Numero-7 without side unit		
ii	Main table of Size 1200 WX750 DX750H	7.00	Each
26	**Discussion Table**: Supplying & Fixing in position table of Model Name Boardroom/Steel line overall size 2100 x1200x 750 mm having the top made up of 25 mm thick prelaminated particle board with 2 mm thick PVC edge banding, side panels made up of 25 mm thick prelaminated particle board with 2 mm thick PVC edge banding on sides and 0.8 mm thick PVC edge banding at the bottom, modesty panel made up of 18 mm thick prelaminated particle board with 0.8 mm thick PVC edge banding, Access flap & switch mounting Tray made from matt finished sliver anodised aluminium extrusion and plastic moulded components to facilitate acess of electrical/ data/ voice sockets from the top and 0.8 -1.2 mm powder coated MS sheets respectively having provision for mounting 8 module switch plate all complete as per manufacture's specification and direction of engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood**		
	8 seater 2400x1200x750mm	2.00	Each
	12 seater 3000x1200x750mm	1.00	Each

26	**Conference Table**: Supplying & Fixing in position table of Model Name Boardroom/Steelline or approved equivalent having the top made up of 25 mm thick prelaminated particle board with 2 mm thick PVC edge banding,Top shall be rested on steel frame panelled with uphilstered panel on both the faces flushed with steel frame section. top of table should also havedge Access flap & switch mounting Tray made from matt finished sliver anodised aluminium extrusion and plastic moulded components to facilitate acess of electrical/ data/ voice sockets from the top and 0.8 -1.2 mm powder coated MS sheets respectively having provision for mounting 8 module switch plate all complete as per manufacture's specification and direction of engineer-in-charge. **Approved make:Wipro/Godrej/Geeken/Spacewood**		
	24 seater 7400x4200x750mm	2.00	Each
	15 seater 4500x1500x750mm	1.00	Each
	FURNITURE: WORKSTATION		
28	**Workstation for Computer Lab**: Providing and fixing in position panel based modular linear workstation similar to MAX/STRATUM/Steelline having following specifications: (i) Frames of partition panels which includes horizontal top rails, horizental connector profiles at every division of tiles made up of of aluminium extruded sections and comprise of of two type of sections one having thickness 50-60 mm for back spine panel and 20-25 mm for fin panels, vertical end post to have continuous vertical loacking arrangement for interconnection of two adjacenet panels. Bottom of the partition panel made up of minimum 1 mm thick CRCA steel. (ii) Joinery posts made up of aluminium extruded section provided at the junctions of panels and shall be 2-way, 3-way or 4-way as required having continuous locking arrangement. (iii) Trims provided to cover the exposed edges of the frame made up of aluminium extruded section having flat or curved profilie giving aesthetic look to the frame. (iv) Caps provided to cover the joineries made up of die cast aluminium or hard plastic. (v) Comprehensive wire management system for elecrical and data wires at the top and bottom tile levels, having provision to take wires from side walls at both the levels, provision of cutouts for mounting of switches at any level, separate slots for passage of data and elecrical wires, concealed conduits for verical passage of wires etc.		
	(vi) Top rails, end post, joineries, trims made out of aluminium and frame bottom all are duly epoxy powder coated having thickness 50-60 microns. (vii)Table top of width 600 mm, fixed at height of 750 mm from the ground level and made up of 25 mm thickplain particle board laminated with 0.6 mm laminate and 0.8 mm thick balancing laminate at the bottom, top having front edge to be postformed and all other edges to be covered with 2 mm thick PVC laminate. (viii) table top provided with circular holes as per requirement to ficilatate wire connections and covered with modular wire manager made in ABS.		

	(ix) Tiles for main spine panel: The bottom tile shall be press fitted on the panel frame using snap-on-clips made of nylon 66, and provided with laminates on either side with 8 mm thick particle board laminated with 0.6 mm high pressure laminateon outer side and 0.6 mm backing lamiante on inner side and having all its edges with 0.5 mm PVC edging. The Intermediate block shall be provided with 3 mm thick MDF with 0.6 mm laminate on both sides over the paper honeycomb of required thickness. Top tile shall be provided on either side with 8 mm thick particle borad upholstered with fabric using adhesive on both sides. (x) Tiles for fin panel:The bottom and inetrmediate tiles shall be provided with 16 mm thick particle board laminated with 0.6 mm high pressure laminateon both sides and having all its edges with 0.5 mm PVC edging.Top tile provided with18 mm thick plain particle board upholstered with fabric using adhesive. (xi) Mid partitions below table top shall be made up of 25 mm thick plain particle board laminted with 1 mm thick decorative laminate on both sides and edges sealed with 2 mm thick PVC edge banding. including all necessary accessories like plinth leveler, clips etc. and materials like screws, adhesive etc. all complete as per direction of engineer-in-charge.		
	Approved make:Wipro/Godrej/Geeken/Spacewood		
i	3 Seater Size 2250 x 600 x 900 mm	3.00	Set
29	**Workstation for Office** : Providing and fixing in position panel based modular pentagonal (concave curved inner junction) workstation similar to MAX/STRATUM/Steelline of size 1500/ 900 mm (L) X 600 mm (D) X 1200/ 900 mm (H) and of approved make having following specifications: (i) Frames of partition panels which includes horizontal top rails, horizental connector profiles at every division of tiles made up of of aluminium extruded sections and comprise of sections having thickness 50-60 mm for spine and fin panels, vertical end post to have continuous loacking arrangement for interconnection of two adjacenet panels, (ii) Joinery posts made up of aluminium extruded section provided at the junctions of panels and shall be 2-way, 3-way or 4-way as required having continuous locking arrangement. (iii) Trims provided to cover the exposed edges of the frame made up of aluminium extruded section having flat or curved profilie giving aesthetic look to the frame. (iv) Caps provided to cover the joineries made up of die cast aluminium or hard plastic. (v) Comprehensive wire management system for elecrical and data wires by providing raceway at two levels one just below the table top and other at skirting level, both covered with aluminium extruded plates form both sides and snap fitted with aluminium extruded raceway clip, raceway panel having provision for mounting and punching switch & socket plates and socket plates		

