

TENDER FOR PROPOSED CIVIL, INTERIOR FURNISHING ,FIRE FIGHTING,
ELECTRICAL & HVAC WORK
FOR GIDB Office, 8th & 9th Floor at Udyog Bhavan, Gandhinagar

Gujarat Infrastructure Development Board,
Block No 18, 8th Floor,
Udyog Bhavan, Sector 11,
Gandhinagar 382017,

TENDER FOR PROPOSED CIVIL, INTERIOR FURNISHING ,FIRE FIGHTING,
ELECTRICAL & HVAC WORK
FOR GIDB Office, 8th & 9th Floor

[A] Important Dates:

Sr. no.	Particulars	Timeline
1	Tender Issuance Date	19-11-2024
2	Last Date of written request for clarifications before the Pre-bid Meeting	29-11-2024 Email- smadmn-gidb@gujarat.gov.in
3	Pre-bid Meeting & Venue details	<ul style="list-style-type: none">○ Pre-bid meeting will be held at GIDB Office on 03-12-2024 at 15.00 hours.○ Bidder to submit maximum two participant's names, contact numbers, designations and e-mail IDs on smadmn-gidb@gujarat.gov.in at least one day before the scheduled pre-bid meeting date. Mentioning RFP name as subject.
4	Last Date & Place for Submission of Tender (Closing Date)	05:00 PM on 17-12-2024 Mode: Physical Technical bid by courier to GIDB Office Gujarat Infrastructure Development Board (GIDB), Block no. 18, 8 th Floor, Udyog Bhavan, Sector- 11, Gandhinagar – 382017
5	Online submission	05.00 PM on 17-12-2024 Mode: Online e-Tender URL: https://tender.nprocure.com
6	Duration of work	5 Months after issuance of Work Order
7	Eligibility Cum Technical Bid Opening Date	05:30 PM on 17-12-2024 Mode: Online <ol style="list-style-type: none">1. URL: https://tender.nprocure.com The meeting will be held at GIDB Office.2. Bidders are requested to send bid submission confirmation with their email address for attending bid opening meeting on smadmn-gidb@gujarat.gov.in after Tender submission time is over
8	Commercial Bid	The commercial bids of only those Bidders who qualify in both eligibility and technical evaluation will be opened. The date for opening of the commercial bid would be communicated separately to the technically eligible Bidders.
9	Application Money	Rs. 5,000/-

10	Bid Security (Earnest Money Deposit)	Rs. 1,00,000/- (Rupees One Lakh only)
11	Mode of bid submission & online portal's URL	Online Tender URL: https://tender.nprocure.com
12	Support details of Online Portal facilitator	<ul style="list-style-type: none"> • For helpdesk, please contact e-Tendering Cell and Help Desk Support • Mr. Jwalesh Zaveri, • Mr. Hemant Patel • Monday to Friday Ph.: 079 23232701/704 • e mail : smadm-n-gidb@gujarat.gov.in
13	Contact Details of Project Architect	M/s Sarjan Architects & Project Consultants Email- sarjanarch.pc@gmail.com Phone : 0261-2476778, 2460834
14	Contact details Officials	<ol style="list-style-type: none"> 1. Mr. Jwalesh Zaveri, Senior Manager(Administration) 2. Mr. Hemant Patel, Manager (Administration)

NOTICE INVITING TENDER

To,
M/s. _____

TENDER FOR PROPOSED CIVIL, INTERIOR FURNISHING, FIRE FIGHTING, ELECTRICAL & HVAC WORK FOR GIDB 8th & 9th Floor

GIDB Invites E-Tender from experienced contractors for **PROPOSED CIVIL, INTERIOR FURNISHING, FIRE FIGHTING, ELECTRICAL & HVAC WORK FOR GIDB 8th & 9th Floor**

Contractors desirous to apply for said work shall fulfill the following:

Sl. No.	Name of Work	Estimated cost in ₹ (approx.)
1.	PROPOSED CIVIL, INTERIOR FURNISHING, FIRE FIGHTING, ELECTRICAL & HVAC WORK FOR <u>GIDB 8th & 9th Floor</u>	4.50 Crores

Minimum pre-qualifying/short listing criterion:

1. They should have completed similar jobs* in last 5 (five) years (as on 31-10-2024) as per the following criteria (Proforma enclosed) :
 - a) One similar completed work costing not less than ₹ 4.00 crores

*(*similar jobs include civil, Furnishing, Electrical, Fire Fighting, PA & HVAC work of commercial buildings for Govt. Sector, PSU.*

- 2. Average annual financial turnover of the firm during last 3 years, ending 31st March, 2024 should be at least ₹ 3.00 crores (supported with Audited Balance Sheets).**
- 3. The bidding contractor or sub-contractor (In case of composite tenders) shall possess valid electrical license and should submit the same along with technical bid failing which their tender is liable for disqualification.**

Validity of offer shall be 180 days from the date of opening of Price Bid. Authority may extend the validity of tender with consent of bidders.

Financial Bids of eligible bidders qualifying as per above eligibility criteria shall be opened only. Date of opening of financial bids shall be communicated separately. The Authority does not bind itself to accept the lowest or any tender and reserves the right to accept or reject any or all tenders either in whole or in part, without assigning any reasons whatsoever.

No conditional offer will be entertained. Conditional offers shall be summarily rejected. Disputes, if any, will be subject to Gandhinagar jurisdiction only.

In case of any clarification you may please contact following officials:

Mr. Jwalesh Zaveri, Senior Manager (Administration)

Email: smadmngidb@gujarat.gov.in

The Authority has engaged M/s Sarjan Architects & Project Consultants for providing architectural consultancy services for the project. His contact details are as under:

Name- Ar. Vikram Dalal

Mob-9879604444, 9879604404

Email- sarjanarch.pc@gmail.com

Bidders desirous of visiting the project site can do so from 19-11-2024 to 26-22-204 during working hours.

Address of site is as under:

Gujarat Infrastructure Development Board (GIDB), Bock No 18, 8th Floor, Udhog Bhavan, Sector 11, Gandhinagar 382010

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

Seal & Signature of Tenderer

SECTION – II

MANDATORY INFORMATION FOR PRE-QUALIFICATION

ANNEXURE -A

Mandatory information required for Prequalification of the bidder

(To be submitted online on e-tender website)

Important:

1. Attach copies of the supporting documents.
2. Please use additional sheets if required.

1	a) Name of the applicant / organization b) Address of the Registered Office c) Address of office at Gujarat (With Phone no's, Fax no's & Email ID & Contact Person)	
2	Year of establishment	
3	Type of the organization (Whether sole proprietorship, Partnership, Private Ltd. or Ltd. Co. etc.) (Enclose certified copies of documents as evidence)	
4	Name & qualification of the Proprietor / Partners / Directors of the Organization / Firm a) b) c) Enclose certified copies of document as evidence.	
5	Details of registration – Whether Partnership firm, Company, etc. Name of Registering Authority, Date and Registration number. Enclose certified copies of document as evidence	
6	Whether registered with Government / Semi – Government / Municipal Authorities of any other Public Organization and if so, in which class and since when? (Enclose certified copies of document as evidence)	
7	a. No. of years of experience in the field and details of work in any other field. b. Whether ISO certified, furnish the details.	
8	Area of business activities other than construction, if any, and place of business.	

9	Registration of firm under Shop & Establishment Act 1948	
10	<u>Address of Gujarat office through which the proposed work of the GIDB will be handled and the Name & Designation of officer-in-charge.</u>	
11	(a) Yearly turnover of the organization during last 3 years(year wise) (Avg. turnover of last 3 years should not be less than ₹ 3.00 crores) and furnish audited balance sheet and Profit & Loss A/c (Audited) for the last –3- years. (b) Average turnover in 2021-2022 2022-2023 2023-2024	
12	Name & Address of Bankers (Solvency certificate not older then 1 year (Min amount Rs 1.00 crore) from a Bank to be enclosed for indicating satisfactory financial capacity of the organization)	1. 2. 3.
13	Enclose copy of latest income tax clearance certificate.	
14	PAN No.	
15	Details of registration for GST	
16	Detailed description and value of works done (Proforma-1)and works on hand (Proforma-2) Attach Work Completion certificate	
17	Details of Key Personnel Permanently employed (Proforma – 3)	
18	Other infrastructural information to be used/ referred for this project (Proforma-4) List of available plants, machineries equipments etc.	
19	Furnish the names of –3- responsible persons along with their designation, address, Tel. No. etc., for whose organization,you have completed the above mentioned jobs and who will be in a position to certify about the performance of your Organization.	
20	Whether any Civil Suit / litigation arisen in contracts executed / being executed during the last 10 years. If yes, please furnish the name of the project, employer, Nature of work, Contract value, work order and brief details of litigation. Give name of court, place, and status of pending litigation.	

21	Information relating to whether any litigation is pending before any Arbitrator for adjudication of any litigation or else any litigation was disposed of during the last ten years by an arbitrator. If so, the details of such litigation are required to be submitted.	
22	Have you been ever disqualified or levied penalty by the authority in past for non-fulfillment of the contractual obligations. If yes, please provide details.	Attach a separate sheet if required.
23	Details of valid Electrical License of the bidder / sub-contractor (name of the contractor / sub-contractor, contact number, electrical license number, validity, class, etc.) along with copy of valid electrical license.	

NOTE: Attach extra sheets with Sr. No if the space found less.

(Please enclose this information in PART I (Technical Bid) of the Bid. Bid of agencies who are not furnishing above information will be summarily rejected).

PROFORMA – 1**LIST OF PROJECTS EXECUTED BY THE ORGANISATION DURING THE LAST 5 YEARS SIMILAR JOB (UPTO COSTLAC)****Notes:**

Sr. No	Name of work/ project with address.	Name & full postal address of the owner. Specify	Contract Amount (Rs.)	Stipulated time of completion (Years)	Actual time of completion (years)	Any other relevant information. Actual amount of the Project, if increased, give reasons.	Enclose clients certificate for satisfactory completion
1	2	3	4	5	6	7	8

1. Information has to be filled up specifically in this format.
2. Date shall be reckoned from the date of advertisement of the notice in newspapers.
3. For certificates, the issuing authority shall not be less than an Executive In charge.

PROFORMA - 2**LIST OF IMPORTANT WORKS IN HAND SIMILAR JOB (UPTO COSTLAC)**

Sr. No	Name of work/ project with address.	Name & full postal address of the owner. Specify whether Govt. undertaking along with name, address and contact nos. of –2- persons (Engineers or top officials of the organization)	Contract Amount (Rs.) with copy of Work Order & completion certificate from project in- charge.	Stipulated time of Completion (Years)	Present status of the project	Any other relevant Information.
1	2	3	4	5	6	7

Note:-

Information has to be filled up specifically in this format.

Please do not write remark "As indicated in Brochure".

PROFORMA - 3

Details of Infrastructure in Office.

(Please enclose this information in the PART I (technical bid) of the bid. Bid of agencies who are not furnishing above information will be summarily rejected).

Sr. No.	Items	Numbers	Details
1	Office Premises, Area, etc.		
2	Telephones		
3	Other instruments		
4	Software used for planning.		
5	Reference books used		
6	Subscription to magazines,		
7	Any other information		

I/We confirm that to the best of our knowledge this information is authentic and accept that any deliberate concealment will amount to disqualification by the authority at any stage

PLACE :

DATE : ___/___/2024

SIGNATURE OF BIDDER & Co's seal

To,

Gujarat Infrastructure Development Board (GIDB)
Block No 18, 8th Floor,
Udhyog Bhavan, Sector 11,
Gandhinagar 382010.

SECTION -III FORM OF TENDER

Dear Sirs,

Re: **TENDER FOR PROPOSED CIVIL, INTERIOR FURNISHING ,FIRE FIGHTING,
ELECTRICAL & HVAC WORK FOR GIDB 8th & 9th Floor**

Having visited the site ,examined the plans/ specifications and schedule of quantities, and satisfying ourselves as to various conditions stated, I/we hereby offer to execute the above works at the respective rates which I/we have quoted for the items in the Schedule of Quantities.

I/ we enclose copy of proof for Earnest Money Deposit payment for Rs. 1,00,000/- towards Earnest Money deposit for the execution of the works at my/ our tendered rates, together with any variations at later stage, should the work be awarded to me/ us.

In the event of this tender being accepted, I/we agree to enter into and execute the necessary contract required by you. I/ We do hereby bind myself/ourselves to forfeit the aforesaid deposit of **Rs. 1,00,000/-** in the event of our refusal or delay in signing the Contract Agreement. I/we further agree to execute and complete the work within the time frame stipulated in the tender documents.

I/we agree to pay GST and all other applicable taxes prevailing and be levied from time to time on such items for which the same are livable and the rates quoted by me/us are inclusive of the same.

I/we understand that you are not bound to accept the lowest tender or bound to assign any reasons for rejecting our tender. I/we further understand that GIDB may award Contracts to more than one Contractor and that I/ we shall make no claims whatsoever if GIDB accept only a part of my/ our tender. We unconditionally agree to GIDB's preconditions as stipulated in the tender documents.

In case of breach of contract, GIDB reserves the right to terminate our contract and forfeit the Earnest money deposit paid by us in additions to recovery of all the dues to the authority from the payment receivable by us. Further we may also be barred from tendering in future for the authority and its subsidiaries.

Any Commercial discloser in the Envelope No. 1 will disqualify me/ us without any further scrutiny. I/we enclose herewith the completed tender documents duly signed in duplicate.

Yours truly

Place:

Date:

[B] Important Clarifications:

Following terms are used in the document interchangeably to mean:

1. Recipient, Respondent, Bidder, service provider, means the respondent to the RFP document
2. RFP means the Request For Proposal document
3. Proposal, Bid means "Response to the RFP Document"
4. Support means Support & Services to be provided as part of the Scope of Work
5. SLA means Service level Agreement

Please note:

- I. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- II. The *beneficial owner* for the purpose of (iii) above will be as under:
 1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.
 2. Explanation—
 - a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent, of shares or capital or profits of the company;
 - b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
 3. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
 4. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
 5. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
 6. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
- III. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- IV. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

TENDER FOR PROPOSED CIVIL, INTERIOR FURNISHING, FIRE FIGHTING,
ELECTRICAL & HVAC WORK FOR GIDB 8th & 9th Floor.