	(vi) Top rails, end post, joineries and raceway panels made out of aluminium all are duly epoxy powder coated having thickness 50 microns. (vii)Table top of pentagonal shape and of width 600 mm, fixed at height of 750 mm from the ground level and made up of 25 mm thick plain particle board laminated with 1 mm thick decorative laminate and 0.8 mm thick balancing laminate at the bottom and all other edges to be covered with 2 mm thick PVC laminate. (viii) table top provided with circular holes as per requirement to ficilatate wire connections and covered with modular wire manager made in ABS. (ix) The bottom block 1st and 3rd tiles (from the bottom) of the spine panel of length 1500 mm and height 1200 mm provided with 9 mm thick decorative prelaminated particle board of approved shade on both side pased on the particle board batten frame, 2nd tile provided with racwway and 4th i.e. the top panel povided with split tile having half length with whiteboard tile and balance half with tackable fabric tile. The whiteboard tile made of 8 mm thick particle board laminated with 0.6 mm high pressure white laminate on outer side and 0.6 mm backing laminate on inside having all the edges provided with 0.5 mm PVC edging.		
	(x) Fin Panel of length 600 mm and height 1200 mm is to be provided with tiles having the same detailing as above the top, inetrmediate and bottom tiles of fin panel of length 900 mm and height 900 mm provided with 18 mm thick decorative prelaminated board. (xi) Mid partitions, if required, made up of Gable ends and mid partitiof as per design and drawing with p mm thickplain particle board laminted with 1 mm thick decorative laminate on both sides and edges sealed with 2 mm thick PVC edge banding. including all necessary accessories like plinth leveler, clips etc. and materials like screws, adhesive etc. all complete as per direction of engineer-in-charge.		
	Manufacturing, supplying and placing in position of the 60mm Thick Panel Based (Startum/MAX/Steelline). 1500X1500X1050mm Height. Partition is made of 60mm thick aluminum frames in the main as well as return spine finished with 2mm Thick PVC Edge band. Worktop is supported upon Top Patti and 60mm Dia Round Pole Leg . Worktop height 750mm from ground level.		
i	Complete corner set including partition of sz 1500 X 1500x1200 mm.	54.00	Each
ii	Center set including front partition of sz 1500 X 600x1200 mm.	8.00	Each
30	Providing and installation of following accessories for work stations:		
	Mobile Pedestal unit made of 18mm thick PLPB-with D Type handle & Lock hettich make. All the Item will be as per manufacturer's specifications, drawings & direction of Engineer in charge. The Products should be tested as per BIFMA standards. The Product should have ISO-9001:2000 and ISO 14001-2004 certifications.The boards used should meet international standards of quality and safety, as per EN 312, type P II, E2 and Indian standards IS 3087, grade II.Should meet stringent norms of bending strength, screw-withdrawal strength and modulus of elasticity .		
i	Mobile Pedestal W400XD450XH680mm	56.00	Each

ii	25mm thick Gable End (W590 X H725mm)	36.00	Each
iii	Laminated Keyboard	56.00	Each
iv	Laminated CPU Trolley	56.00	Each
v	Plain Glass Divider (W590 H430)	39.00	Each
	Approved make:Wipro/Godrej/Geeken/Spacewood		
31	**Center Table:** Providing and fixing in position center table as per design and drawing made up of 18mm thick Plywood with 12mm th. toughen glass top and laminated with 1.0 mm thick decorative laminate of desired shadeand 0.8 mm thick balancing lamination on the internal surface, edge banding all the external edges with 2 mm thick matching PVC strip, table top shall be supported on 1" high s.s.studds and whole table shall rest on 2" high nickel plated legs as per direction of Engineer-in-Charge.		
i	SZ 1200X1200X450MM	6.00	Each
ii	SZ 600X1200X450MM	10.00	Each
31	**Corner Table:** Providing and fixing in position center table as per design and drawing made up of 18mm thick Plywood with 12mm th. toughen glass top and laminated with 1.0 mm thick decorative laminate of desired shadeand 0.8 mm thick balancing lamination on the internal surface, edge banding all the external edges with 2 mm thick matching PVC strip, table top shall be supported on 1" high s.s.studds and whole table shall rest on 2" high nickel plated legs as per direction of Engineer-in-Charge.		
	SZ :600x600x400MM	12.00	Each
	FURNITURE: CHAIRS & SOFA		
32	**Executive Chair-1 (High Back)**: Supplying and installing High back chair Model mint-1, ergonomically designed for contoured lumber support for extra comfort having seat made up of insert moulded polyurethane foam of density 75 +/- 4kg/m3 upholstered with foam laminated mesh fabric assembled over plastic seat cover, the back made up of two pieces injection moulded frame with the inner frame upholstered with mesh fabric and mounted on the main assembly, the armrest top made up of injection moulded polyurethane and mounted on the injection moulded height adjustable type armrest with height adjustable up to 45 +- 5 mm, synchronised pivot mechanism of 360 degree revolving type and having tilt with 3-position locking anti-shock feature, pneumatic height adjustment of 90 mm, neck rest assembly mounted on top of back made up of polyurethane foam upholstered with foam laminated mesh fabric and having vertical adjustment up to 45 mm & angular adjustment of 30 degrees, the pedestal made up of Die-cast Aluminium fitted with 5 No's twin wheel castors which aer injection moulded in Black PP all complete as per manufacturer's specification and direction of Engineer-in-charge. **Approved make :Wipro/Godrej/Geeken/Spacewood**	3.00	Each
32(i)	All specifications as per above but non revolving Visitor chair similer to Mint-3	9.00	Each

33	**Executive Chair-2 (High Back)**: Supplying and installing High back chair Model Leoma, make Godrej or equivalent, ergonomically designed for contoured lumber support for extra comfort having seat made up of insert moulded polyurethane foam of density 75 +/- 4kg/m3 upholstered with foam laminated mesh fabric assembled over plastic seat cover, the back made up of two pieces injection moulded frame with the inner frame upholstered with mesh fabric and mounted on the main assembly, the armrest top made up of injection moulded polyurethane and mounted on the injection moulded height adjustable type armrest with height adjustable up to 45 +- 5 mm, synchronised pivot mechanism of 360 degree revolving type and having tilt with 3-position locking anti-shock feature, pneumatic height adjustment of 90 mm, neck rest assembly mounted on top of back made up of polyurethane foam upholstered with foam laminated mesh fabric and having vertical adjustment up to 45 mm & angular adjustment of 30 degrees, the pedestal made up of Die-cast Aluminium fitted with 5 No's twin wheel castors which aer injection moulded in Black PP all complete as per manufacturer's specification and direction of Engineer-in-charge.	12.00	Each
33(i)	Visitor chair all as above Model Mint-2	36.00	Each
34	**Officer chair-2 (mid Back):** Supplying and installing Mid back chair Model Name Alpha-1 , make Geeken/Scott/Godrej or equivalent, ergonomically designed for contoured lumber support for extra comfort having seat made up of insert moulded polyurethane foam of density 75 +/- 4kg/m3 upholstered with foam laminated mesh fabric assembled over plastic seat cover, the back made up of two pieces injection moulded frame with the inner frame upholstered with mesh fabric and mounted on the main assembly, the armrest top made up of injection moulded polyurethane and mounted on the injection moulded height adjustable type armrest with height adjustable up to 45 +- 5 mm, synchronised pivot mechanism of 360 degree revolving type and having tilt with 3-position locking anti-shock feature, pneumatic height adjustment of 90 mm, the pedestal made up of Die-cast Aluminium fitted with 5 No's twin wheel castors which aer injection moulded in Black PP all complete as per manufacturer's specification and direction of Engineer-in-charge.	12.00	Each
34(i)	Visitor chair all as above Model Alpha-4	24.00	Each
35	**Staff chair-(mid Back):** Supplying and installing Mid back chair Model Name Sleek-13/Sleek-2 Leoma, make Geeken/Scott/Godrej or equivalent, ergonomically designed for contoured lumber support for extra comfort having seat made up of insert moulded polyurethane foam of density 75 +/- 4kg/m3 upholstered with foam laminated mesh fabric assembled over plastic seat cover, the back made up of two pieces injection moulded frame with the inner frame upholstered with mesh fabric and mounted on the main assembly, the armrest top made up of injection moulded polyurethane and mounted on the injection moulded height adjustable type armrest with height adjustable up to 45 +- 5 mm, synchronised pivot mechanism of 360 degree revolving type and having tilt with 3-position locking anti-shock feature, pneumatic height adjustment of 90 mm, the pedestal made up of Die-cast Aluminium fitted with 5 No's twin wheel castors which aer injection moulded in Black PP all complete as per manufacturer's specification and direction of Engineer-in-charge.	68.00	Each

36	**Conference/ Discussion room chair**: Supplying and fixing Mid back chair Model Name Astra-6 or make Geeken/Scott/Godrej approved equivalent ergonomically designed for contoured lumber support for extra comfort having the seat and back made up of 12 mm thick hot pressed plywood upholstered with synthetic leather and moulded Polyurenthane Foan with density = 45+/-2 kg/m3, the armrest is made of moulded polyurethane and mounted on to a fixed type chrome plated M.S tubular armrest support and having a vertical adjustment of 15 mm. the synchronised pivot mechanism of 360 degree revolving type and having tilt with 4-position locking anti-shock feature, pneumatic height adjustment of 90 mm, the pedestal fabricated with 2 mm HR sheet, chrome plated and assembled with injection moulded black polypropylene hub cap and fitted with 5 No's twin wheel castors which aer injection moulded in Black Nylon all complete as per manufacturer's specification and direction of Engineer-in-charge.	97.00	Each
37	Supplying and installing Medium Back chair Model No. GW 705 make Geeken or approved equivalent ergonomically designed for proper lumber support having seat made up of 12 mm thick hot pressed moulded plywood and upholstered with fabric of approved colour and shade filled with PU foam of density for seat 45 +/- 2 kg/cum and back 32 kg/cum, polyproplyen shell behind the seat and back, PP armrests with chrome plated metal base, pneumatic gas lift, push back body contact mechanism with seat and back are arrested together for motion on central pivot, metal powder coated pedestal with Nylon twin wheel casters 5 nos. in star pattern all complete as per manufacturer's specification and direction of Engineer-in-charge.	10.00	Each
38	SOFA: Supplying and installing Sofa of Make Geeken Model name Flemingo or equivalent having specification as under: Upholstery : PVC Frame Material : Tropical Solid Wood joined by means of hardened steel screws and steel bolts, as well as glue. Seat Foam : Slab stock foam along with recron sheet. Foam Density : 17 kg/ cubic cm. Back Foam : Slab stock foam with recron fill. Foam Density : 17 kg/cubic cm Webbing : S-spring with cross menbrane Inner frame basic structure: made of wooden and commercial ply 12 mm thick frame seat fome use 40kg/m3 in back 32kg/m3 leatherite 1mm+- 0.1 mm upholstery and leg stainless steel 202 grade flate size 90X10mm thick and pvc shoe is used in the bottom of the frame. Providing and placing sofa inner frame , basic structure made of wooden and commercial ply 12 mm thick frame seat fome use 40kg/m3 in back 32kg/m3 leatherite 1mm+- 0.1 mm upholstery with woodan leg		
i	2 Seater 1780 mm (L) X 800 mm (D) X 725 mm (H)	12.00	Each
ii	1 Seater 900 mm (L) X 800 mm (D) X 725 mm (H)	5.00	Each