APPENDIX TO FORM OF OFFER - ANNEXURE 1

Ref.: to Clauses in conditions herein before referred to

Sr. No.	Description of Work:	<u>TENDER FOR PROPOSED CIVIL, INTERIOR FURNISHING ,FIRE FIGHTING, ELECTRICAL & HVAC WORK FOR GIDB 8th & 9th, Udyog Bhavan, Gandhinagar</u>
1.	Name of Employer	Gujarat Infrastructure Development Board
2.	Time allowed for execution of work	5 Months
3.	Cost of Tender Document	Rs.5,000/-
4.	Validity of the Tender	6 Months from the date of submission / as may be extended
5	Period of Commencement	7 days from the date of work order or the date of instruction for taking possession of site, whichever is later.
6	Amount of liquidated damages for delay.	1 % of the Contract value per week subject to maximum of 10% of contract value.
7	Defects liability period.	12 months from the date of virtual completion certificate issued by Architect/GIDB. Other guarantee/warranty etc. shall be as per tender terms and conditions.
8	Security Deposit	The security deposit shall be an amount equivalent to 5% of the accepted tender amount. The security deposit shall include EMD, ISD and retention Money. SD - 5% of accepted value including EMD Retention Money - 8% from each interim bill (Subject to balance amount of total security deposit i.e. 5% of accepted value) 50 % of the security deposit shall be released on issue of virtual completion certificate and removal of materials, site clearance etc. from site. Remaining 50% shall be released 14 days after the end of satisfactory completion of defects liability period.
9	Interval of interim bills.	As per minimum bill amount
10	Minimum Gross Amount of Interim Bill	Rs. 90 Lakh
11	Period of certification of interim bills by Architect	15 working days after submission of Bill along with measurement sheets by Contractor
12	Period of certification of final bills by Architect.	30 working days after submission of Bill along with measurement sheets & "as built" drawings by Contractor.
13	Time within which payment to be made after certificate.	75% of the net payment to be released within -7- working days from date of receipt of Architect's certificate along with R.A. Bill Certificate (Annexure-I) jointly signed by (Contractor and Architect and Bills, Measurement Sheet/M.B. Balance 25% to be released after -15- working days

		from date of receipt of Architect's certificate and R.A. Bill certificate jointly signed by Contractor, Architect and GIDB's Engineer. No interest is payable on any delayed payment in any circumstances by GIDB whatsoever reason.
14	Performance Guarantee (Bank Guarantee)	Performance Guarantee: 5% of Contract Amount to be submitted as Bank Guarantee within 11 days of receipt of Letter of Award (valid up to completion period of the contract/extended period if permitted). No extra charge is payable on extension of BG by GIDB. This Performance Guarantee shall be refunded within 21 days of the issue of Virtual completion Certificate (Taking Over Certificate with a list of Defects) as per tender terms and conditions.
15	Escalation for Material & Labour & work	No escalation/PVA is applicable. The Rates will be remain firm till handing over the site/completion from date of commencement of work.
16	Release of Total Security Deposit(EMD, ISD & Retention Money) :-	"50% of the Total Security Deposit (EMD ,ISD & Retention Money) shall be refunded to the contractor on": i) Issue of Virtual Completion Certificate by the Architects as per tender terms & condition ii) Contractor's removal of his materials, equipment, labour force, temporary sheds/ stores etc. from the site, (excepting for a small presence required if any for the Defect Liability Period and approved by the authority.).The remaining 50% of the amount shall be refunded 21 (twenty one) days after the end of defects liability period provided he has satisfactorily carried out all the works and attended to all defects in accordance with the conditions of the contract, including site clearance.
17	Insurance	CAR Policy (Contractor's All Risk) (in joint name with GIDB as the first party) within 11 days of receipt of Letter of Award (valid up to completion period of the contract/extended period if permitted).Details of Policies is given in annexure. No extra charge is payable on extension of Insurance by GIDB.
18	Test certificate/reports of materials & Mix Design	Contractor has to submit: i) Satisfactory Test certificates/reports (as per relevant IS code)of materials (including cement, coarse aggregates, fine aggregates, steel etc. of makes mentioned in tender) are to be used at site have to be submitted to our office from a reputed (govt./govt. university) authorized testing lab before its utilization/consumption at site. ii) all other test/manufacturer's certificates are to be submitted as per tender terms and conditions. Failing which, Authority may take strict action as per tender terms & condition.

1. Project overview and scope of work

This Request for Proposal (RFP) document has been prepared solely for the purpose of enabling GIDB to select a Bidder for providing Tender for Proposed tender for proposed civil, interior furnishing , fire fighting, electrical & hvac work for GIDB 8th & 9th floor Office.

Now GIDB in process for proposed tender for proposed civil, interior furnishing, fire fighting, electrical & hvac work for GIDB 8th & 9th floor Office.

For this purpose, GIDB invites proposal from Bidders who are interested in participating in this RFP who fulfill the eligibility criteria mentioned under Annexure- A and also in a position to fulfill the requirement as mentioned in Project Scope Annexure B. Apart from the above, the Bidder must also agree to all our terms & conditions mentioned under this RFP.

The detail scope of work is mentioned in the annexure B. However, GIDB reserve the right to modify/ change the scope of work at any phase of this contract.

2. Contract period

The GIDB shall enter in to an agreement with the selected bidder for a period till completion of project which may be extended with mutual consent. In case of warranty /AMC of any services the agreement deemed extended the last delivered services or support to be provided whichever is later from the date of placing purchase order. The contract will be deemed completed only when all the services contracted by the GIDB are provided and implemented along with the associated documentation provided to GIDB; as per the requirements of the contract executed between the GIDB and the Bidder.

3. Pre-Qualification for Submission of Bid

Bidders satisfying the eligibility conditions (mentioned in Annexure A) and General terms and conditions specified in this document and ready to provide the said "Services" in conformity with Scope of Work stipulated in Annexure B. may submit their bid through GIDB's e-tendering service provider website <https://tender.nprocure.com> on or before the time line stipulated in the [A] Important Dates.

Bids submitted by any other means other than bid submission in e-tendering website will not be accepted by the authority. The detail guidelines for submission details and E-tendering mentioned in Annexure 01.

4. Bid Security (Earnest Money Deposit)

Bidders are required to give an earnest money deposit of an amount as mentioned in "[A]Important Dates" at the time of submission of the technical bid. The proof of same is to be submitted while opening of eligibility cum technical bid, failing of which the bid of the concerned bidder may be rejected. Non-submission of Earnest Money Deposit in the format prescribed in RFP will lead to outright rejection of the Offer. The EMD of unsuccessful bidders will be returned to them on completion of the procurement process. The EMD (Earnest Money Deposit) of successful bidder(s) will be returned on submission of Performance Bank Guarantee / security deposit.

The amount of Earnest money deposit would be forfeited in the following scenarios:

- a. In case the bidder withdraws the bid prior to validity period of the bid for any reason whatsoever.
- b. In case of the successful bidder, if the bidder fails or refuses to accept and sign the contract as specified in this document within 1 month of issue of contract order/letter of intent for any reason whatsoever;
or
 - ▶ Fail To provide the performance guarantee within 11 days from the purchase order date, for any reason whatsoever.
 - ▶ To comply with any other condition precedent to signing the contract specified in the RFP documents.

Unsuccessful Bidder's - Bid security money deposit or bank guarantee will be returned by the authority within two weeks from closure of the RFP. No interest shall be paid on Bid security money deposit to unsuccessful Bidders.

Exemption for application money and EMD amount:

No Exemption for application money and EMD amount to any bidders

Preference to make in India initiative

GIDB will abide by Govt. of India Public procurement (preference to Make in India) as applicable to encourage 'Make in India' and to promote manufacturing and production of goods and services in India. In case the bidder wishes to avail preference to Make in India order 2017 in public procurement as applicable, bidder may provide self-certification of 'Local content' where 'Local content' means the amount of value added in India as a percentage of total value in percentage"

5. Performance Guarantee

The successful Bidder shall provide a Performance Guarantee within 11 days from the date of receipt of the order or signing of the contract whichever is earlier in the format as provided to the extent of 5% of the Contract value for the entire period of the contract plus 3 months and such other extended period. The guarantee should be of that of a nationalized Bank or schedule commercial bank only,

In the event of non-performance of obligation or failure to meet terms of this Tender or subsequent agreement the GIDB shall be entitled to invoke the performance guarantee without notice or right of demur to the Bidder.

The Authority reserves the right to recover any dues payable by the selected Bidder from any amount outstanding to the credit of the selected Bidder, including the pending bills and/or invoking Performance Guarantee, if any, under this contract.

If the Performance guarantee is not submitted within the stipulated time, the authority reserves the right to cancel the order / contract and the earnest money deposit taken from the Bidder, will be forfeited.

6. Sub - Contracting:

The selected service provider / vendor shall not subcontract or permit anyone other than its personnel to perform any of the work, service or other performance required under this project. In case any particular specialized service in the prescribed in the scope of work requires subcontracting, it needs to be specified in the proposal/ response document with all the details of the work / services. Please note that no work / services shall be subcontracted without the prior permission from the authority in writing.

7. Service Level Agreement and Non-Disclosure Agreement:

The successful bidder shall execute a) Service Level Agreement (SLA) and Non-Disclosure Agreement (NDA), which contained all the services and terms and conditions of the services to be extended as detailed herein. The successful bidder shall execute the SLA and NDA and provide the same along with acceptance of Purchase Order.

All the expenses related to execution of the document such as the applicable stamp duty and registration charges if any shall be borne by the successful bidder.

8. Compliance with Laws:

Compliance in obtaining approvals/permissions/licenses: The Bidder shall promptly and timely obtain all such consents, permissions, approvals, licenses, etc., as may be necessary or required for any of the purposes of this project or for the conduct of their own business under any applicable Law, Government Regulation/Guidelines and shall keep the same valid and in force during the term of the project. Also the bidder shall comply with the provisions of code of wages, and other labor welfare legislations. In the event of any failure or omission to do so, shall indemnify, keep indemnified, hold harmless, defend, protect and fully compensate the authority and its

employees/ officers/ staff/ personnel/ representatives/agents from and against all claims or demands of liability and all consequences that may occur or arise for any default or failure on its part to conform or comply with the above and all other statutory obligations arising there from. The authority will give notice of any such claim or demand of liability within reasonable time to the Bidder.

The Bidder is not absolved from its responsibility of complying with the statutory obligations as specified above.

9. Termination:

Authority reserves the right to terminate this RFP at any stage without any notice or assigning any reason.

At any time during the course of the RFP process or before the award of contract or after execution of the contract that one or more terms and conditions laid down in this Request For Proposal has not been met by the bidder or the bidder has made material misrepresentation or has given any materially incorrect or false information. Authority may terminate his contract and may invoke performance bank guarantee or forfeit the security deposit as the case may be. Further Authority may impose such restriction/s on the defaulting bidder as it deemed fit.

After the award of the contract, if the selected bidder does not perform satisfactorily or delays execution of the contract, the authority reserves the right to get the balance contract executed by another party of its choice by giving one month notice for the same, In such an event, the bidder is bound to make good the additional expenditure which the authority may have to incur for the execution of the balance of the contract

10. Grievance Redressal and Dispute Resolution:

Any bidder who claims to have a grievance against a decision or action with regards to the provisions of this RFP may file a request to the GIDB authority. It may please be noted that the grievance can be filed by only that bidder who has participated in Procurement proceedings in accordance with the provisions of this RFP.

Dispute Resolution:

The Authority and the Bidder shall make every effort to resolve amicably, by direct informal negotiation between the respective project managers from the authority and the Bidder, any disagreement or dispute arising between them under or in connection with this RFP.

If the authority is unable to resolve the dispute within thirty days from the commencement of such informal negotiations, they shall immediately escalate the dispute to the senior authorized personnel designated by the Bidder.

If within thirty days from the commencement of such negotiations between the senior authorized personnel designated by the Bidder and authority,

All questions, disputes or differences arising under and out of, or in connection with the contract or carrying out of the work whether during the progress of the work or after the completion and whether before or after the determination, abandonment or breach of the contract shall be referred to arbitration by a sole Arbitrator acceptable to both parties OR the number of arbitrator shall be three, with each side to the dispute being entitled to appoint one arbitrator. The two Arbitrators appointed by the parties shall appoint a third arbitrator who shall act as the chairman of the proceedings.

The seat and place of arbitration shall be Gandhinagar. The Arbitration and Conciliation Act 1996 or any statutory modification thereof shall apply to the arbitration proceedings.

The arbitral award shall be in writing, state the reasons for the award, and be final and binding on the parties. The award may include an award of costs, including reasonable attorneys' fees and disbursements. Judgment upon the award may be entered by any court having jurisdiction thereof or having jurisdiction over the relevant Party.

11. Governing Laws:

This RFP and the subsequent contract shall be governed and construed and enforced in accordance with the laws of India. Both the Parties shall agree that in respect of any dispute arising upon, over or in respect of any of the terms of this RFP, only the courts in Gandhinagar shall have exclusive jurisdiction to try and adjudicate such disputes to the exclusion of all other courts.

12. Prevention of Corrupt and Fraudulent Practices:

As per Central Vigilance Commission (CVC) directives, it is required that every participating bidder required to sign an integrity pact as per the annexure 17 of this RFP.

Every Bidders / Suppliers / Contractors are expected to observe the highest standard of ethics during the procurement and execution of such contracts in pursuance of the policy:

- ▶ “Corrupt Practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of an official in the procurement process or in contract execution AND
- ▶ “Fraudulent Practice” means a misrepresentation of facts in order to influence a procurement process or the execution of contract to the detriment of the authority and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the authority of the benefits of free and open competition. The Authority reserves the right to reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

The Authority reserves the right to declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if at any time it determines that the firm has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

13. Authorized Signatory:

The selected Bidder shall indicate the authorized signatories who can discuss and correspond with the authority, with regard to the obligations under the contract. The selected Bidder shall submit at the time of signing the contract, a certified copy of the resolution of their Board, authenticated by Company Secretary/Director, authorizing an official or officials of the company or a Power of Attorney copy to discuss, sign agreements/contracts with the authority. The Bidder shall furnish proof of signature identification for above purposes as required by the authority.

14. The bid submission by related parties:

If related parties (as defined below) submit more than one bid then both /all bids submitted by related Parties are liable to be rejected at any stage at authority's discretion:

- a) Bids submitted by holding company and its subsidiary company;
- b) Bids submitted by two or more companies having common director/s
- c) Bids submitted by partnership firms / LLPs having common partners
- d) Bids submitted by companies in the same group of promoters/management

In the case of software or hardware either the Indian agent on behalf of the principal/ OEM or Principal/ OEM itself can bid but both cannot bid simultaneously for the same solution in this tender. If an agent submits bid on behalf of the Principal/ OEM, the same agent cannot submit a bid on behalf of another Principal/ OEM in this tender for the same solution.

15. Right to Reject Bids:

Authority reserves the absolute and unconditional right to reject the response to this RFP if it is not in accordance with its requirements and no correspondence will be entertained by the authority in the matter. The bid is liable to be rejected if:

- ▶ It is not in conformity with the instructions mentioned in the RFP document.
- ▶ It is not accompanied by the requisite Application Money and Earnest Money Deposit (EMD).
- ▶ It is not properly or duly signed.
- ▶ It is received through Email / fax
- ▶ It is received after expiry of the due date and time.
- ▶ It is incomplete including non- furnishing the required documents.
- ▶ It is evasive or contains incorrect information.
- ▶ There is canvassing of any kind.
- ▶ Submitted by related parties
- ▶ It is submitted anywhere other than the place mentioned in the RFP.

Further Authority reserves the rights to:

- ▶ Reject any or all responses received in response to the RFP
- ▶ Extend the time for submission of all proposals
- ▶ Cancel the RFP at any stage, without assigning any reason whatsoever.
- ▶ Visit the place of work of the bidder
- ▶ Conduct an audit of the services provided by the bidder.
- ▶ Ascertain information from the other institutions to which the bidders have rendered their services for execution of similar projects.
- ▶ Revise any part of the tender document, by providing a written addendum at any stage till the award of the contract. The authority reserves the right to issue revisions to this tender document at any time before the award date. The addendums, if any, shall be published on GIDB's website only.

16. General Terms and conditions

The Contractor has to complete work in stipulated period i.e. 5 Months after issuance of the Work Order.

The RFP document is not recommendation; offer to enter into a contract, agreement or any other arrangement, in respect of the services. The provision of the services is subject to observance of selection process and appropriate documentation being agreed between the authority and any successful Bidder as identified by the authority, after completion of the selection process as detailed in this document.

Information Provided: The RFP document contains statements derived from information that is believed to be true and reliable at the date obtained but does not purport to provide all of the information that may be necessary or desirable to enable an intending contracting party to determine whether or not to enter into a contract or arrangement with the authority in relation to the provision of services. Neither the authority nor any of its directors, officers, employees, agents, representative, contractors, or advisers gives any representation or warranty (whether oral or written), express or implied as to the accuracy, updating or completeness of any writings, information or statement given or made in this RFP document.

For Respondent Only: The RFP document is intended solely for the information of the party to whom it is issued ("the Recipient" or "the Respondent") and no other person or organization.

Costs Borne by Respondents: All costs and expenses (whether in terms of time or money) incurred by the Recipient / Respondent in any way associated with the development, preparation and submission of responses, including but not limited to attendance at meetings, discussions, demonstrations, etc. and providing any additional information required by the authority, will be borne entirely and exclusively by the Recipient / Respondent.

No Legal Relationship: No binding legal relationship will exist between any of the Recipients / Respondents and the authority until execution of a contractual agreement to the full satisfaction of the authority.