39	SOFA: Supplying and installing Sofa of Make Geeken Model name **"Aura"** or equivalent having specification as under: Upholstery : PVC Frame Material : Tropical Solid Wood joined by means of hardened steel screws and steel bolts, as well as glue. Seat Foam : Slab stock foam along with recron sheet. Foam Density : 17 kg/ cubic cm. Back Foam : Slab stock foam with recron fill. Foam Density : 17 kg/cubic cm Webbing : S-spring with cross menbrane Inner frame basic structure: made of wooden and commercial ply 12 mm thick frame seat fome use 40kg/m3 in back 32kg/m3 leatherite 1mm+- 0.1 mm upholstery and leg stainless steel 202 grade flate size 90X10mm thick and pvc shoe is used in the bottom of the frame. Providing and placing sofa inner frame , basic structure made of wooden and commercial ply 12 mm thick frame seat fome use 40kg/m3 in back 32kg/m3 leatherite 1mm+- 0.1 mm upholstery with S.S. legs		
i	3 Seater :2110(L) 965(D) 825 (H)	9.00	Each
ii	2 Seater 1510 (L) 965(D) 825 (H)	28.00	Each
iii	1 Seater 920 (L) 965 (D) 825 (H)	7.00	Each
	COMPACTOR'S		
40	**Double Faced Mobile Unit for Compactor 2150mmH x 1830mmW x 900mmD**		

	Providing and fixing Double Faced Mobile Unit for Compactor 2150mmH x 1830mmW x 900mmD - BASE FRAME : Base Frame shall be fabricated in channel Type from minimum 2.5 mm thick MS Sheet Size of Channel 25mm x 100mm x 45mm. GUIDE RAILS : The guide rails shall be made out of 28mm Bright bar placed on 1.2 mm thick M.S. Plate which will be above the floor and are as per the international standard of safety. SUPER STRUCTURE : Super structure of the Mobile storage system will consist of knock down type panels. All the components such as shelves, front panel, end panel, vertical rear panel, central partition etc. Will act as an integral member of the Unit. SHELVES : Shelves made of 22SWG thick Prime Quality C.R.C.A. having 10 folds each will be provided each designed to carry a U.D.L. of 70 kgs. VERTICAL PANEL : Vertical panel consists of the front, Centre & rear panel shall be made out of 20SWG thick C.R.C.A. Prime quality Mild Steel & designed to take the load of shelves. DRIVE COVER PANEL : Made out of 22SWG thick C. R.C. A. prime quality Steel to cover the entire drive mechanism. CENTRE PARTITION : The Centre partition will comprise of a full C.R.C.A. prime quality Mild Steel 22SWG Sheet. LOCKING : System will be provided with individual rack locking as well as centralised locking arrangement on the last unit when all units are brought together, central lock when operated gets locked with the floor & does not allow access to the units. DRIVE MECHANISM : Driving Mechanism will be provided externally supported on special grade anti-friction bearing to have smooth & effortless movement. Entire mechanism or gear & sprockets shall be incorporated within the front panel provided in the front of the unit within an area of 1000mm x 200mm x 60mm. DRIVING WHEEL : Fully Powder Coated three pronged drive wheel for better torque & free movement of the rack over the guide rail. INDEXING ARRANGEMENT : Acrylic card holders provided on the front panel for easy identification & retrieval. FINAL FINISH : Powder Coating (8 tanks process with 70 microns).	5.00	Nos
i	**Single Faced Mobile Unit for Compactor 2150mmH x 1830mmW x 457mmD**		

	Providing and fixing Single Faced Mobile Unit for Compactor 2150mmH x 1830mmW x 457mmD - BASE FRAME : Base Frame shall be fabricated in channel Type from minimum 2.5 mm thick MS Sheet Size of Channel 25mm x 100mm x 45mm. GUIDE RAILS : The guide rails shall be made out of 28mm Bright bar placed on 1.2 mm thick M.S. Plate which will be above the floor and are as per the international standard of safety. SUPER STRUCTURE : Super structure of the Mobile storage system will consist of knock down type panels. All the components such as shelves, front panel, end panel, vertical rear panel, central partition etc. Will act as an integral member of the Unit. SHELVES : Shelves made of 22SWG thick Prime Quality C.R.C.A. having 10 folds each will be provided each designed to carry a U.D.L. of 70 kgs. VERTICAL PANEL : Vertical panel consists of the front, Centre & rear panel shall be made out of 20SWG thick C.R.C.A. Prime quality Mild Steel & designed to take the load of shelves. DRIVE COVER PANEL : Made out of 22SWG thick C. R.C. A. prime quality Steel to cover the entire drive mechanism. CENTRE PARTITION : The Centre partition will comprise of a full C.R.C.A. prime quality Mild Steel 22SWG Sheet. LOCKING : System will be provided with individual rack locking as well as centralised locking arrangement on the last unit when all units are brought together, central lock when operated gets locked with the floor & does not allow access to the units. DRIVE MECHANISM : Driving Mechanism will be provided externally supported on special grade anti-friction bearing to have smooth & effortless movement. Entire mechanism or gear & sprockets shall be incorporated within the front panel provided in the front of the unit within an area of 1000mm x 200mm x 60mm. DRIVING WHEEL : Fully Powder Coated three pronged drive wheel for better torque & free movement of the rack over the guide rail. INDEXING ARRANGEMENT : Acrylic card holders provided on the front panel for easy identification & retrieval. FINAL FINISH : Powder Coating (8 tanks process with 70 microns).	1.00	Nos.
ii	**Single Faced Fixed Unit for Compactor 2150mmH x 1830mmW x 457mmD**		
	Providing and fixing Single Faced Fixed Unit for Compactor 2150mmH x 1830mmW x 457mmD - BASE FRAME : Base Frame shall be fabricated in channel Type from minimum 2.5 mm thick MS Sheet Size of Channel 25mm x 100mm x 45mm. GUIDE RAILS : The guide rails shall be made out of 28mm Bright bar placed on 1.2 mm thick M.S. Plate which will be above the floor and are as per the international standard of safety. SUPER STRUCTURE : Super structure of the Mobile storage system will consist of knock down type panels. All the components such as shelves, front panel, end panel, vertical rear panel, central partition etc. Will act as an integral member of the Unit. SHELVES : Shelves made of 22SWG thick Prime Quality C.R.C.A. having 10 folds each will be provided each designed to carry a U.D.L. of 70 kgs. VERTICAL PANEL : Vertical panel consists of the front, Centre & rear panel shall be made out of 20SWG thick C.R.C.A. Prime quality Mild Steel & designed to take the load of shelves. DRIVE COVER PANEL : Made out of 22SWG thick C. R.C. A. prime quality Steel to cover the entire drive mechanism. CENTRE PARTITION : The Centre partition will comprise of a full C.R.C.A. prime quality Mild Steel 22SWG Sheet. LOCKING : System will be	1.00	Nos.

	provided with individual rack locking as well as centralised locking arrangement on the last unit when all units are brought together, central lock when operated gets locked with the floor & does not allow access to the units. DRIVE MECHANISM : Driving Mechanism will be provided externally supported on special grade anti-friction bearing to have smooth & effortless movement. Entire mechanism or gear & sprockets shall be incorporated within the front panel provided in the front of the unit within an area of 1000mm x 200mm x 60mm. DRIVING WHEEL : Fully Powder Coated three pronged drive wheel for better torque & free movement of the rack over the guide rail. INDEXING ARRANGEMENT : Acrylic card holders provided on the front panel for easy identification & retrieval. FINAL FINISH : Powder Coating (8 tanks process with 70 microns).		
	MISCELLANEOUS		
41	Providing and fixing wooden picture frame as per design and drawing made up of 100x50mm first quality seasoned teak wood polished with melamine with 2 or more coats of sanding sealer .	4.00	Each
42	Providing and fixing Rollar blinds of make VISTA (Cat No. G-313 & G-314) or equivalent having louvers 100 mm wide of fabric quality dust guard, fixed with GI bracket of minimum thickness 3 mm and head rail of high strength aluminium alloy section size (25 x 47 x 1 mm) thick other accessories like end control unit, tilt rod, bottom chain and weight assembly etc. complete all as per direction of Engineer-in-charge.	609.00	Sqm
43	Providing and fixing in position Tufted Loop pile carpet of make Unitex product name Trump: Ocean or approved equivalent,100% polypropylene, having pile weight 850 gms / sqm (±5%) and Pile thickness 6 mm all complete with an under layer PU foam of required thickness as per the direction of Engineer-in-charge. Carpet to be installed with standard fevicol / Dunlop adhesives.	120.00	Sqm
44	Providing and fixing 50 micron thick Frosted heat /light control film make Garware/ 3M or approved equivalent to window/door glazing in desired pattern all complete.	350.00	Sqm
	PART -B:CIVIL WORKS		
	SANITARY FIXTURES & FITTINGS ESTIMATE		
1	Providing and fixing white color vitreous Wall hung European W.C. with CP bolts, nuts, CI brackets, with 'P' or 'S' trap including low level same color glazed concealed dual flushing cistern of 3 / 6 liters capacity , with brass working parts, chrome plated mounting bolts, actuater (push button), angle valve, flush pipe, inlet spud, slip in connector, brass ball valve & PVC floating ball, with brass CP wall cap and CP tubes, same color plastic seat with C.P. Fixtures, like bolts & rubber buffers etc. complete including same color porcelain paper holder for toilet paper roll and CP jet system complete with 15 mm dia CP connection pipe with 15 mm dia CP stop cock complete including cutting and making good the walls and floors wherever required.	12.00	Nos.

2	Providing and fixing of approved make white glazed 550 x 400 mm size counter sunk oval wash basin mounted on CI bracket with 32mm CP brass bottle trap of casted type 32mm CP waste coupling, 32mm medium class GI waste pipe taken upto floor trap in concealed plumbing with the required specials, 1 No. 15mm CP brass **Push type** pillar tap (2.5 LPM), 1 No. 15mm CP brass angular stop cock with wall flange and 1 No. 450 mm long CP copper inlet connecting pipe with end nuts all of approved make etc., complete.	12.00	Nos.
3	Providing and fixing White glazed vitreous chinaware urinal (flat back) with Sensor System With Fuzzy Logic Control Software battery operated mini bardon urinal with rear inlet, concealed C.I. brackets, Heavy duty flexible hose, Inlet Spud T62-16V1, Urinal Sensor (Concealed Type) brass C.P. supply and flushing connections with 1 N0. 15 mm Dia. Brass C.P. angle type stop cock with brass C.P. wall cap, with C.P. waste coupling with 32 mm Dia C.P. bottle traps with C.P. wall caps brass CP cones at inlet and outlets concealed lead pipes drains form bottle trap drain pipes in floor. Joining etc complete.	10.00	Nos.
4	Providing and fixing Low flow PTMT swivelling shower, 15mm nominal bore with Flow rate @ 8.4 LPM, Weighing not less than 40gms	4.00	Nos.
5	15mm dia nominal bore Low flow C.P. brass bib cock of approved quality confirming to IS : 8931 with flow rate @ 8.4 LPM	12.00	Nos.
6	Providing and fixing 15mm dia nominal bore C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms with flow rate @ 8.4 LPM	12.00	Nos.
7	Providing and fixing grab bar 600mm as per approved make. (Utec make TVB - 7632)	2.00	Nos.
8	Providing and fixing C.P. brass twin robe hooks as per approved make.(Utec make UT101)	12.00	Nos.

S.no	DSR item no.	Description	Quantity	Unit	Rate	Amount
		ELECTRICAL WORKS				
1.00	1.3	Wiring for light point/ fan point/ exhaust fan point/ call bell point with1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required.				
iii	1.3.3	Group C	381.00	Point	1037.00	395097.00

2.00	1.7	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
	1.7.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	3054.00	meter	206.00	629124.00
	1.7.4	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	871.00	meter	324.00	282204.00
	1.7.10	4 X 10 sq. mm + 2 X 6 sq. mm earth wire	663.00	meter	653.00	432939.00
	1.7.11	4 X 16 sq. mm + 2 X 6 sq. mm earth wire	490.00	meter	930.00	455700.00
3.00	1.20	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
	1.20.1	20 mm	17.00	meter	126.00	2142.00
	1.20.2	25mm	20.00	meter	147.00	2940.00
	1.20.3	32 mm	26.00	meter	198.00	5148.00
	1.20.4	40 mm	22.00	meter	293.00	6446.00
3.00	1.21	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
	1.21.2	25 mm	298.00	Metre	69.00	20562.00
4.00	1.24	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
	1.24.1	5/6 A switch	699.00	Each	84.00	58716.00
	1.24.4	3 pin 5/6 A socket outlet	390.00	Each	81.00	31590.00
	1.24.5	6 pin 15/16 A socket outlet	363.00	Each	153.00	55539.00
5.00	1.27	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc as required.				
	1.27.4	6 Module (200mm X 75mm)	11.00	Each	258.00	2838.00
	1.27.5	8 Module (125mm X 125mm)	107.00	Each	297.00	31779.00
	1.27.6	12 Module (200mm X 150mm)	23.00	Each	344.00	7912.00
		Distribution board (D.B.'S)				