Recipient Obligation to Inform Itself: The Recipient must apply its own care and conduct its own investigation and analysis regarding any information contained in the RFP document and the meaning and impact of that information.

Evaluation of Offers: Each Recipient acknowledges and accepts that the authority may, in its sole and absolute discretion, apply whatever criteria it deems appropriate in the selection of Bidder, not limited to those selection criteria set out in this RFP document.

The issuance of RFP document is merely an invitation to offer and must not be construed as any agreement or contract or arrangement. The bidders unconditionally acknowledges by submitting its response to this RFP document that it has not relied on any idea, information, statement, representation, or warranty given in this RFP document.

Acceptance of Terms: the bidders will, by responding to the authority's RFP document, be deemed to have accepted the terms as stated in this RFP document

Only one submission of response to RFP by each Respondent will be permitted.

The authority expects the Bidder to adhere to the terms of this tender document and would not accept any deviations to the same.

The authority expects that the Bidder appointed under the tender document shall have the single point responsibility for fulfilling all obligations and providing all deliverables and services required by authority.

Unless agreed to specifically by the authority in writing for any changes to the issued tender document, the Bidder responses would not be incorporated automatically in the tender document.

All responses received after the due date/time as mentioned in "[A] Important Dates. Last Date of Submission of RFP Response (Closing Date)" would be considered late and would be liable to be rejected. E procurement portal will not allow to lodgment of RFP response after the deadline. It should be clearly noted that the authority has no obligation to accept or act on any reason for a late submitted response to RFP. The authority has no liability to any Respondent who lodges a late RFP response for any reason whatsoever, including RFP responses taken to be late only because of another condition of responding.

The authority has established RFP coordinators to provide a venue for managing bidder relationship and other requirements through the authority's decision making body for contract clarification. All the queries and communication must be addressed to the RFP coordinators / contact persons from the authority mentioned in "[A] Important Dates - RFP Coordinator"

Recipients are required to direct all communications for any clarification related to this RFP to RFP Coordinator.

All questions relating to the RFP, eligibility or otherwise, must be in writing and addressed to the addresses given in point "[A] Important Dates" above. Interpersonal communications will not be entered into and a Respondent will be disqualified if attempting to enter into such communications. The authority will try to reply, without

any obligation in respect thereof, every reasonable question raised by the Respondents in the manner specified. However, the authority may in its absolute discretion seek, but under no obligation to seek, additional information or material from any Respondents after the RFP closes and all such information and material provided must be taken to form part of that Respondent's response.

Respondents should invariably provide details of their email address (as) as responses to queries will only be provided to the Respondent via email. If authority in its sole and absolute discretion deems that the originator of the query will gain an advantage by a response to a question, then authority reserves the right to communicate such response to all Respondents.

The authority may in its absolute discretion engage in discussion or negotiation with any Respondent (or simultaneously with more than one Respondent) after the RFP closes to improve or clarify any response.

Bidder should submit their Eligibility Cum Technical and Commercial bids through online portal. The bidder must register for submission of their bid as specified in this document.

All submissions, including any accompanying documents, will become the property of the authority. The bidder shall be deemed to have licensed, and granted all rights to, the authority to reproduce the whole or any portion of their submission for the purpose of evaluation, to disclose the contents of the submission to other bidders who have registered a submission and to disclose and/or use the contents of the submission as the basis for any resulting RFP process, notwithstanding any copyright or other intellectual property right of the Recipient that may subsist in the submission or accompanying documents

All responses should be in English language. All responses by the bidder to this tender document shall be binding on such bidder for a period of 180 days after opening of the bids.

The bidder may modify or withdraw its offer after submission but prior to the closing date and time as prescribed by Authority. No offer can be modified or withdrawn by the bidder subsequent to the closing date and time for submission of the offers.

The bidders required to quote for all the components/services mentioned in the "Project scope" and all other requirements of this RFP. In case the bidder does not quote for any of the components/services, the response would be deemed to include the quote for such unquoted components/service. It is mandatory to submit the details in the formats provided along with this document duly filled in, along with the offer. The authority reserves the right not to allow / permit changes in the technical specifications and not to evaluate the offer in case of non-submission of the technical details in the required format or partial submission of technical details.

In the event the bidder has not quoted for any mandatory items as required by the authority and forming a part of the tender document circulated to the Bidder's and responded to by the bidder, the same will be deemed to be provided by the bidder at no extra cost to the authority.

The authority is not responsible for any assumptions or judgments made by the bidder for proposing the deliverables. The authority's interpretation will be final.

The authority ascertains and concludes that everything as mentioned in the tender documents circulated to the Bidder and responded by the Bidders have been quoted for by the Bidder, and there will be no extra cost associated with the same in case the Bidder has not quoted for the same.

All out of pocket expenses, traveling, boarding and lodging expenses for the entire life of the contract should be a part of the financial bid submitted by the Bidder to the authority. No extra costs in account of any items or services or by way of any out of pocket expenses, including travel, boarding and lodging etc. will be payable by the authority. The Bidder cannot take the plea of omitting any charges or costs and later lodge a claim on the authority for the same.

Responses to this RFP should not be construed as an obligation on the part of the authority to award a contract / purchase contract for any services or combination of services. Failure of the authority to select a bidder shall not result in any claim whatsoever against the authority. The authority reserves the right to reject any or all bids in part or in full, without assigning any reason whatsoever.

By submitting a proposal, the bidder agrees to contract with the authority within the time period proscribed by the authority. Failure on the part of the successful bidder to execute an agreement with the authority will relieve the authority of any obligation to the bidder, and a different bidder may be selected based on the selection process.

The terms and conditions as specified in the RFP and addendums (if any) thereafter are final and binding on the bidders. In the event the bidders not willing to accept the terms and conditions of the authority, the bidder may be disqualified. Any additional or different terms and conditions proposed by the bidder would be rejected unless expressly assented to in writing by the authority and accepted by the authority in writing

The bidder shall represent and acknowledge to the authority that it possesses necessary experience, expertise and ability to undertake and fulfill its obligations, involved in the performance of the provisions of this RFP. The bidder represents that the proposal to be submitted in response to this RFP shall meet the proposed RFP requirement. If any services, functions or responsibilities not specifically described in this RFP are an inherent, necessary or customary part of the deliverables or services and are required for proper performance or provision of the deliverables or services in accordance with this RFP, they shall be deemed to be included within the scope of the deliverables or services, as if such services, functions or responsibilities were specifically required and described in this RFP and shall be provided by the bidder at no additional cost to the authority. The bidder also acknowledges that the authority relies on this statement of fact, therefore neither accepting responsibility for, nor relieving the bidder of responsibility for the performance of all provisions and terms and conditions of this RFP, the authority expects the bidder to fulfill all the terms and conditions of this RFP.

The bidder covenants and represents to the authority the following:

- ▶ It is duly incorporated, validly existing and in good standing under as per the laws of the state in which the entity is incorporated.
- ▶ It has the corporate power and authority to enter into Agreements and perform its obligations there under.

The execution, delivery and performance under an Agreement by bidder:

- ▶ Will not violate or contravene any provision of its documents of incorporation;
- ▶ Will not violate or contravene any law, statute, rule, regulation, licensing requirement, order, writ, injunction or decree of any court, governmental instrumentality or other regulatory, governmental or public body, agency or authority by which it is bound or by which any of its properties or assets are bound;
- ▶ Except to the extent that the same have been duly and properly completed or obtained, will not require any filing with, or permit, consent or approval of or license from, or the giving of any notice to, any court, governmental instrumentality or other regulatory, governmental or public body, agency or authority, joint venture party, or any other entity or person whatsoever;

The bidder shall undertake to provide appropriate human as well as other resources required, to execute the various tasks assigned as part of the project, from time to time.

The authority would not assume any expenses incurred by the bidder in preparation of the response to this RFP and also would not return the bid documents to the Bidders

The authority will not bear any costs incurred by the bidder for any discussion, presentation, demonstrations etc. on proposals or proposed contract or for any work performed in connection therewith.

Preliminary Scrutiny – The authority will scrutinize the offers to determine whether they are complete, whether any errors have been made in the offer, whether required documentation has been furnished, whether the documents have been properly signed, and whether items are quoted as per the schedule. The authority may, at its discretion, waive any minor non-conformity or any minor deficiency in an offer. This shall be binding on all bidders and the authority reserves the right for such waivers and the authority's decision in the matter will be final.

Clarification of Offers – To assist in the scrutiny, evaluation and comparison of offers, the authority may, at its discretion, ask some or all bidders for clarification of their offer. The authority has the right to disqualify the bidder whose clarification is found not suitable to the proposed project.

No Commitment to Accept Lowest bid or Any Tender – The authority shall be under no obligation to accept the lowest price bid or any other offer received in response to this Tender notice and shall be entitled to reject any or all offers including those received late or incomplete offers without assigning any reason whatsoever.

Erasures or Alterations – The offers containing erasures or alterations will not be considered. There should be no hand-written material, corrections or alterations in the offer. Technical details must be completely filled up. Correct information of the services being offered must be filled in. Filling up of the information using terms such as "OK", "accepted", "noted", "as given in brochure / manual" is not acceptable. The authority may treat the offers not adhering to these guidelines as unacceptable.

Price Discussion – It is absolutely essential for the Bidders to quote the lowest price at the time of making the offer in their own interest. The authority reserves the right to do price discovery and engage the successful bidder in discussions on the prices quoted.

If the authority is not satisfied with the specifications as specified in the tender document and observes major deviations, the bids of such bidders will not be short-listed for further evaluation. No further discussions shall be entertained with such bidders in respect of the subject bid.

The Bidder shall perform its obligations under this Tender as an independent contractor, and shall not engage subcontractors to perform any of the Deliverables or Services without the prior permission from Authority. Neither this Tender nor the Bidder's performance of obligations under this Tender shall create an association, partnership, joint venture, or relationship of principal and agent, master and servant, or employer and employee, between the authority and the Bidder or its employees, subcontractor; and neither Party shall have the right, power or authority (whether expressed or implied) to enter into or assume any duty or obligation on behalf of the other Party.

The Bidder shall solely be responsible for all payments (including any statutory payments) to its employees and / or sub-contractors and shall ensure that at no time shall its employees, personnel or agents hold themselves out as employees or agents of the authority, nor seek to be treated as employees of the authority for any purpose, including claims of entitlement to fringe benefits provided by the authority, or for any kind of income or benefits. The Bidder alone shall file all applicable tax returns for all of its personnel assigned hereunder in a manner consistent with its status as an independent contractor of services; and the Bidder will make all required payments and deposits of taxes in a timely manner.

RFP responses received after the deadline for lodgment of RFPs may be registered by the authority and may be considered and evaluated by the evaluation team at the absolute discretion of the authority. Respondents are to provide detailed evidence to substantiate the reasons for a late RFP submission. It should be clearly noted that the authority has no obligation to accept or act on any reason for a late submitted response to RFP. The authority has no liability to any Respondent who lodges a late RFP response for any reason whatsoever.

17. Information Confidentiality:

This document is meant for the specific use by the Company / person/s interested to participate in the current

tendering process. This document in its entirety is subject to copyright laws. GIDB expects the bidders or any person acting on behalf of the bidders to strictly adhere to the instructions given in the document and maintain confidentiality of information. The Bidders will be held responsible for any misuse of the information contained in the document and liable to be prosecuted by the authority, in the event of such circumstances being brought to the notice of the authority. By downloading the document, the interested party is subject to confidentiality clauses.

Technical Bid envelope to contain the following (All the Documents should be digitally signed by authorized representative of bidder)

Section #	Section Heading	Proforma Given
1.	Eligibility criteria compliance with bidder comments	Annexure 02
2.	Undertaking from the bidder	Annexure 03
3.	Application Money	Rs. 5,000/-
4.	Bid Security (Earnest Money Deposit)	Bidder to Provide Transaction Details or Bank Guarantee as per Annexure 05
5.	Bid Security Form	Annexure 06
6.	Letter of Undertaking from Bidder	Annexure 07
7.	Conformity Letter	Annexure 09
8.	Letter of Undertaking from OEM	Annexure 10
9.	Undertaking of Information Security (Bidder & OEM)	Not Required
10.	Executive Technical Summary	Bidder to provide
11.	Technical Proposal: The proposal based on Technical Specification compliance should be submitted with pages properly numbered, each page signed and stamped.	Bidder need to provide the Compliance of all technical requirement along with the scope mentioned in Annexure 12
12.	Copy of the tender document along with annexures and addendum duly sealed and signed on all the pages of the document / digitally signed tender document.	Bidder to provide (signed /Digitally signed documents from authorized representative of bidder)
13.	Letter of authorization from the company authorizing the person to sign the tender response and related documents.	Bidder to provide
14.	A certified copy of the resolution of Board, authenticated by Company Secretary/Director, authorizing an official/s of the company or a Power of Attorney copy to discuss, sign agreements/contracts with the authority.	Bidder to provide (To submit Board Resolution copy of authorizing official to submit the Bid)
15.	Integrity pact	Bidder to provide detailed Annexure 17
16.	Service Level And Non-Disclosure Agreement Format	Annexure 19

Annexure 02 –Evaluation Terms

1. Evaluation process

A two stage process is adopted for selection of the Bidder:

- ▶ Stage 1 – Eligibility Cum Technical Bid
- ▶ Stage 2 – Commercial Bid

During evaluation of the Tenders, the authority, at its discretion, may ask the Bidder for clarification in respect of its tender. The request for clarification and the response shall be in writing, and no change in the substance of the tender shall be sought, offered, or permitted. The authority reserves the right to accept or reject any tender in whole or in parts without assigning any reason thereof. The decision of the authority shall be final and binding on all the Bidders to this document and GIDB will not entertain any correspondence in this regard.

A. Eligibility cum Technical Bid

Pre-qualification / eligibility criterion for the bidder to qualify this stage is clearly mentioned in below. The Bidder would need to provide supporting documents as part of the eligibility proof. All dates if not specified to be applicable from the date of the RFP.

S. No	Eligibility Criteria	Complied (Yes/No)	Supporting Documents Required
A	General		
1	Bidder must be a Partnership firm / LLP or Private / Public Limited Company in India for last 5 years.		Documentary Proof to be attached (Certificate of Incorporation)
2	Bidder must have Office set up in Gujarat and has to submit relevant document along with Bid.		Documentary Proof to be attached
3	Bidder must not be blacklisted / debarred by any Statutory, Regulatory or Government Authorities or Public Sector Undertakings (PSUs / PSBs).		Letter of confirmation from Bidder.
4	The Bidder is not from such a country which shares a land border with India, in terms of the said amendments to GFR, 2017. or The Bidder is from such a country and has been registered with the Competent Authority i.e., the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade, as stated under Annexure to the said Office Memorandum / Order and we submit the proof of registration herewith.		Undertaking as per Annexure 03 and Copy of certificate of valid registration with the Competent Authority (If applicable) (signed /Digitally signed documents from authorized representative of bidder)
5	The Bidder to provide information that any of its subsidiary or associate or holding company or companies having common director/s or companies in the same group of promoters/management or partnership firms/LLPs having common partners has not Participated in the bid process.		Letter of confirmation from Bidder.