9.00	2.4	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)			.	
	2.4.3	8 way (4 + 24), Double door	10.00	Each	3171.00	31710.00
		A.C.DB:				
10.00	2.5	Supplying and fixing of following ways surface/ recess mounting,vertical type, 415 V, TPN MCB distribution board of sheet steel,dust protected, duly powder painted, inclusive of 200 A, tinnedcopper bus bar, common neutral link, earth bar, din bar formounting MCBs (but without MCBs and incomer) asrequired.(Note : Vertical type MCB TPDB is normally used where 3 phaseoutlets are required.)				
	2.5.3	12 way (4 + 36), Double door	4.00	Each	7189.00	28756.00
11.00	2.1	Providing and fixing following capacity TP&N disconnector fuse switch unit inside the existing panel board with ISI marked fuses including drilling holes in connections, etc. as required.cubicle panel, making				
	2.1.2	63 A, TP&N	10.00	Each	2110.00	21100.00
12.00	2.2	Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.				
	2.2.3	150 A, 16 kA,TPMCCB	8.00	Each	4096.00	32768.00
13.00	2.10	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, “C” curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	2.10.1	Single pole	240.00	Each	173.00	41520.00
	2.10.4	Triple pole	48.00	Each	700.00	33600.00

15.00	4.1	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than17.5%, in convenient sections, joined with connectors,suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc. as required.				
	4.1.2	150 mm width X 50 mm depth X 1.6 mm thickness	60.00	Metre	393.00	23580.00
	4.1.3	225 mm width X 50 mm depth X 1.6 mm thickness	45.00	Metre	460.00	20700.00
	4.1.4	300 mm width X 50 mm depth X 1.6 mm thickness	46.00	Metre	526.00	24196.00
16.00	5.6	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	2.00	Set	8289.00	16578.00
17.00	5.14	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	45.00	Metre	698.00	31410.00
18.00	5.15	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	63.00	Metre	129.00	8127.00
		FireFighting				
19.00	1.21.2	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
		25 mm	1100.00	Metre	69.00	75900.00
		Total				2810621.00

Sub Head- IV "Electrical_NON_SOR"			
S.no	**Description**	**Quantity**	**Unit**
	RACEWAY WORKS		
1.0	Providing and fixing powder coated m.s.raceway in 16 guage including jointer elbow etc. complete with all chase work and making good the surface.		
	Of SZ 150X50MM	370.00	Metre
2.0	Providing and fixing powder coated m.s.Junction box in 16		
	Of SZ 150X150MMX65MM	80.00	Metre

	ELECTRICAL WORKS		
1.0	**POWER CABLES**		
	P/L/T/C Of 50sq.mm x3.5 core Aluminiun armoured cable.	370.00	Metre
2.0	Supply and fixing of recessed mounting type Led light fixture, LED of 1 to 3 W each assembled on single MCPCB, having color temp 6500K & having 50000 burning hrs life with minimum @ L 90, system lumen output should be minimum with efficacy>80lm/W. LED driver, PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Housing made of CRCA with glare free diffused polycarbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer manadatory i/c connection wire, testing etc. to complete the job. 2 Yrs Guarantee certificate from manufacturer. Make :Wipro code:		
i	Led luminiare 1' X 1', 24W , 4-6.5k	22.00	Each
ii	Led luminiare 2' X 2', 36/38W , 4-6.5k	169.00	Each
3.0	Supplying and fixing recessed mounting LED down lighter, LED of 1 to 3 W each assembled on single MCPCB, having color temp 6500K & having 50000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy>80lm/W. LED driver PF 0.95 & THD < 90%. The colour rendering index of LED light should be more than 70. Housing made of CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer manadatory. i/c connection wire, testing etc. to complete the job. 2 Yrs Guarantee certificate from manufacturer. Make :Wipro code : CRDL11RO17HP57 for 17/18 watt and LD71-151-XXX-50-xx(maxi)/LD74-151-XXX-50-xx(maxi) for 15/16 watt or equivilent.		
i	15/16 W, 180/200mm (	47.00	Each
ii	18 W, 180/200mm	94.00	Each
ii	6/8 W, 100/120mm	100.00	Each
ii	Dimmable Ballast for 12w/18w/34-36 watt fixture for dimming the fixture	40.00	Each
iii	Supplying and fixing Circular suspended LED decorative light fixtures with Universal suspention system , LED of having color temp 6500 K & having 50000 burning hrs life with minimum @ L 70,to complete the job. 2 Yrs Guarantee certificate from manufacturer. Make :Wipro code : LM71-341-XXX-40-XX For 17/18 watt and or equivilent.	18.00	Each
	Occupency sensing system		