Sr. No	Eligibility Criteria	Complied (Yes/No)	Supporting Documents Required
6	The Bidder to provide an undertaking on his letter head that all the functional and technical requirements highlighted as part of Technical Scope are covered in totality in the proposal submitted by the Bidder.		Letter of confirmation from Bidder.
7	The bidder to provide copy of valid electrical license of Gujarat (bidder / sub-contractor)		Copy of valid electrical license contractor of Gujarat
B	Financial		
1	The Bidder must have registered an average turnover of 3 crores a year during the last three completed financial years – 2021-22, 2022-23 and 2023-24 (Not Inclusive of the turnover of associate companies). * If 2023-24 Financial Statements of any bidder is unaudited, then along with an undertaking letter from the bidder that the 2023-24 Statements are not audited.		The CA certificate in this regard should be without any riders or qualification. *
2	The Bidder must be Net profit making entity continuously for the last three years that is financial years –2021-22, 2022-23 and 2023-24 * If 2023-24 Financial Statements of any bidder is unaudited then Authority would consider the Audited Financial Statements along with an undertaking letter from the bidder that the 2023-24 Statements are not audited.		Certified letter from the Chartered Accountant. The CA certificate in this regard should be without any riders or qualification.
	They Bidder must have completed similar jobs* in last 5 {five} years (as on 31-10-2024) as per the following criteria (Proforma enclosed) : a) One similar completed work costing not less than ₹ 4.00 crores		For Govt. works, Form-3A is to be furnished and for Non Govt. work a work completion certificate from concern Architect/Institute/Authority is to be submitted.
C	Experience & Support Infrastructure		
1			Documentary Proof of order / contract copy / customer credentials.
2			Letter of confirmation of available support infrastructure

The technical bids of only those bidders who qualify the above mentioned eligibility criteria will be evaluated.

B. Commercial Bid Evaluation

The commercial bids of only those bidders who qualify in both eligibility and technical evaluation will be opened. The date for opening of the commercial bid would be communicated separately to the technically eligible Bidders.

The decision of the authority shall be final and binding on all the bidders to this document. The authority reserves the right to accept or reject an offer without assigning any reason whatsoever. The bidder is expected not to add any conditions / deviations in the commercial bid. Any such conditions / deviations may make the bid liable for disqualification.

2. Commercial Bids Terms

- a. The prices and other terms offered by bidders must be firm for an acceptance period of 180 days from the opening of the commercial bid.
- b. In case of any variation (upward or down ward) in Government levies / taxes / cess / duties etc. which has been included as part of the price will be borne by the bidder. Variation would also include the introduction of any new tax / cess/ duty, etc provided that the benefit or burden of other taxes quoted separately as part of the commercial bid like GST and any taxes introduced instead of GST and levies associated to GST or any new taxes introduced after the submission of bidder's proposal shall be passed on or adjusted to the authority. If the Bidder makes any conditional or vague offers, without conforming to these guidelines, Authority will treat the prices quoted as in conformity with these guidelines and proceed accordingly. Necessary documentary evidence should be produced for having paid any tax/cess/duty, if applicable, and or other applicable levies.
- c. If any Tax authorities of any state, including, Local authorities like Corporation, Municipality etc. or any Government authority or Statutory or autonomous or such other authority imposes any tax, charge or levy or any cess / charge other than GST and if the authority has to pay the same for any of the items or supplies made here under by the bidder, for any reason including the delay or failure or inability of the bidder to make payment for the same, the authority has to be reimbursed such amounts paid, on being intimated to the Bidder along with the documentary evidence. If the Bidder does not reimburse the amount within a fortnight, the authority shall adjust the amount out of the payments due to the Bidder from the authority along with the interest calculated at commercial rate.
- d. Terms of payment as indicated in the letter of acceptance/ order that will be issued by the authority on the selected Bidder will be final and binding on the bidder and no interest will be payable by the authority on outstanding amounts under any circumstances. If there are any clauses in the Invoice contrary to the terms of the Purchase Contract, the bidder should give a declaration on the face of the Invoice or by a separate letter explicitly stating as follows "Clauses, if any contained in the Invoice which are contrary to the terms contained in the Purchase Contract will not hold good against the authority and that the Invoice would be governed by the terms contained in the Contract concluded between the authority and the bidder".
- e. The authority is not responsible for any assumptions or judgments made by the bidder for arriving at any type of costing. The authority at all times will benchmark the performance of the bidder to the RFP and other documents circulated to the bidder and the expected service levels as mentioned in these documents. In the event of any deviations from the requirements of these documents, the bidder must make good the same at no extra costs to the authority, in order to achieve the desired service levels as well as meeting the requirements of these documents. The authority shall not be responsible for any assumptions made by the bidder and the authority's interpretation will be final.
- f. The Commercial Offer should give all relevant price information and should not contradict the Technical Offer in any manner. There should be no hidden costs for items quoted.
- g. The authority is not responsible for the arithmetical accuracy of the bid. The bidders will have to ensure all

calculations are accurate. The authority at any point in time for reasons whatsoever is not responsible for any assumptions made by the Bidder. The authority at a later date will not accept any plea of the bidder or changes in the commercial offer for any such assumptions.

3. Price Comparisons

- a. The successful bidder will be determined on the basis evaluation mentioned in Evaluation Criteria in this RFP document.
- b. The Price offer shall be on a fixed price basis. Bid submitted with an adjustable price quotation will be treated as non-responsive and will be liable to be rejected. The rate quoted by the bidder should necessarily include the following:
 - ▶ Prices quoted by the Bidder should be inclusive of all taxes, duties, levies etc. except GST. GST will be paid at actuals. The Bidder is expected to provide the GST percentage in commercial (without amounts being submitted in the technical response). There will be no price escalation for during the contract period and any extension thereof.
 - ▶ The Bidders expected to provide details of services which are required to be extended by the Bidder in accordance with the terms and conditions of the contract.

Annexure – 03

Declaration/ undertaking from bidder regarding applicability of restrictions on procurement from a bidder of a country which shares a land border with India as per the order no. 6/18/2019-PPD dated 23rd July 2020 issued by Ministry of finance department of expenditure

(This letter should be on the letterhead of the Bidder duly signed by an authorized signatory)

To
GIDB

Gandhinagar

Sir,

We, M/s ----- are a private/public limited company/LLP/Firm <strike off whichever is not applicable> incorporated under the provisions of the Companies Act, 1956/2013 Limited Liability Partnership Act 2008/ Indian Partnership Act 1932, having our registered office at -----
----- (referred to as the "Bidder") are desirous of participating in the Tender Process in response to your captioned RFP and in this connection we hereby declare, confirm and agree as under:

We, the Bidder have read and understood the contents of the RFP and Office Memorandum & the Order (Public Procurement No.1) both bearing no. F.No.6/18/2019/PPD of 23rd July 2020 issued by Ministry of Finance, Government of India on insertion of Rule 144 (xi) in the General Financial Rules (GFRs) 2017 and the amendments & clarifications thereto, regarding restrictions on availing/procurement of goods and services, of any Bidder from a country which shares a land border with India and / or sub-contracting to contractors from such countries.

In terms of the above and after having gone through the said amendments including in particular the words defined therein (which shall have the same meaning for the purpose of this Declaration cum Undertaking), we the Bidder hereby declare and confirm that:

Please strike off whichever is not applicable

1. "I/ we have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I/ we certify that _____ is not from such a country."
2. "I/ we have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I/ we certify that _____ is from such a country. I hereby certify that fulfills all requirements in this regard and is eligible to be considered. [Valid registration by the Competent Authority is attached.]"

In case the work awarded to us, I/ we undertake that I/ we shall not subcontract any of assigned work under this engagement without the prior permission of Authority.

Further we undertake that I/we have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that our subcontractor is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that our subcontractor fulfills all requirements in this regard and is eligible to be considered. [Valid registration by the Competent Authority is attached herewith.]"

2. We, hereby confirm that we fulfill all the eligibility criteria as per the office memorandum/ order mentioned above and RFP and we are eligible to participate in the Tender process.

We also agree and accept that if our declaration and confirmation is found to be false at any point of time including after awarding the contract, Authority shall be within its right to forthwith terminate the contract/ bid without notice to us and initiate such action including legal action in accordance with law. Authority shall also be within its right to forfeit the security deposits/ earnest money provided by us and also recover from us the loss and damages sustained by the authority on account of the above.

3. This declaration cum undertaking is executed by us or through our Authorized person, after having read and understood the terms of RFP and the Office Memorandum and Order.

Dated this.....by20

Yours faithfully,

Authorized SignatoryName:

Designation:

Bidder's Corporate Name

Address

Email and Phone #

List of documents enclosed:

1. Copy of certificate of valid registration with the Competent Authority (strike off if not applicable)

Annexure 04 – Bid Security Letter

To,
GIDB,

Sir,

Sub: RFP FOR PROCUREMENT OF -----.

We having our registered office at (herein after called the 'BIDDER') are offering Earnest Money Deposit as per details below for consideration of the bid of the above mentioned Bidder.

Amount: Rs. 1,00,000/-/- (Rupees One Lakh Only)

Mode: DD/FDR

Account Details for refund of Bid Security (Earnest Money Deposit) as per terms & conditions mentioned in the Tender document

We having our registered office at (herein after called the 'BIDDER') are providing our bank account details as per below to be considered as our account for refund of Bid Security (Earnest Money Deposit), wherever applicable as per terms & conditions mentioned in the Tender document.

A/C Name:

A/C No. (Company account details):

IFSC Code:

Bank Name:

Bank Address:

The details mentioned above are treated as final & Authority shall not be held responsible for any wrong/failed transaction due to any discrepancy in above details.

Dated this.....by20

Yours faithfully,

Authorized Signatory Name:

Designation:

Bidder's Corporate Name

Address

Email and Phone #

Annexure 05- Bid Security Form

Pro forma for Bank Guarantee in lieu of EMD

To,

Date DD-MM-YYYY

GIDB

.....

Dear Sir,

WHEREAS (Company Name) registered under the Indian Companies Act 1956 and having its Registered Office at.....India (hereinafter referred to as "the VENDOR") proposes to offer its response to RFP No.. #: (RFP details) (hereinafter called the "RFP")

AND WHEREAS, in terms of the conditions as stipulated in the RFP, the VENDOR is required to furnish a Bank Guarantee in lieu of the Earnest Money Deposit (EMD), issued by a Scheduled Commercial Bank in India in your favour to secure the order of the RFP in accordance with the RFP Document (which guarantee is hereinafter called as "BANK GUARANTEE")

AND WHEREAS the VENDOR has approached us,.....for providing the authority GUARANTEE.

AND WHEREAS at the request of the VENDOR and in consideration of the proposed RFP response to you, WE,.....havingOffice at....., India has agreed to issue the authority GUARANTEE.

THEREFORE, WE,, through our local office at.....India furnish you the authority GUARANTEE in manner hereinafter contained and agree with you as follows:

1. We, undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from you and undertake to indemnify you and keep you indemnified from time to time to the extent of Rs.....(Rupeesonly) an amount equivalent to the EMD against any loss or damage caused to or suffered by or that may be caused to or suffered by you on account of any breach or breaches on the part of the vendor. any of the terms and conditions contained in the RFP and in the event of the VENDOR commits default or defaults in carrying out any of the work or discharging any obligation in relation thereto under the RFP or otherwise in the observance and performance of any of the terms and conditions relating thereto in accordance with the true intent and meaning thereof, we shall forthwith on demand pay to you such sum or sums not exceeding the sum of Rs.....(Rupees.....only) as may be claimed by you on account of breach on the part of the VENDOR of their obligations in terms of the RFP.

2. Notwithstanding anything to the contrary contained herein or elsewhere, we agree that your decision as to whether the VENDOR has committed any such default or defaults and the amount or amounts to which you are entitled by reasons thereof will be binding on us and we shall not be entitled to ask you to establish your claim or claims under Bank Guarantee but will pay the same forthwith on your demand without any protest or demur.
3. This Bank Guarantee shall continue and hold good until it is released by you on the application by the VENDOR after expiry of the relative guarantee period of the RFP and after the VENDOR had discharged all his obligations under the RFP and produced a certificate of due completion of work under the said RFP and submitted a "No Demand Certificate "provided always that the guarantee shall in no event remain in force after the day of without prejudice to your claim or claims arisen and demanded from or otherwise notified to us in writing before the expiry of the said date which will be enforceable against us notwithstanding that the same is or are enforced after the said date.
4. Should it be necessary to extend Bank Guarantee on account of any reason whatsoever, we undertake to extend the period of Bank Guarantee on your request under intimation to the VENDOR till such time as may be required by you. Your decision in this respect shall be final and binding on us.
5. You will have the fullest liberty without affecting Bank Guarantee from time to time to vary any of the terms and conditions of the RFP or extend the time of performance of the RFP or to postpone any time or from time to time any of your rights or powers against the VENDOR and either to enforce or forbear to enforce any of the terms and conditions of the said RFP and we shall not be released from our liability under Bank Guarantee by exercise of your liberty with reference to matters aforesaid or by reason of any time being given to the VENDOR or any other forbearance, act or omission on your part or any indulgence by you to the VENDOR or by any variation or modification of the RFP or any other act, matter or things whatsoever which under law relating to sureties, would but for the provisions hereof have the effect of so releasing us from our liability hereunder provided always that nothing herein contained will enlarge our liability hereunder beyond the limit of Rs.....(Rupees. only) as aforesaid or extend the period of the guarantee beyond the said day of unless expressly agreed to by us in writing.
6. The Bank Guarantee shall not in any way be affected by your taking or giving up any securities from the VENDOR or any other person, firm or company on its behalf or by the winding up, dissolution, insolvency or death as the case may be of the VENDOR.
7. In order to give full effect to the guarantee herein contained, you shall be entitled to act as if we were your principal debtors in respect of all your claims against the VENDOR hereby guaranteed by us as aforesaid and we hereby expressly waive all our rights of surety ship and other rights,if any, which are in any way inconsistent with any of the provisions of Bank Guarantee.
8. Subject to the maximum limit of our liability as aforesaid, Bank Guarantee will cover all your claim or claims against the VENDOR from time to time arising out of or in relation to the said RFP and in respect of which your claim in writing is lodged on us before expiry of Bank Guarantee.

9. Any notice by way of demand or otherwise hereunder may be sent by courier, telex, fax, e-mail or registered post to our local address as aforesaid and if sent accordingly it shall be deemed to have been given when the same has been posted.
10. The authority Guarantee and the powers and provisions herein contained are in addition to and not by way of limitation of or substitution for any other guarantee or guarantees here before given to you by us (whether jointly with others or alone) and now existing un-cancelled and that BankGuarantee is not intended to and shall not revoke or limit such guarantee or guarantees.
11. The authority Guarantee shall not be affected by any change in the constitution of the VENDOR or us nor shall it be affected by any change in your constitution or by any amalgamation or absorption thereof or therewith but will ensure to the benefit of and be available to and be enforceable by the absorbing or amalgamated company or concern.
12. The authority Guarantee shall come into force from the date of its execution and shall not be revoked by us any time during its currency without your previous consent in writing.
13. We further agree and undertake to pay you the amount demanded by you in writing irrespective of any dispute or controversy between you and the VENDOR.
14. Notwithstanding anything contained herein above;
 - i) our liability under this Guarantee shall not exceed Rs. (Rupeesonly) ;
 - ii) this Bank Guarantee shall be valid up to and including the date.....and
 - iii) we are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before the expiry of this guarantee.
15. We have the power to issue this Bank Guarantee in your favour under the Memorandum and Articles of Association of our Bank and the undersigned has full power to execute this Bank Guarantee under the Power of Attorney issued by the authority.

For and on behalf of

Branch Manager Seal

& Address

Annexure 06 – covering letter from the Bidder

To
GIDB

Sir,

Sub: RFP FOR-----.

1. Having examined the Tender Documents including all Annexures and Appendices, the receipt of which is hereby duly acknowledged, we, the undersigned offer to supply, deliver, implement and commission ALL the items mentioned in the 'Request for Proposal' and the other schedules of requirements and services for your Organization in conformity with the said Tender Documents in accordance with the schedule of Prices indicated in the Price Bid and made part of this Tender.
2. If our Bid is accepted, we undertake to comply with the delivery schedule as mentioned in the Tender Document.
3. We agree to abide by this Tender Offer for 180 days from date of bid opening and our Offer shall remain binding on us and may be accepted by the authority any time before expiry of the offer.
4. This Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.
5. a) We undertake that in competing for and if the award is made to us, in executing the subject Contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".
6. We agree that the authority is not bound to accept the lowest or any Bid the authority may receive.
7. We certify that we have provided all the information requested by the authority in the format requested or. We also understand that the authority has the exclusive right to reject this offer in case the authority is of the opinion that the required information is not provided or is provided in a different format.

Dated this.....by..... 20

Yours faithfully,

Authorized SignatoryName:
Designation:
Bidder's Corporate Name
Address
Email and Phone #

Annexure 07–Pre-Bid Queries Form

Authorized SignatoryName:

Designation:

Bidder’s Corporate Name

Address

Email and Phone #

Date:

Annexure 08–Conformity Letter

*(This letter should be on the letterhead of the Bidder duly signed by an authorized signatory)*To

To,

GIDB

Sir,

Sub: RFP FOR _____

Further to our proposal dated, in response to the Request for Proposal... (GIDB's tender No. hereinafter referred to as "RFP") issued by GIDB Authority we hereby covenant, warrant and confirm as follows:

We hereby agree to comply with all the terms and conditions / stipulations as contained in the RFP and the related addendums and other documents including the changes made to the original tender documents issued by the authority shall form a valid and binding part of the aforesaid RFP document. The authority is not bound by any other extraneous matters or deviations, even if mentioned by us elsewhere in our proposal or any subsequent deviations sought by us, whether orally or in writing, and the authority's decision not to accept any such extraneous conditions and deviations will be final and binding on us.

Yours faithfully,

Authorized SignatoryName:

Designation:

Bidder's Corporate Name

Address

Email and Phone #

Annexure 09 – Project Details Scope of Work

1. Project Scope

Authority will award the contract to the successful bidder (L-1). The bidder should make provision as per the scope briefed in this RFP.

The Bidder shall perform the following tasks as per GIDB's requirement and satisfaction as per this RFP, but not limited to:

Standards: All standards to be followed will adhere to Bureau of Indian Standards (BIS) specifications or other acceptable standards.

Service Levels and Uptime Guarantee

2. Delivery:

It is the intention of the specification and drawings to call for finished work, tested and ready for operation. Whenever the words "Supply" or "Provide" are used, it shall mean delivery of material as specified in an assembled manner, ready for installation. Any apparatus, material or work not shown on drawings but mentioned in the specification or vice versa, or any incidental accessories necessary to make the work complete and perfect in all respects and ready for operation, even if not particularly specified, shall be furnished, delivered and installed by the contractor without additional expenses. Minor details not usually shown or specified, but necessary for the proper installation and operation, shall be included in the work and in the contract.

3. Warranty

ELECTRICAL WORK :- Two year GUARANTY & WARRANTY certificate shall be provided by the Manufacturer and free service for first year (after completion of warranty period.) shall be provided as when required for attending the breakdown in the system

- For Light Fixtures there are two years of warranty for ballast/ igniter/capacitor from the dispatch date of materials. There is no warranty or Guaranty for Light Bulb.
- The contractor shall be responsible for rectifying defects noticed in the works within a year (i.e. two year) from the date of completion of the work. For specialized works the guarantee shall be for 10 years.
- **GUARANTEE & FREE SERVICE HVAC Work:** 3 year warranty period for High side & Low Side Work. At the close of the work and before issuance of final certificate of virtual completion by authority, the contractor shall furnish written guarantee indemnifying GIDB against AC Machines and (low side Work) workmanship for a period of three year after completion. The contractor shall hold himself fully responsible for reinstallation or replacement, free of cost to Authority, in case of following:

22.1 Any defective work or material supplied by the contractor.

22.2 Any material or equipment damaged or destroyed as a result of defective workmanship by the contractor shall give free replacement for easy and smooth operation of the HVAC System during the defect liability period.

4. Payment Terms

The bidder must accept the payment terms proposed by the authority. The commercial bid submitted by the bidders must be in conformity with the payment terms proposed by the authority. Any deviation from the proposed payment terms would not be accepted. The authority shall have the right to withhold any payment due to the bidder, in case of delays or defaults on the part of the bidder. Such withholding of payment shall not amount to a default on the part of the authority. If any of the items / activities as mentioned in the price bid is not taken up by the authority during the course of the assignment, the authority will not pay the cost of such items and professional fees quoted by the bidder in the price bid against such activity / item.

There shall be no escalation in the prices once the prices are fixed and agreed to by the authority and the bidder. Payment will be released by Facilities Management Dept., as per above payment terms on submission of relevant documents.

The authority will pay invoices within a period of 30 days from the date of receipt of undisputed invoices. Any dispute regarding the invoice will be communicated to the selected bidder within 15 days from the date of receipt of the invoice. After the dispute is resolved, the authority shall make payment within 30 days from the date the dispute stands resolved.

5. Final testing of the installation:

The Contractor shall demonstrate trouble free functioning of all the works and services. The Engineer-in-Charge or his authorized representatives shall carry out final inspection of these various services and installations. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.

Fire Safety Work:

SCOPE OF WORK:

The work to be carried out under this contract comprises of the Fire Fighting work for the proposed project called for in the documents. The work covered under this contract comprises of supply (wherever called for), installation, connection, testing and commissioning the Fire Fighting work commencing from point of fire brigade inlet or fire water storage within the project/site as per specifications, relevant to TAC, NFPA, NBC, Indian standards, Local Fire Rules and Code of practice.

The contractor shall carry out and complete the said work under this contract in every respect and in conformity with the current rules and regulations of the local Fire Authority, the Indian Standards and with the directions of and to the satisfaction of the Consultant and Authority. The Contractor shall furnish all labour and install all materials, appliances, equipment (except those items which will be supplied by the Authority to the contractor at site), necessary for complete provision and testing of the whole fire fighting installation as specified herein and shown on the drawings. This also includes any material, appliances, equipment not specifically mentioned herein or noted on the drawing as being furnished or installed but which are necessary and customary to make complete installation and to make the fire fighting system shown in the schedule or described herein, properly connected and in working order.

The work shall include all incidental jobs connected with Fire Fighting installation such as foundation block for pump-motor sets, excavation for pipe trenches and back filling, cutting/drilling holes through walls/floors and grouting, fixing of sprinklers with necessary civil work , supports & hangers for hydrant / pipes, etc.

All quantities mentioned in the Bill of quantity are approximate and the contractor shall not be eligible for any claim due to any variation in / or omission of any item.

It is the responsibility of the contractor to co-ordinate with Local Fire Authority, Fire Officer and fulfils all the documents, drawings & any other requirement of them at no extra cost.

FEES, PERMITS AND TESTS:

The Contractor shall pay for any and all fees and obtain permits required for the fire fighting work. On completion of the work the contractor shall obtain and deliver to the AUTHORITY, certificates of final inspection and approval by the local fire Authority and the Fire inspector.

6. Right to Alter requirements

The authority reserves the right to alter the requirements specified in the Tender. The authority also reserves the right to delete one or more items from the list of items specified in the Tender. The authority will inform all Bidders about changes, if any. The Bidder agrees that the authority has no limit on the additions or deletions on the items for the period of the contract. Further the Bidder agrees that the prices quoted by the Bidder would be proportionately adjusted with such additions or deletions in quantities

CONTRACT BETWEEN

GUJARAT INFRASTRUCTURE DEVELOPMENT BOARD (GIDB), GANDHINAGAR

And

..... (NAME OF BIDDER)

FOR THE WORK OF

Interior Designing and furniture work done for GIDB, including Interior Furnishing and Furniture work, false ceiling, wall paneling, partition works, glass partition, new washrooms, plastering work, Electrical work, Air conditioning system Fire safety systems etc.

CONTRACT AGREEMENT

This contract (herein after called the "Contract") is made on the ___ day of the month of ____ of 2024 between on the one hand Gujarat Infrastructure Development Board (hereinafter referred as "Client") and on the other hand (herein after referred to as the "Bidder")

This agreement made the _____ day of the month of _____ in the year 2024 BETWEEN, Gujarat Infrastructure Development Board (hereinafter referred as "Client") having its Head Office, at, Gandhinagar and on the other hand (hereinafter referred to as the "Bidder") resident of _____

_____ the sole proprietor of M/s _____ having office at _____/the partnership firm represented by its Managing / duly authorized partner, having an administrative / principal office at _____ / a company / body corporate being its registered office at _____

_____ duly represented at authorised Managing Director, Shri _____ and (hereinafter called the bidder)

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this agreement words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to.

2. The following documents not inconsistent with these presents shall be deemed to form and be read and construed as part of this agreement viz., a) Notice inviting Tender b) MANDATORY INFORMATION FOR PRE –QUALIFICATION © Performa 1,2,3 (4) SECTION -III FORM OF TENDER (5) Annexures (6)General Conditions Of Contract (7) Special Conditions 8) Schedule of quantities (SOQ) includes Prices and tendered amount.9f) Tender drawings. 10) Technical Specifications for the work. 11) Safety code 12) Letter of Acceptance13) Letters from and to the Contractor, if any, leading to and prior to acceptance letter.

In consideration of the payments to be made by the authority to the Contractor the Contractor hereby covenants and agrees with the authority to construct, complete and perform the works in conformity in all respects and subject to all terms and conditions/rules as mentioned in the aforesaid documents which shall form part of this agreement.

IN WITNESS WHEREOF, the parties hereto have caused this contract to be signed in their respective names as of the day and year first above written,

Location: Gandhinagar

Date: - / /2024

Sign:
Authorize Signatory
Gujarat Infrastructure Development
Board (GIDB).

Sign:
Authorize Signatory
.....
(Name of Bidder)

Witness: 1) _____

Witness: 1)

By _____

By _____

Address: _____

Address:

Witness: 2) _____

Witness: 2)

By _____

By _____

Address: _____

Address:

GENERAL CONDITIONS OF CONTRACT

Except where provided for in the description of the individual items in the Schedule of Quantities or B.O.Q. and in the Specification and Conditions laid down hereinafter and in the drawings / instructions, the work shall be carried out as per the Indian Standard Specifications and under the direction of Owner.

1. INTERPRETATION:-

In construing these conditions, the specifications, the Schedule of Quantities, Tender and Agreement, the following words shall have the meaning herein assigned to them except where the subject or context otherwise requires :-

Owner / Employer: GIDB , Gandhinagar

Architect: The Terms Architect shall mean M/s Sarjan Architects and projects Consultant and his / their heirs, legal representatives, assigns and successors.

Contractor: The terms Contractor shall mean M/s.-----
-----, and his / their heirs, legal representatives, assigns and successors.

Site: The site shall mean Authority's premises at GIDB 8th and 9th floor Gandhinagar

The "**Work or Works**" shall mean the works to be executed or done under this contract.

"Act of Insolvency" shall mean any act as such as defined by the Presidency Town Insolvency

Act or in Provincial Insolvency Act or any amending statutes.

“The Schedule of Quantities” shall mean the Schedule of Quantities or Bill of Quantities as specified and forming part of this contract.

“Priced Schedule of Quantities” shall mean the schedule of quantities duly priced with the accepted quoted rates of the Contractor.

“Notice in Writing” or “Written notice” shall mean a notice Written, typed or in printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office address and shall be deemed to have been received when in the ordinary course of post it would have been delivered.

Completion shall mean that the works are in the opinion of the owner complete and fit for acceptance.

-

2. SCOPE OF WORK :-

The work consists of the : TENDER FOR FURNISHING WORK (INCLUDING CIVIL, INTERIOR, ELECTRICAL, AIR ONDITIONING, FIRE FIGHTING & FIRE ALARM SYSTEM) OF GIDB 8th AND 9th FLOOR AT GANDHINAGAR in accordance with the “Scheme for the work and “Schedule of Quantities”. All other ancillary works are within the scope of this tender. It includes furnishing all materials, labour, tools and equipment and management necessary for the incidental to the progress and for completion of the work.

The Owner may in their absolute discretion issue further drawings and / or written instructions /details /orders/ directions and explanations etc. in respect of.....

- a) The variation or modification of the design, quality or quantity of works or the addition or omission or substitution of any work.
- b) Any discrepancy in the drawings or between the schedule of quantities and/ or drawings and / or specifications.
- c) The removal from the site of any defective material brought thereon by the Contractor and the substitution of any other material thereof.
- d) The demolition removal and / or re-execution of any work executed by the Contractor/s.
- e) The dismissal from the work of any persons employed there upon.
- f) The opening up for inspection of any work covered up.
- g) The rectification and making good of any defects under clauses hereinafter mentioned and those arising during the maintenance period (retention period).

The Contractor shall forthwith comply with and duly execute any work as per the Owner's instructions, provided always the verbal instructions, directions and explanations given to the Contractors or his representative upon the works by the Owners shall if involving a variation be confirmed in writing by the Owner to the Contractors within seven days. No works for which rates are not specifically mentioned in the priced schedule of quantities shall be taken up without written permission of the Owner. Rates of items not mentioned in the priced schedule of quantities shall be fixed by the Owner as provided in Clause "Variation".

Regarding all factory made products for which ISI marked products are available, only products bearing ISI marking shall be used in the work. Other products shall be supplied as per the brand name mentioned in the Technical Specifications.

3. DRAWINGS AND INSTRUCTIONS :-

The work shall be executed in conformity with the drawings and instructions.

Immediately after receipt of the work order of the contract, the Contractor shall prepare a progress schedule and The Bar Chart and submit the same to the Owner for approval within 7 days which shall indicate the dates for the starting and completion of the various stages of works.

4. ROYALTIES / PATENTS :-

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.

TECHNICAL EXAMINATIONS :-

The proposed work covered under this tender during its progress or after completion is subject to inspection/examination by the Chief Technical Examiner / Technical Examiner, Central Vigilance Commission, Govt. of India or by an Auditor, Officer of the vigilance Cell of the Authority, on behalf of the Engineer-in-charge. The Contractor will be required to extend all co-operation, assistance and facilities for such inspection and thereafter complying their observation. All the observation of such authorities will be final and binding on the Contractor. If as a result of this examination or otherwise any sum is found to have been overpaid or over certified it shall be lawful for the owner to recover the same. The owner shall have also right to cause a technical scrutiny of the works and the bills of the contractor including all supporting vouchers, challans, abstracts etc. If as a result of this scrutiny any sum is found to have been overpaid or over certified it shall be lawful for the owner to recover the same.

6. SUPERINTENDENCE AND SUPERVISION :-

The Contractor shall give all necessary personal Superintendence during the execution of the work and this obligation and liability will continue until expiration of the "Maintenance Period" (Retention Period). The Contractor shall also during the whole time of work when in progress employ one competent and experienced engineer & one supervisor having technical background who shall be constantly in attention at the site while his men are at work. Any directions, explanations, instructions or notices given by the Owner to such representative shall be deemed to have been given and duly served on the Contractor.

7. FAILURE BY CONTRACTOR TO COMPLY WITH OWNERS/ CONSULTANTS INSTRUCTIONS :-

If the Contractor after receipt of written notice from the Owner requiring compliance within ten days fails to comply with such further drawings and / or Owners / Consultant's instructions, the Owner may employ other person to execute any such work whatsoever that may be necessary to give effect thereto and pay all cost incurred in connection therewith and same shall be recoverable from the Contractor by the Owner as a debt or shall have right to deduct same from any money due or to become due to the Contractor.

8. TENDERER SHALL VISIT THE SITE :-

Before submission of the tender, the intending tenderer is bound to visit the site and make himself thoroughly acquainted with the local site condition, space restrictions, nature and requirements of the works, transport condition, labour and materials, access and storage for materials and removal of rubbish. The tenderer shall have to provide in their tender for cost of carriage, freight and other charges as also for any special difficulties and including police restriction for transport etc., for proper execution of work as indicated in the contract. The successful tenderer will not be entitled to any claim of compensation for difficulties faced by him or losses incurred on account of any site condition / restrictions which existed before the commencement of the work or which in the opinion of the Owner might be deemed to have reasonably been inferred to be so existing, before commencement of work.

9. FILLING OF TENDERS :-

The entire set of tender paper issued to the tenderer shall be submitted fully priced and also signed on the last page of each component together with initials on every page. Initial / Signature will indicate the acceptance of the tender papers by the tenderer.

The schedule of quantities shall be filled in on line-

No modification writings or corrections can be made in the tender papers by the tenderer, but may at his option offer his comments or modifications in a Separate sheet of paper attached to the original tender papers.