4.0	S/I/T/C of high performance microwave presence detectors of recces mounting with slide open window confirming to EMC-89/336/EEC & LVD-73/23/EEC with flame retardant ABS body of Wipro,Phillips or equivilent make. modle no - 20010 of wipro Occupancy	20.00	each
5.0	Providing and fixing podwer coated m.s.raceway in 16 guage including jointer elbow etc. complete with all chase work and making good the surface.		
	Of SZ 150X50MM	370.00	Metre
6.0	Providing and fixing podwer coated m.s.Junction box in 16		
	Of SZ 150X150MMX65MM	80.00	Metre
	Lighting Management System		
1.0	Supply, Testing and Commissioning of pre-assembled processor panel containing processors with configurable links. Ethernet switch. Panel accepts one 220-240V, 1 phase, 2 wire, 6- 10A feed, (10A-1P over-current protection, per circuit, by others. For Combined Lighting management and Shading management system **Approved make : Fibaro,Wipro Lutron**	1.00	nos
2.0	Supply, Testing and Commissioning Lighting control and monitor software, per processor in English, captures floor wise consumption, each event. Approved make : Fibaro,Wipro Lutron	1.00	nos
3.0	Supply, Testing and Commissioning of Power Supply Approved make : Fibaro,Wipro Lutron	1.00	nos
4.0	Supply, Testing and Commissioning of Wireless Occupancy/Vacancy Sensor for rooms with a frequency of 865 MHz, Ceiling mount, infrared, 37.2 sq m (400 sq ft), battery-powered, 102 mm (4.0 in) diameter, white. **Approved make : Fibaro,Wipro Lutron**	103.00	nos
5.0	Supply, Testing and Commissioning of Wireless Daylight Sensor for rooms which works on 865 MHz, ceiling mount, battery-powered, 44 mm (1.6 in) diameter Approved make : Fibaro,Wipro Lutron	3.00	nos
6.0	Supply, Testing and Commissioning of Sensor Module, to connect 10 number of sensors either of the Occupancy / Daylight / Personal sensors/PIco. No wired connections, ceiling mount Approved make : Fibaro,Wipro Lutron	16.00	nos

7.0	Supply, Testing and Commissioning of Eco system/DALI Dimming controller; Controls 2 independent DALI links with up to 64 DALI ballasts per link. 4 groups of sensors inputs: Occ sensor, daylight sensor and IR sensor. Requires mains/line voltage feed **Approved make : Fibaro,Wipro Lutron**	5.00	nos
8.0	Supply, Testing and Commissioning of 0-10 volt dimming module, with 4 corresponding feed through 10 ampere switched outputs.Each 0-10 volt output can source or sink 50ma per output. Includes QS communication link to any QS device . Requires mains/linevoltage feed . **Approved make : Fibaro,Wipro Lutron**	2.00	nos
9.0	Supply, Testing and Commissioning of Switching module, with 4 feed through 10 ampere switched outputs.Should have anbypass contact closure input builtin without connecting any external devices . **Approved make : Fibaro,Wipro Lutron**	6.00	nos
10.0	Supply, Testing and Commissioning of Wireless personlised control Keypad with a WPC approved frequency of 865 Mhz, 2 button +3 button keypad,including single gang faceplate,mounts on glass surfaces also, with guranteed 10 year battery life along with necessary fixing arrangements and programming at site etc, complete as required Approved make : Fibaro,Wipro Lutron	70.00	nos
11.0	Supply, Testing and Commissioning of Wireless personlised control Keypad with a WPC approved frequency of 865 Mhz, 2 button +3 button keypad,including single gang faceplate,mounts on glass surfaces also, with guranteed 10 year battery life along with necessary fixing arrangements and programming at site etc, complete as required **Approved make : Fibaro,Wipro Lutron**	2.00	nos
12.0	Local Enclosures for the Modules	4.00	nos
13.0	Commisisoning and Programming	1.00	nos
	FireFighting		
14.0	Providing & Laying of shielded and stranded 2X1.5 sq. mm. PVC insulated copper conductor armoured cable on surface / recessed complete as required.	2400.00	Per mtr
15.0	Providing & laying of 2X1.5 sq mm Copper cable ISI with saddles & all accessories complete in all respect	600.00	Per mtr

Sub Head- V " FireFighting MPPWD SOR"					
SOR item no.	**Item Description**	**Unit**	**Qty**	**Rate**	**Amount**
1 (S.O.R. No. - 43.C.A.2)	Supply Installation,Testing & Commissioning of 4 Loop Microprocessor based intelligent and electronically Addressable, modular, with networking card & printer port - loops Panel (epandable) with loop capacity of 159 detectors Fire Alarm Control Panel with 5.7 inch touch screen LCD display, multiple access levels, 10,000 event history logs in the non volatile memory (EEPROM). The panel shall be modular microprocessor based in nature and should be expanded from single loop to up to 32 loops. The panel shall have 240V AC power supply, Automatic Battery Charger, 24V, sealed lead acid maintenance free batteries sufficient for 24 hours normal working and then be capable of operating the system for 30 mints. during emergency condition. Provision for integration to BMS Back net software.The panel shall be EN54 / UL certification.	Each	2	471900.00	943800.00
2) (S.O.R. No. -43.C.A.7)	Supply, Installation, testing & Commissioning of addressable– Automatic Dual LED smoke detector with two integrated light-scattering smoke sensors using LEDs with different colors/wavelengths (blue/infrared) to avoid False alarm & should comply to Test Fire 1, Inbuilt Isolator, Automatic addressing. Shall be UL /EN54 certified.	Each	70	6287.00	440090.00
	Above False Ceiling				
3) (S.O.R. No. -43.C.A.7)	Supply, Installation, testing & Commissioning of addressable– Automatic Dual LED smoke detector with two integrated light-scattering smoke sensors using LEDs with different colors/wavelengths (blue/infrared) to avoid False alarm & should comply to Test Fire 1, Inbuilt Isolator, Automatic addressing. Shall be UL /EN54 certified	Each	70	6287.00	440090.00

4) (S.O.R. No. - 43.C.A.8)	Supply, Installation, testing & Commissioning of addressable - Automatic Dual LED Muli Detector with two integrated light-scattering smoke sensors using LEDs with different colors / wavelengths (blue / infrared) to avoid False alarm & with Thermal sensor, Inbuilr Isolator, Automatic addressing. Shall be UL / EN54 certified.	Each	70	8152.00	570640.00
5) (S.O.R. No. - 43.C.A.19)	Supply, installation, testing & commissioning of Response Indicator shall be UL / EN 54	Each	100	145.00	14500.00
6 (S.O.R. No. - 43.C.A.11)	Supply, Installation & Commissioning of Outdoor addressable manual break glass unit (Double action) with inbuilt isolators, with flexible network structures & necessary fixing arrangements with key complete as required. Shall be UL / EN54 certified.	Each	8	10926.00	87408.00
7 (S.O.R. No. - 43.C.A.12)	Supply, Installation, Tesing and Commissioning of Indoor Stand alone Loop Powered detector base sounder with inbuilt isolators & with 32 different tone variants selection options & adjustable sound pressure by 5 levels, the sound pressure 92.1 dB(A). Shall be UL / EN54 certified.	Each	8	8878.00	71024.00
8 (S.O.R. No. - 43.C.A.16)	Providing & Fixing of Addressable Control Relay Module with inbuilt isolators & with flexible network structures with a maximum switching current of 1 A @ 30V DC. Shall be UL / EN54 certified.	Each	12	18150.00	217800.00
9 (S.O.R. No. - 43.C.A.18)	Providing & Fixing of 1 Output + 1 Input Interface Module with inbuilt isolator. Shall be UL / EN54 certified.	Each	8	20570.00	164560.00