The Owner reserves the right to reject the lowest or any tender and also to discharge any or all the tenders for each section or to split-up and distribute any item of work to any specialist

firm or firms, without assigning any reason.

The tenderers shall note that the tender is strictly on the item rate basis and their attention is drawn to the fact that the rates for each and every item shall be correct, workable and self-supporting. If called upon by the Owner detailed analysis of any or all the rates shall be submitted. The Owner shall not be bound to recognize the Contractor's analysis.

The works will be paid for "measured work" on the basis of actual work done.

All items of work described in the schedule of quantities are to be deemed and paid as complete works in all respects and details including preparatory and finishing works involved, directly related to and reasonably detectable from the drawings, specifications and schedule of quantities and no further extra charges will be allowed in this connection.

The Owner has power to add to or omit from any work as shown in drawings or described in specification or included in schedule of quantities and intimate the same in writing but no addition, omission or variation shall be made by the Contractor without authorization from the Owner. No variation shall vitiate the contract.

A Schedule of Probable Quantities in respect of each work and specifications accompany these Special Conditions. The Schedule of Probable Quantities is liable to alteration by omissions, deductions or additions at the discretion of the owner. Each Tender shall contain not only the rates but also the value of each item of work entered in a separate column and all the items shall be totaled in order to show the aggregate value of the entire Tender.

The tenderer must obtain for himself on his own responsibility and at his own expenses all the information which may be necessary for the purpose of making a Tender and for entering into a Contract and must examine the Drawings and must inspect the Site of the work and acquaint himself with all local conditions, means of access to the work, nature of the work and all matters appertaining thereto.

The rate quoted shall be deemed to be for the finished work to be measured at Site. The rates shall also be firm and shall not be subject to exchanged variations, labour conditions, fluctuation in Railway Freights or any conditions whatsoever. GST as applicable will be paid extra

The Contractor shall note that unless otherwise stated, the Tender is strictly on item rate basis and his attention is drawn to the fact that rates for each and every item shall be correct, workable and self-supporting. The quantities in the Schedule of Quantities approximately indicate the total extent of work but may vary to any extent and may even be omitted thus altering the aggregate value of the Contract. No claim shall be entertained on this account.

The Contractor shall visit and examine the Site and satisfy himself as to the nature of the existing road or other means of communication, the character, the extent and magnitude of the work and facilities for obtaining materials and shall obtain generally his own information on all matters affecting the execution of the work. No extra charge made in consequence of any mis-understanding or incorrect information or any of these points or on the grounds of insufficient description will be allowed. All expenses incurred by the Contractor in connection

with obtaining information for submitting this tender including his visits to the Site or efforts in compiling the tender shall be borne by the Tenderer and no claim for reimbursement thereof shall be entertained.

The Contractor has to include in his rates for making / forming access to the work with all temporary arrangement required for the works.

10. TIME - SCHEDULE FOR COMPLETION OF WORK :-

The Contractor shall have to submit a time and progress Bar chart in a form approved by the Owner within seven days from the date of issue of work **order**.

The Contractors shall have to put all their resources and endeavor to complete the work, if possible, earlier than the schedule time shown in the programmed. Keeping the general target dates as given in the Bar Chart of the tender, the Contractors shall have to prepare detailed PERT Network showing in addition to the items already indicated in the programmed other items, the completion of which would affect the overall time schedule of the programmed. This Network programmed shall clearly indicate the completion of project. The Contractors shall have to prepare their own material in flow according to the final Network programmed as accepted by the Owner. The Network programmed shall have to be updated at regular intervals and modified programmed shall be submitted to the Architects / Owner for approval. In no case the overall date for the completion of important items as indicated in the programmed shall be changed without prior consent of Owner.

11. PERMITS AND LICENSES :-

Permits and License for release of materials if any which are under Government control will be arranged by the Contractor. The Owner will render necessary assistance, sign any forms or applications that may be necessary. Charges are to be borne by the Contractor.

12. GOVERNMENT AND LOCAL RULES :-

The Contractor shall conform to the provisions of all local Bye-laws and Acts relating to the work and to the Regulations etc. of the Government and Local Authorities and of any company UNDER WHOSE JURISDICTION the work is to be carried out. The Contractor shall give all notices required by said Act, Rules, Regulations and Bye-laws etc. and pay all fees payable to such Authority/authorities for execution of the work involved. The cost, if any, shall deemed to have been included in his quoted rates, taking into account all liabilities for licenses, fees for footpath encroachment and restoration etc. and **shall indemnify the owner against such liabilities and shall defend all actions arising from such claims or liabilities.**

13. TAXES AND DUTIES :-

The tenderers must include in their tender prices quoted for all duties royalties, cess and sales tax or any other taxes or local charges if applicable. GST as applicable will be paid extra.

If Contractor fails to pay the taxes to the Authorities Concerned, the Owners reserve their

rights to recover the said amount from the amount payable to the Contractor and pay the same to the Authorities Concerned.

14. SETTLEMENT OF DISPUTES :-

Excepted Matters

If any dispute or difference pertaining to the undernoted matters arises, the decision in writing of the supervising Architect / shall be, conclusive and binding on the Contractor/ s.

- a) Written Instructions.
- b) Permissions from Local Authorities.
- c) Proof for quality of materials and the works.
- d) Assigning or sub letting of the contracted works.
- e) The causes of delays and extension of time.
- f) Rectification of defects during the progress and Defects Liability Period.
- g) Contractor's due diligence care and supervision at the works.
 - h) Measurements of works.
- i) Reports on quality and progress of works.
- j) Contractor's abandoning of the contract, partially / fully.
- k) Notice of termination / determination of the contract by the Employer.

15. QUANTITIES FOR ITEMS OF WORK:-

The quantities shown in the schedule of quantities are estimated to cover the entire work but the Owner reserves the right to execute only a part or the whole or any excess thereof without assigning any reason thereof and shall not entertain any claim for compensation except at the rates quoted in the price bid.

The Contractor on his Own shall not execute any work beyond the tender quantities for the various items, unless specifically approved by the Employer.

The contractor is bound to carry out any and all the items of work necessary for the completion of the job even though such items are not included in the quantities and rates. Instructions in respect of such additional items, their quantities and rates will be issued in writing by the Consultant with the prior consent in writing of the Employer.

16. OTHER PERSONS ENGAGED BY THE OWNER :-

The Owner reserves the right to execute any part of the work included in this contract or any work which is not included in this contract, by other Agency or persons and contractor shall allow all reasonable facilities and use of his scaffolding for the execution of such work. The Contractor shall extend all co-operation in this regard.

17. EARNEST MONEY AND SECURITY DESPOSITS :-

The Tenderer will have to deposit EMD of Rs...../- (Rupees only), at the time of

submission of the Tender as an Earnest Money Deposit. The Owner is not liable to pay any interest on the Earnest Money. The Earnest Money of the unsuccessful Tenderers will be refunded without any interest soon after the decision to award the work is taken or after the expiry of the validity period of the Tender.

The successful Tenderer to whom the contract is awarded will have to deposit as **“Performance Security”** a further sum to make up 5% (Two Percent) of the value of the accepted Tender, including the Earnest Money. Performance Security has to be submitted in the form of Demand Draft / Pay Order drawn in favour of, of a nationalized Bank. The Performance Security will have to be paid and also work should be started within two weeks from the date of **work order** failing which the Owner at his discretion may revoke the acceptance and forfeit the Earnest Money Deposit furnished along with the Tender. Performance Security may also be accepted in the form of Bank Guarantee valid up to Defect Liability Period, if requested by the Contractor.

Apart from the Performance Security, Retention Money shall also be deducted from progressive running bills at **5% of the value of each running bills** until the Retention Money equals 10.0% of the accepted tender amount including the Performance Security .

50% of the total Security Deposit will be refundable to the Contractor subject to the following:-

- a) Issue of completion certificate by the owner.
- b) Contractor removes his materials, equipment's, labour force, temporary sheds, stores etc., from the site after completion of the work.

The balance 50% of the Total Security Deposit may be refunded 14 (fourteen) days after the end of Defects Liability Period, provided the contractor has satisfactorily carried out all the work and attended to all the defects in accordance with the Conditions of Contract. No interest is payable on Retention Money and the Initial Security Deposit.

The Initial Security Deposit and Retention Money of the successful Tenderer may be forfeited if he fails to comply with any of the conditions of the contract.

18. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY :-

The Contractor shall provide everything necessary for the proper execution of the work according to the intent and meaning of the drawings, schedule of quantities and specification taken together whether the same may or may not be particularly shown or described therein provided that the same can reasonably be inferred there from and if the Contractor finds any discrepancies therein he shall immediately and in writing, refer the same to the Owner whose decision shall be final and binding.

The rates quoted against individual items will be inclusive of everything necessary to complete the said items of work within the contemplation of the contract, and beyond the unit price, no extra payment will be allowed for incidental or contingent work, labour and / or materials inclusive of all taxes and duties whatsoever.

The Contractor shall supply, fix and maintain at his own cost, for the execution of any work, all tools, tackles, machineries and equipment's and all the necessary centering, scaffolding, staging, planking, timbering, strutting, shoring, pumping, fencing, boarding, watching and lighting by night as well as by day required not only for the proper execution and protection of the said work but also for the protection of the public and safety of any adjacent roads, streets, walls, houses, buildings, all other erections, matters and things and the Contractor shall take down and remove any or all such centering, scaffolding, planking, timbering, strutting, shoring etc., as occasion shall be required or when ordered so to do and shall fully reinstate and make good all matters and things disturbed during the execution of works to the satisfaction of the Owner.

The Contractor shall at all times give access to workers employed by the Owner or any men employed on the buildings and to provide such parties with proper sufficient and if required, special scaffolding, hoists and ladders and provide them with water and lighting and leave or make any holes, grooves etc., in any work, where directed by the Owner as may be required to enable such workmen to lay or fix pipes, electrical wiring, special fittings etc. The quoted rates of the tenderers shall accordingly include all these above mentioned contingent works.

19. TIME FOR COMPLETION / EXTENSION OF TIME & PROGRESS OF WORKS:-

a) **Time of Completion**:- The entire work is to be completed in all respects within the stipulated period. The work shall be deemed to be commenced within one week from the date of work order. Time is the essence of the contract and shall be strictly observed by the Contractor.

The work shall not be considered as complete until the Owner has certified in writing that this has been completed and the Defects Liability Period shall commence from the date of such certificate.

b) **Extension of Time** :- If in the opinion of the Owner the works delayed (a) by reason of any exceptionally inclement weather, or (b) by reason of instructions from the Owner in consequence of proceedings taken or threatened by or disputes, with adjoining or neighboring Owner or (c) by the works, or delay of other Contractor or tradesmen engaged or nominated by the Owner and not referred to in the specifications or (e) by reason of any combination of workmen or strikes or lock-out affecting any of the building or trades or (f) from other causes which the Owner may consider are beyond the control of the Contractor, the Owner at the completion of the time allowed for the contract shall make fair and reasonable extension of time for completion in respect thereof. In the event of the Owner failing to give possession of the site upon the day specified above, the time of completion shall be extended suitably.

In case of such strikes or lockouts, as are referred to above, the Contractor shall immediately give the Owner, written notice thereof. Nevertheless, the Contractor shall use his best endeavors to prevent delay and shall do all that may be reasonably required to the satisfaction of the Owner to proceed with the works and on his doing so that it will be ground of consideration by the Owner for an extension of time as above provided. The decision of the Owner as to the period to be allowed for an extension of time for completion hereunder (which decision shall be final and binding on the Contractor) shall be promulgated at the conclusion of such strike or lock-out and the Owner shall then, in the event of an extension being granted, determine and declare the final completion date.

The provision in Clause with respect to payment of liquidated damages shall, in such case, be read and construed as if the extended date fixed by the Owner were substituted for and the damage shall be deducted accordingly.

- c) **Progress of Work:** - During the period of execution of work, the Contractor shall maintain proportionate progress on the basis of a Programmed Chart submitted by him immediately before Commencement of work and agreed to by the Owner. Contractor shall also include planning for procurement of scarce material well in advance and reflect the same in the Programmed Chart so that there is no delay in completion of the Project.

20. PROTECTIVE WORKS AND MEASURES:-

The Contractor from time to time of being placed in possession of the site must make suitable arrangements for watching, lighting and protecting the work, the site and surrounding property by day, by night, on all holidays.

The Contractor shall indemnify the Owner against any possible damage to the building, roads or members of the public in course of execution of the work.

The Contractor shall provide necessary temporary enclosures, gates, entrances, etc., for the protection of the work and materials and for altering and adopting the same as may be required and removing on completion of the works and making good all the work disturbed.

21. TOOLS:

All the tools including theodolite, levels, prismatic compass, chain, steel and metallic tapes and all other surveying instruments found necessary on the works shall be provided by the Contractor for the due performance of this contract as instructed by the owner.

All measuring tapes shall be of steel and suitable scaffolding and ladders that may be required for safely taking measurement and shall be supplied by the Contractor.

The mistries and the supervisors on the works shall carry with them always a one meter or two meter steel tape, a measuring tape of 30 meters, a spirit level, a plumb bob and a square and shall check the work see that the work is being done according to the drawing and specifications. The Site Engineer will use any or all measuring instruments or tools belonging to the Contractors as he chooses for checking the works executed or being executed on the contract.

The Contractor shall cover in his rates for making provisions for all reasonable facilities for the use of his scaffolding tools and plant etc., by nominated Sub-Contractors for their work.

22. CONTRACTOR IMMEDIATELY TO REMOVE ALL OFFENSIVE MATTERS:-

All soil, filth or other matters of any offensive nature taken out of any trench, sewer, drain, cesspool or other place shall not be deposited on the surface but shall be at once carted away by the contractor to the municipal approved dumping ground

The contractor shall arrange for the disposal of the debris etc. so accumulated to the

satisfaction of the Employer and local authority and no claims will be entertained afterwards if he does not include in his rates for the purpose.

23. ACCESS:-

Any authorized representative of the Owner shall at all reasonable times have free access to the works and / or to the workshops, factories or other places where materials are being prepared or constructed for the work and also to any place where the materials are lying or from where they are being obtained, and the Contractor shall give every facility to the Owner or their representatives necessary for inspection and examination and test of the materials and workmanship. Except the representative of the Owner no person shall be allowed at any time without the written permission of the Owner. The representative of owners shall also include the officers from Head Office and Government official assign with such duties.

24. MATERIALS, WORKMANSHIP, SAMPLES, TESTING OF MATERIALS:-

All the works specified and provided for in the specifications or which may be required to be done in order to perform and complete any part thereof shall be executed in the best and most workmanlike manner with materials of the best and approved quality of the respective kinds in accordance with the particulars contained in and implied by the specifications and as represented by the drawings or according to such other additional particulars, and instructions as may from time to time be given by the Owner during the execution of the work, and to his entire satisfaction.

If directed by the Owner the Contractor shall have to carry out tests on materials and workmanship in approved materials testing laboratories or as prescribed by the Owner at contractor's own risk and cost to prove that the materials etc. under test conform to the relevant I.S. Standard specifications or as specified in the tender specifications.

All the materials (except where otherwise described) stores and equipment required for the full performance on the work under the contract must be provided through authorized channels and must include charge for import duties, sales tax, octroi and other charges and must be the best of their kind available and the Contractor shall be entirely responsible for the proper and efficient execution of the work. The work must be done in the best workmanlike manner. Samples of all materials to be used must be submitted to the Owner when so directed by the Owner and written approval from Owner must be obtained prior to placement of order.

During the inclement weather the Contractor shall suspend work for such time as the Owner may direct and shall protect from injury/damage all work when in course of execution. Any damage to any part of the work for any reason due to rain, storm, or neglect of Contractor shall be rectified by the Contractor in an approved manner at no extra cost.

Should the work be suspended by reason of rain, strike, lockouts or any other cause, the Contractor shall take all precautions necessary for the protection of work and at his own

expenses shall make good any damage arising from any of these causes.

The Contractor shall cover up and protect from damage, from any cause, all new work and supply all temporary doors protection to windows, and any other requisite protection for the execution of the work whether by himself or special tradesmen or nominated Sub-Contractor and any damage caused must be made good by the Contractor at his own expenses.

Materials shall be of approved quality and the best of their kind available and shall generally conform to I.S. Specifications. The Contractor shall order all the materials required for the execution of the work as early as necessary and ensure that such materials are on site well ahead of requirement for use in the work. The work involved calls for high standard of workmanship combined with speed and to the entire satisfaction of the Architects.

25. REMOVAL OF IMPROPER WORK:-

The Owner have power to order, from time to time, the removal from the site, any materials or the work which in the opinion of the Owner are not in accordance with specification or instructions, substitution or proper re-execution of any work executed with materials or workmanship not in accordance with the drawings and specifications or instructions. In case the Contractor neglects / refuses to comply with the order, the Owner have the power to employ and pay other agencies to carry out work and all expenses consequent thereon or

Incidental thereto as certified by the Owner shall be borne by the Contractor or may be recovered from any money due to or that may become due to the Contractor or should be claimed from the contractor, if nothing is due to him. No certificate which may be given by the Architects shall relieve the Contractor from his liability in respect of unsatisfactory or bad works / materials.

26. SITE ENGINEER

The term "Site Engineer" shall mean the person / agency appointed and paid by the Owner to superintend the work. The Contractor shall afford the Site Engineer / Employer every facility and assistance for examining the work and materials and for checking and measuring work and materials. The Site Engineer shall have no power to revoke, alter, enlarge or relax any obligation / requirement of the Contractor or to sanction any work, additions alternations, deviations or omissions or any extra work whatever except in so far as such authority may be specially conferred by a written order of the Owner.

The Site Engineer shall have power to give notice to the Contractor or his foreman, of non-approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the Owner is obtained. The work will be examined by the Engineer from the Premises Department of the Owner and the Site Engineer from time to time. But such examination shall not in any way exonerate the Contractor from the obligation to remove defects, which may be found to exist at any stage of the work or after the same is complete. Subject to the provisions of this contract, the Contractor shall take instructions only from the Owner.

27. CONTRACTOR'S EMPLOYEES:-

The Contractor shall employ technically qualified and competent supervisors for the work who shall be available (by turn) throughout the working hours to receive and comply with instructions of the Owner / Architect. The Contractor shall engage at least one experienced Engineer as Site-in charge and also a supervisor with technical background for execution of the work. The Contractor shall employ in connection with the work persons having the appropriate skill or ability to perform their job efficiently.

The Contractor shall employ local labourers on the work as far as possible.

No labourer below the age of sixteen years and who is not an Indian National shall be employed on the work.

Any labourer supplied by the Contractor to be engaged on the work on day-work basis either wholly or partly under the direct order or control of the Owner or his representative shall be deemed to be a person employed by the Contractor.

The Contractor shall have to comply with the provision of all labour legislation including the requirements of

- a) The Payment of Wages Act.
- b) Employer's Liability Act.
- c) Workmen's Compensation Act.
- d) Contract Labour (Regulation & Abolition) Act, 1970 and Central Rules 1971.
- e) Apprentices Act 1961.
- f) Minimum Wages Act
- g) Any other Act of enactment relating thereto and rules framed there under from the time to time.

The Contractor shall keep the Owner saved harmless and indemnified against all the claims if any of the workmen and shall pay all costs and expenses as may have to be incurred in connection with any claim that may be made by any workmen / third party.

The contractor shall comply at his own cost with the order of requirement of any Health Officer of the State or any local authority or of the Employer regarding the maintenance of proper environmental sanitation of the area where the contractor's labourers are housed or accommodated, for the prevention of small pox, cholera, plague, typhoid, malaria and other contagious diseases. The contractor shall provide, maintain and keep in good sanitary condition adequate sanitary accommodation and provide facilities for pure drinking water at

all times for the use of men engaged on the works and shall remove and clear away the same on completion of the works. Adequate precautions shall be taken by the Contractor to prevent nuisance of any kind on the works or the lands adjoining the same.

The Contractors shall arrange to provide first-aid treatment to the labourers engaged on the works. He shall within 24 hours of the occurrence of any accident at or about the site or in connection with execution of the works, report such accident to the Owner and also to the competent authority where such report is required by law.

The Contractors shall fulfil the requirements of the Employees State Insurance Act, 1948, applicable to all States, towards their employees and keep all the required record regarding the same for inspection by the Authorities Concerned at any time. The Contractor shall indemnify Authority, against any claim or legal action arising out of the said Act due to the failure of non-compliance of the provisions of the said Act and the penalty or any other amount levied by the authorities, shall be recoverable from the payments due to the Contractors.

The Contractor shall comply with the provisions of the Apprentices Act, 1961, and the Rules and Orders issued there under from time to time. Failure to do so will be in a breach of the Contract and the Owner may in their discretion cancel the contract. The Contractor shall also be liable for any pecuniary or other liabilities arising on account of any violation by him of the provisions of the Act.

The Contractor shall be responsible for the observance of all Central Rules and Regulations framed by the Central Government under the Contract Labour (Regulation and Abolition) Act, 1970. The Owners shall be entitled to deduct all damages, which it might suffer on account payable to the Contractor.

28. DISMISSAL OF WORKMEN:-

The Contractor shall on the request of Owner immediately dismiss from works any person employed thereon by him, who may in the opinion of the Owner be unsuitable or incompetent or who may misconduct himself. Such discharges shall not be the basis of any claim for compensation or damages against the Owner or any of their officer or employee.

29. ASSIGNMENT:-

The whole of the works included in the contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or underlet the contract or any part, share or interest therein nor, shall take a new partner, without written consent of the Owner and no subletting shall relieve the Contractor from the full and entire responsibility of the Contractor or from active superintendence of the work during their progress.

30. NOMINATED SUB-CONTRACTORS:-

All specialists, Merchants, Tradesmen and other executing any work or supply and fixing any goods for which prime cost prices or provisional sums are included in the Schedule of Quantities / Rates and / or specification who may be nominated or selected by the Owner are

hereby declared to be Sub-Contractors employed by the Contractor and are herein referred to as nominated Sub-Contractors.

No nominated Sub-Contractor shall be employed on or in connection with the works against whom the Owner shall make reasonable objection or save where the Owner the Contractor shall otherwise agree who will not enter into a contract provided:

- a) That the nominated Sub-Contractor shall indemnify the Contractor against the same obligations in respect of the Sub-Contract as the Contractor is under in respect of this contract.
- b) That the nominated Sub-Contractor shall indemnify the Contractor against claims in respect of any negligence by the Sub-Contractor, his servants or agents or any misuse by him or them of any scaffolding or other plants the property of the Contractor or under any workmen's compensation Act in force.
- c) Payment shall be made to the nominated Sub-Contractor by the Contractor within fourteen days of his receipt of the Architect's Certificate provided that before any certificate is issued, the Contractor shall upon request furnish to the Architect proof that all nominated Sub-Contractor's accounts included in previous certification have been duly discharged, in default where of the Owner may pay the same upon a certificate of the Architect and deduct the amount thereof from any sums due to the Contractor. The exercise of this power shall not create private of contract between the Owner and the Sub-Contractor.

31. DAMAGE TO PERSONS AND PROPERTY INSURANCE ETC.:-

The Contractor shall be responsible for all injuries to the work or workmen, to persons, animals or things and for all damages to the structural and / or decorative part of property which may arise from the operations or neglect of himself or any Sub-Contractor or of any of his or a Sub-Contractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract. The clause shall be held to include inter-alia, any damage to buildings whether immediately adjacent or otherwise, and any damage to roads, streets, foot paths or ways as well as damages caused to the buildings and the work forming the subject of this contract by rain, wind or other inclemency of the weather. The Owner stands indemnified by the Contractor in respect of all and any expenses arising from aforesaid and also in respect of any claim made in respect of injury or damage under any acts of compensation or damages consequent upon such claim.

The Contractor shall restore and reinstate all damages of every sort mentioned in this clause, so as to deliver the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damages to the property or third parties.

The Contractor shall have to effect the necessary insurance cover. The Owner stands indemnified entirely from all responsibility and the liabilities in this respect.

The insurance cover must be obtained from / placed with a company approved by the Owner and must be taken in the name of the Owner and the Contractor jointly (the name of the owner being placed first in the policy) and the policy lodged with owner The scope of insurance cover is also to include cost of damage or loss to the contractor till the work is in a

completed stage. Insurance is compulsory and must be affected from the very initial stage. The Contractor shall also be responsible for anything, which may be excluded from damage to any property arising out of incidents; negligence or defective carrying out of this contract i.e. the Contractor All Risk Insurance shall have extension for covering cross liability arising, if any, during execution of work.

The Owner shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs, charges and expenses arising or accruing from or in respect of any such claim or damages from any sums due or to become due to the Contractor or in extreme case to lodge a claim against the contractor.

32. INDEMNIFICATION AND INSURANCE:-

The owner at all times stands indemnified by the contractor for any loss what so ever to the GIDB (The Employer) / to its property by theft, fire and / or earthquake, injury / death of the workers, GIDB's Employees and third party and the contractor shall obtain C.A.R. policy in joint name first being that of the owner.

Unless otherwise instructed the Contractor shall insure the works and keep them insured until the virtual completion of the contract against loss or damage by theft, fire and / or earthquake, flood etc. The insurance must be taken from a company approved by the Owner, in the joint names of the Owner and the Contractor for such amount and for any further sum if called to do so by the Owner,

The Contractor shall deposit the policy and receipt for premiums paid with the Owner within 15 (fifteen) days from the date of issue of work order unless otherwise instructed. In default of the Contractor insuring as provided above, the Owner on his behalf may so insure and may deduct the premiums plus administrative expenses paid, from any money due, or which may become due to the Contractor. The Contractor shall as soon as the claim under the policy is settled or the work reinstated by the Insurance Company shall they elect to do so, proceed with due diligence with the completion of the works in the same manner as though the loss has not occurred and in all respects under the conditions of the contract. The Contractor in case of rebinding or reinstatement after loss, shall be entitled to extension of time for completion as the Owner may deem fit.

33. ACCOUNTS, RECEIPTS AND VOUCHERS:-

The Contractor shall, upon the request of the Owner furnish them with all the invoices, accounts, receipts and other vouchers that they may require in connection with the works under this contract. If the Contractor shall use materials less than that what he is required under the contract, the value of the difference in the quantity of the materials he was required to use and that he actually used shall be deducted from his dues. The decision of the Owner shall be final and binding on the Contractor for any work under this contract.

34. MEASUREMENT OF WORK:-

- a) The measurement shall be generally done by the Site Engineer or by an architect appointed by the Authority, specially authorized for the purpose.

- b) The Consultant/Site Engineer engaged by the Authority shall take joint measurements (i.e. accompanied by the Contractor's authorized representative) of the work as it progress and record them directly in the Measurement Books.
- c) It shall be ensured that the method of measurement is in accordance with the contract. The precision in measurements shall be as laid down in IS-1200. Any points of disagreement with the Contractor pertaining to measurements shall be promptly referred to the decision of the Owner.
- d) Extra / deviated items, as claimed by the Contractor, shall not be recorded in Measurement Book until they are approved by the Owner.
- e) In case some allegedly extra / deviated item is carried out by the Contractor while complying with approved drawings and specifications and the same is to be covered up. The Site Engineer shall check the item and its specification and record its measurements but simultaneously enter up the provision that their admittance is subject to the approval by the Owner. Both the measurements and the provision shall be got signed by the Contractor.
- f) The Measurement Book shall not be handed over to the Contractor at any time. The Contractor or his representative may be permitted by the Site Engineer to see it in his presence and / or make a (concurrent) copy of his own. The Contractor shall, however, be warned that his copy shall be regarded as an unofficial copy of the Authority's Measurement Book. Which is the only authorized official document in the matter.
- g) The measurement shall be signed at the end of each session of measurement of the day's work, as the case may be, by both the parties (i.e. the Employer / Site Engineer and the Contractor)

35. CONCEALED WORK:-

The Contractor shall give due notice to the Employer whenever any work is to be buried in the earth, concrete or in the walls or otherwise, becoming inaccessible later on, in order that the work may be inspected and correct dimensions taken before such burial, in default whereof the same shall, at the opinion of the Employer be either opened up for measurement at the Contractor's expenses or no payment may be made for such materials, shall any dispute or difference arise after the execution or any work as to measurements etc. or other matters which cannot be conveniently tested or checked, the notes of the employer shall be accepted as correct and binding on the Contractor.

36. PAYMENTS:-

All bills shall be prepared by the Contractor in the form prescribed by the Owner / Architects after the measurements are endorsed as mentioned in a Clause above (named as 'Measurement of Works'), subject to minimum value for interim certificate as stated in this document. The bills in proper forms along with detailed measurements in support of the quantities of work done and other supporting documents and must show deductions for all

previous payments, retention money, etc.

The Owner will deduct retention money as described in relevant Clause above of these conditions. The refund of retention money will be made as specified in the said clause.

If the Owner has supplied any materials or goods to the Contractor, the cost of any such materials or goods will be deducted from the amount due to the Contractor in accordance with the quantities consumed in the work or in one lot, depending up on the situation.

All the interim payments shall regarded payments subject to and against the final payment only and not as payments for work done and completed and shall not preclude the requiring of 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 any respect of the accruing of any claim, not shall, it conclude determine or affect in anyway the power of the Owner under these conditions or any of them as to the final settlement and adjustment of the accounts or otherwise or in any other way vary or affect the contract. The final bill shall be submitted by the Contractor within one **month** of the date fixed for completion of the work or of the date of certificate of completion furnished by the owner and payment shall be made within four months from the date of receipt of the certificate from the consultant..

FINAL BILL PAYMENT:-

The final bill shall be accompanied by a certificate of completion from the Owner. Payments of final bill shall be made after deduction of Retention Money etc as specified in the relevant Clause above, which sum shall be refunded after the completion of the Defects Liability Period after receiving the Owner's certificate that the Contractor has rectified all defects to the satisfaction of the Owner. The acceptance of payment of the final bill by the Contractor would indicate that he will have no further claim in respect of the work executed.

37. MONTHLY STATEMENT OF VARIATIONS / DEVIATIONS / EXTRA ITEMS:-

The Contractor may when authorized by the Owner and shall, when directed in writing by the Employer to add or omit, or vary the works shown in the drawings or described in the specifications or included in the priced schedule of quantities. The Contractor on his own accord shall make no addition, omission or variation without such authorization or direction. A verbal authorization or direction by the Employer shall when confirmed correctly by the Contractor in writing within 8 days shall be deemed to have been given in writing.

The Contractor shall send to the Employer once in every month a statement giving particulars, as full and detailed as possible, of all claims for any additional payment to which the Contractor may consider himself entitled and of all deviated or extra or additional work ordered by the Employer which he has executed during the preceding month.

The rates for additional, altered, substituted work shall be arrived in accordance with following rules:

a) The net rates of prices in the contract schedule shall determine the valuation of (the rates

for) the extra work (items) where such extra work is of similar character and is executed under similar conditions as the work priced therein.

- b)** If the rates for the extra, altered or substituted (deviated) work are not provided for (available) in the contract schedule, they shall to the extent possible be derived out of rate given in that schedule for similar or near similar items. For the purpose of such deviation, where necessary and when so directed, the Contractor shall furnish detailed analysis for the said similar or near similar items in the contract schedule. For such portions of the analysis, for the extra, altered or substituted (deviated) work for which prices cannot be abstracted from the corresponding analysis of rates for the said similar or near similar items in the contract schedule, market rates substantiated by purchase bills / vouchers dependable printed price schedules of building materials of different types and prevailing Labour rate shall be adopted, adding 15% over towards profits and overheads. When called upon to do so the Contractor shall submit the required purchase bill / vouchers.

38. PREPARATION FOR OCCUPATION AND USE AFTER COMPLETION:-

The whole work will be thoroughly inspected by the Contractor and deficiencies and defects shall be put to right. On completion of such inspection the Contractor shall inform the Employer that he has completed the work and it is ready for inspection.