Sub Head- VI " Fire Hydrant MPPWD SOR"						
S.NO.	S.O.R. No.	ITEM	QTY.	UNIT	RATE	AMOUNT
1	26.1.2	Providing laying, testing and commissioning of class 'C' heavy duty MS pipe confirming to IS 1239/3589 underground including fittings like elbows, tees, flanges, tapers, jointing with nut bolts, gaskets and welding, etc. underground i/c excavation and providing cement concrete blocks as supports at prescribed intervals and anti-corrosive treatment with coaltar / asphalt tape as per IS:10221, with 4mm thick fiber reinforced tape and 12mm overlap and refilling the trench etc. of following size complete as directed by Engineer-in-charge				
		150mm dia	140	Mtr	2230.00	312200.00
2		Providing laying, testing and commissioning of class 'C' heavy duty MS pipe confirming to IS 1239 / 3589 including fittings like elbows, tees, flanges, reducers, jointing with nuts bolts, gasket and welding , etc. and fixing the pipe on the wall/ceiling with suitable hangers, clamps, supports as required and painting with two or more coats of synthetic enamel paint of required shade complete as directed by Engineer-in-charge				
a)	26.2.2	150mm dia	320	Mtr	1915.00	612800.00
b)	26.2.3	100mm dia	140	Mtr	1328.00	185920.00
c)	26.2.4	80mm dia	60	Mtr	920.00	55200.00
d)	26.2.7	40mm dia	120	Mtr	440.00	52800.00
e)	26.2.8	32mm dia	120	Mtr	390.00	46800.00
e)	26.2.9	25mm dia	130	Mtr	310.00	40300.00
3	26.3	Supplying and fixing single headed internal hydrant valve with instaneous Gun metal couplings of required dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blank gunmetal cap and chain, adaptors as required complete as directed by Engineer-in-charge				
a)	26.3.1	63mm dia	8	each	6700.00	53600.00

4	26.6	Supplying, fixing, testing and commissioning of butterfly valve PN 1.6, with Bronze/Gunmetal seat duly ISI marked complete with Nuts, Bolts, washers, gaskets, confirming to IS 13095, of following sizes as required.				
a)	26.6.2	150 mm dia	16	each	6815.00	109040.00
b)	26.6.3	100mm dia	8	each	4500.00	36000.00
c)	26.6.4	80 mm dia	12	each	3400.00	40800.00
5	26.8	Providing, installation, testing and commissioning of dual plate non-return valve of following sizes confirming to IS 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.				
a)	26.8.2	150 mm dia	4	each	7350.00	29400.00
b)	26.8.3	100 mm dia	4	each	4900.00	19600.00
6	26.10	Providing, installation, testing and commissioning of gun metal valves of following sizes as required.				
a)	26.10.5	25 mm dia	12	each	810.00	9720.00
7	26.11	Providing and fixing following dia, 15 mtr long RRL hose pipe with following dia male and female gun metal couplings duly binded with GI wire, rivets etc. confirming to IS 636 (type-A) as required.				
a)	26.11.2	63 mm dia	8	each	4950.00	39600.00
8	26.12	Providing and fixing first -Aid hose reel with MS construction spray painted in post office red, confirming to IS 884 with upto date amendments, complete with the following as required. (a) 30/36 long 20mm (nominal internal) dia water hose thermoplastic (textile reinforced) type -2 as per IS 12585. (b) 20mm (nominal internal) dia gun metal globe valve and nozzle. (c) Drum and brakets for fixing the equipments on wall. (d) Connections from riser with 40 mm dia stop valve (gun metal) and M.S. pipe	4	each	8570.00	34280.00
9	26.14	Providing and fixing hose cabinet of size 700mmx 600mmx 300mm made of 16 guage thick MS sheet with 4 mm thick float glass doors infront painted FIRE in red paint i/c necessary locking arrangement suitable to accommodate internal hydrant with butterfly valve 2 nos. 15 mtr. Long hose pipe, 1 no.branch pipe mounted on wall or raised brick platform and duly painted with Post Office Red eternally and white internally with synthetic enamel paint complete in all respect for internal hydrant, as directed by Engineer-in-charge.	4	each	4000.00	16000.00

10	26.15	Providing and fixing 63mm gun metal branch pipe with 20 mm (nominal internal diameter) size gun metal nozzle conforming to IS 903, suitable for instaneous connection to interconnect hose pipe coupling as required.	8	each	2510.00	20080.00
11	26.17	Providing and fixing 2 way fire brigade connection (FBC) of CI body with 2 nos. gun metal male instantaneous inlet couplings complete with cap and chain as required. For 150mm dia MS pipe connection, confirming to IS 904 as required.	2	each	6000.00	12000.00
12	26.18	Providing and fixing air vessel made of 250 mm dia, 8mm thick MS sheet, 1200 mm. in height with air release valve on top and flanged connection to riser, drain arrangement with 25mm dia gun metal wheel valve, with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required.	2	each	10150.00	20300.00
13	26.19	Providing fixing testing and commissioning of 15 mm size quartzoid bulb type sprinklers (set to operate at 68 / 79 degree Centigrade. Pendant type / upright type / side wall type with required accessories as directed by Engineer-in-charge.	240	each	415.00	99600.00
14	26.21	Providing and installation of adjustable Rosette plate for Sprinkler as per direction of Engineer-in-charge.	240	each	110.00	26400.00
15	26.23	Providing and fixing Pressure switch in the MS pipe Line including connection etc. as required.	6	each	1485.00	8910.00
		TOTAL				**1881350.00**