On completion the Contractor shall clean all windows and doors including the cleaning, removing hand / finger stains and oiling if necessary, of all hardware, inside and outside, all floors, staircase, and every part of the building. He will leave the entire building neat and clean to the satisfaction of the Owner.

39. CLEARING SITE ON COMPLETION:-

On completion of the works the Contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and the works clean and in a workmanlike condition to the satisfaction of the Owner.

40. P.V.A. IN THE QUOTED RATES:-

The rate quoted shall be firm throughout the tenure of the contract (including extension of time, if any, granted) and will not be subject to any fluctuation due to increase in cost of materials, labour, sale tax, octroi, etc.

41. SUSPENSION OF WORK:-

If the Contractor except on account of any legal restraint upon the Owner preventing the continuance of the work or in the opinion of the Owner shall neglect or fail or proceed with

due diligence in the performance of his part of the contract or if he shall more than once make default, the Owner shall have the power to give notice in writing to the Contractor requiring the work be proceeded within a reasonable manner and with reasonable dispatch, such notice purport to be a notice under this Clause.

42. TERMINATION OF CONTRACT BY THE OWNER:-

If the Contractor being a company go into liquidations whether voluntary or compulsory or being a firm shall be dissolved or being an individual shall be adjudicated insolvent or shall make an assignment or a composition for the benefit of the greater part, in number of amount of his creditors or shall enter into a Deed or arrangement with his creditors, or if the Official Assignee in insolvency or the Receiver of the Contractor in insolvency shall repudiate the contract, or if a Receiver of the Contractor's firm appointed by the Court requiring him to do so, to show to the reasonable satisfaction of the Owner that his ability to carry out and fulfill the Contract, and if so required by the Owner to give reasonable security therefore, or if the Contractor shall suffer execution to be issued, or shall suffer any payment under this contract to be attached by or on behalf of and of the creditors of the Contractor, or shall assign, charge or encumber this contract or any payments due or shall neglect or fail to observe and perform all or any of the acts matters of things by this contract, to be observed and performed by the Contractor within three clear days after the notice shall have been given to the Contractor in manner hereinafter mentioned requiring the Contractor to observe or perform the same or shall use improper materials or workmanship in carrying on the works, or shall in the opinion of the Owner not exercise such diligence and make such due progress as would enable the work to be completed within due time agreed upon and shall fail to proceed to the satisfaction of the Owner after three clear days notice requiring the Contractor so to do shall have been given to the Contractor as hereinafter mentioned, or shall abandon the contract, then and in any of the said cases, the Owner may notwithstanding previous waiver determine / terminate the contract by a notice in writing to the effect as hereinafter mentioned, but without thereby affecting the powers of the Owner of the obligations and liabilities of the Contractor the whole of which shall continue in force as fully as if the contract, had not been so determined and as if the work subsequently executed had been executed by or on behalf of the Contractor (without thereby creating any trust in favour of the Contractor) further the Owner or his agent, or servants, may enter upon and take possession of the work and all plants, tools, scaffoldings, sheds, machinery, steam and other power, utensils and materials lying upon premises or the adjoining lands or roads and sell the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing any others contractors or other persons or person to complete the works, and the Contractor shall not in any way interrupt or do any act, matter or things to prevent or hinder such other Contractors or other persons or person employed from completing and finishing or using the materials and plants for the works when the works shall be completed, or as soon thereafter as conveniently may be, the Owner shall give notice in writing to the Contractor to remove his surplus materials and plants and shall the Contractor fail to do so within a period of 14 days after receipt by him the Owner may sell the same by Public Auction and shall give credit to the losses incurred by the Owner in getting the works carried out through other agency and the amount payable to the agency shall be adjusted against the amount payable to the Contractor by way of selling his tools and plants or dues on account of work carried out by the Contractor or against

the Security Deposit and by raising claims for the balance recoverable amount..

Without prejudice to any of the rights or remedies under this contract, if the Contractor, being an individual expires, the Employer shall have the option of termination of the contract without incurring any liability for such termination.

43. WATER SUPPLY AND ELECTRICITY :-

The rates quoted by the Contractor shall include all expenditure for providing water for the full contract period required for the works, including that for the work people and all staff on the site. He shall make his own arrangement for the supply of good quality water suitable for use in the works and the work people. He shall obtain municipal connection, and all charges for connection and consumption shall be borne by him. If municipal water is not available, or inadequate, he shall make other arrangements like transport from outside by tanker, or any other suitable means entirely at his cost, and no separate payment for the same will be made. If water is not made available by the Authorities Concerned and shall it become necessary for the Contractor to bring water from outside by tankers and store in the separate steel tanks and shall not allow to mix with existing municipal connection. However the Employer shall not be liable to pay any charges separately in connection therewith. Special care shall be taken by the Contractor for curing the exposed surfaces of cement work. For this purpose, the contractor should use portable water tank of adequate size fitted with motor for each block. Electricity for running the motor or any other equipment required should be arranged by the contractor. In case, water and electricity is arranged by the Authority, charges towards the same shall be recovered @ 1 % of tender cost for water and 1 % of tender cost for electricity.

44. MODE OF MEASUREMENT :-

Unless otherwise mentioned elsewhere in the tender measurement will be for the net quantities or work produced in accordance with upto date rules laid down by the Indian Standard Institution. In the event of any dispute with regard to the measurement of the work executed, the decision of the Owner shall be final and binding on the Contractor.

45. ACTION WHERE NO SPECIFICATION :-

In the case of any class of work for which there is no such specification in Technical Specification, such work shall be carried out in accordance with the I.S. Specification and in the event of there being no I.S. Specification, then in such case the work shall be carried out in all respects in accordance with the instructions and requirements of the Owner.

46. CONTRACTOR NOT TO STORE MATERIALS IN A MANNER THAT MAY INCONVENIENCE TO THE EMPLOYER / PUBLIC OR STAFF MEMBERS:-

The Contractors shall not deposit / store materials on any site which will inconvenience the Employer. The owner may instruct the Contractor to remove any materials which are considered by him to be a danger or inconvenience to the Employer and cause them to be removed at the Contractors cost.

47. LIQUIDATED DAMAGES:-

Shall the work be not completed to the satisfaction of the Owner with in the stipulated period, the Contractor shall be bound to pay to the Owner a sum calculated at the rate of 1.0% of the cost of the work (As shown in the tender) per week of delay subject to a maximum of 10.0% of the actual project cost or contract sum whichever is more, by way of liquidated damages, for the period during which the work remains incomplete or unfinished after the expiry of the due / extended completion date.

48. WRITTEN GUARANTEE FOR THE SPECIALISED WORKS :-

Wherever provision for submission of a written guarantee has been advised, the same shall be submitted from the specialized agency along with a counter guarantee by the main Contractor engaged for the work before receiving any payment from the employer, against such items of work be furnished on a non-judicial stamp paper of appropriate value. The guarantee shall however come into the force from the date of the completion of the entire contracted work.

49. INCOME TAX / SALES TAX ON WORKS CONTRACT :-

Statutory deduction of Income Tax / Sales Tax on work contract shall be made from all the ad-hoc, interim and final payments as per laws applicable.

50. AGREEMENT :-

The successful Contractor will be required to enter into an agreement in accordance with the Draft Agreement form enclosed and the schedule of conditions within 15 days from the date of work order is advised by the Owner that his tender has been accepted and he shall pay for all stamps and legal expenses incidental thereto. However, the written acceptance by the

Owner of a tender will constitute a binding contract between the Owner and the person so tendering whether such formal agreement is or is not subsequently executed.

51. NO COMPENSATION FOR ALTERATION IN, OR RESTRICTION OF WORK TO BE CARRIED OUT :-

If at any time after the commencement of the work, the Owner shall for any reason whatsoever not require the whole work thereof as specified in the tender to be carried out the Owner shall give notice in writing of the fact to the Contractor who shall have no claim to any payment or compensation whatsoever on account of any profit or advantage with which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out; neither shall he have any claim for compensation by reason of any alterations having been made in the original specification, drawing, design and instructions which shall involve any curtailment of the work as originally contemplated.

The Contractor shall not be entitled to any compensation for any loss suffered by him on account of delays in commencing or executing the work, whatever the case of delays may be, including delays arising out of modifications to the work entrusted to him or in any sub-contract connected therewith or delays in awarding Contracts for other trades if the project or in commencement or completion of such works or in procuring Government controlled or other building materials or in obtaining water and power connection for the work or for the other reason whatsoever and the Employer shall not be liable for any claim in respect thereof. The Employer does not accept liability for any sum besides the Tender amount, subject to such variation as are provided for herein.

52. RIGHTS OF TECHNICAL SCRUTINY OF BILLS :-

The Employer shall have right to cause a technical examination of the works and the final bill of the Contractor including all supporting vouchers, abstracts, etc., to be made at the time of payment of the final bill. If as a result of this examination or otherwise any sum is found to have been overpaid or over certified, it shall be lawful for the Employer to recover the sum.

53. WEEKLY REPORTING TO THE OWNER -

WEEKLY REPORTS on Labour, Materials, Progress and Hindrances shall have to be submitted by the Contractor. A set of **PHOTOGRAPHS (8" X 6")- mini. 2 no.** for each building shall also be submitted once a month.

54. ARBITRATION :-

All disputes or difference of any kind whatsoever (except for excepted matters vide Clause No.14 earlier) which shall at any time arise between the parties hereto touching or concerning the works or the execution or maintenance thereof of this contract or the rights touching or concerning the works or the execution of maintenance thereof of this contract or the construction remaining operation or effect thereof or to the right or liabilities of the parties or arising out of or in relation thereto whether during or after determination foreclosure or breach of the contract (other than those in respect of which the decision of any person is by the contract expressed to be final and binding) shall after written notice of 60 days by either party to the contract to the other of them and to the Employer hereinafter mentioned be referred for adjudication to a **Sole Arbitrator** to be appointed as per the provisions of law.

If the Arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another Sole Arbitrator shall be appointed as per the Law.

The work under the Contract shall, however, has to continue during the Arbitration proceeding and no payment otherwise due to the Contractor shall be withheld on account of such proceedings.

The Arbitrator shall be deemed to have entered on the reference on the date he issued to both the parties fixing the date of the first hearing.

The Arbitrator may from time to time, with the consent of the parties, enlarge the time for making and publishing the award.

The Arbitrator shall give a separate award in respect of each dispute or difference referred to his. The Arbitrator shall decide each dispute in accordance with the terms of the contract and give a reasoned award. The venue of arbitration shall be such place as may be fixed by the Arbitrator in his Sole discretion.

The fees, if any, of the Arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award including the fees, if any, of the Arbitrator who may direct to and by whom and in what manner, such costs or any part thereof shall be paid and may fix or settle and amount of costs to be so paid.

The award of the Arbitrator shall be a reasoned Award.

Subject to aforesaid, the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force, shall apply to the Arbitration proceeding under this clause.

The Employer and the Contractor hereby also agree that arbitration under clause shall be a condition precedent to any right to action under the contract with regard to the matters hereby expressly agreed to be so referred to arbitration.

55. DECLARATION :-

I / We have inspected the site of works and have made me/us fully acquainted with the local conditions in and around the sites works. I / We hereby declare that I/We have gone through the conditions laid down in the Notice Inviting Tender, General Conditions of Contract, Technical Specifications and understood the same on the basis of the same I / We quoted our rates in the schedule of quantities with the tender document.

I / We shall also uniformly maintain such progress with the work, as may be directed by the Owner to ensure completion of the same within the target date as mentioned in the tender document.

Date

Witness :

Signature of Tenderer

Address _____

SPECIAL CONDITIONS OF CONTRACT

The contractor has to follow some necessary special conditions are:

- Contractor shall have to make storage facilities by making godown for the material.
- The Contractor shall cover all his equipment and Materials: at site with requisite insurance against theft, larceny, decoity, fire, tempest, flood, earthquake, etc.
- On completion of the Work undertaken by the Contractor, he shall removed all temporary Work erected by him and have the site cleaned as directed by the Engineer-in-Charge. The Authority reserves the right to ask the Contractor any time during the pendency of the Contract to vacate the land by giving 7 days' notice on security reasons or in national interest or otherwise.
- The contractor shall have to submit photographs daily during various stages of project execution activity for each of the work at no extra cost.
- For proper Maintenance & Cleaning of premises, one In-charge/technical supervisor must be deployed & will be responsible for attending & resolving all the complaints timely.
- All the Material to be used in the Project must be approved by Engineer In-charge / Consultant before commencing the work.
- Contractor has to provide full time qualified 1(One) Engineer having experience of 2 years in execution of similar projects.
- If any changes required in drawings during site execution Architect / Authority have to all right to modify it and contractor have to bound to follow the decision accordingly.
- Contractor has to provide Private Transportation services (Four-wheel car) to Authority/ Consultant / Architect during site execution.
- Contractor has to submit daily / weekly and monthly progress report to EIC / authority & consultant.
- Contractor has to do make up sample of each item as suggested by EIC / Consultant and only after approval of sample further work should be done.
- The detailed specifications given hereafter are for items of works described in the Schedule of quantities attached herein and shall be guidance for proper execution of work to the required standards.
- It may also be noted that the specification are of generalized nature and these shall be read in conjunction with the description of item in schedule of quantities and Drawings.
- The work also includes all minor details of project which are obviously and fairly intended and which may not have been referred to in these documents but are Essential for the entire completion in accordance with standard engineering practice.
- The architects, engineer-in-charge and the Employer shall be the sole deciding authority as to the meaning, interpret and implication for various provisions of the specifications and his Decision in writing shall be final and binding on all concerned.

- **MATERIALS TO BE APPROVED/ BEST QUALITY:** The whole of the materials, deployed in connection with the permanent work, shall be new and the best of its kind. All materials shall be in accordance with these specifications and shall be in approved by the architect/ engineer-in-charge.
- **STANDARDS:** Except where otherwise specified and permitted by the architect, all materials shall conform to the latest edition of Indian standard specification.
- The payment shall be made as per actual execution of works.
- All or any extra work involved shall be got approved in writing from architect - consultant/ engineer-in-charge before executing the same.
- The rate for individual item shall include the cost of materials, Labour, finishing etc. to complete the whole work satisfactorily as per instructions of engineer-in-charge.
- For any of the BOQ individual items, no extra payment will be given for any of the Reasons.
- Item rate to be inclusive of all material, wastage, groove, adhesives, hardware, necessary tools tackets, erection, execution, polishing, painting, finishing, cleaning, etc.
- **Contractor shall arrange for all type of sample for mockup room and shop drawings as per BOQ item without any extra cost, for approvals. Contractor have to submit as built drawings after project completion. Before final bill set up.**
- The measurement shall be as per mode of measurements are given in tender specifications and measured as per site condition.
- Contractor has to complete all mockups as per the selection by the architect/ E.I.C at his own cost and has to do necessary changes as per the site require & suggestion.
- Contractor has to covered with the flooring with 4/5 mm PVC sheet and it should joint with taping and pasting on flooring. He has to protect flooring and wall form the damage of any fabricated work of partition table or any fixing work and for the any damage contractor is fully responsible for the same and for the above protection of PVC sheet on flooring no any extra charge/payment provided to contractor.
- Before finishing any material i.e. electrical fixtures, LED light, Fan, wire quality, contractor has to approve all material from consultant/EIC and only after approval contractor has to do further work.
- Contractor has to do external – internal paint, color scheme up to satisfactory level of architect / EIC.s
- After completion of the work contractor has to submit all as built drawing as suggested by architect /Authority.
- Contractor's rate includes all removing, reinstallation and transfer of suggested furniture, items/Electrical items from site to suggested area. No any extra cost provide by client for suggested work.

- **FORM OF GUARANTEE BOND FOR BRICKBAT & CHAINA MOSAIC WATERPROOFING**

Contractor I/ We _____ here by guarantee that work will remain unaffected and will not be in anyway damaged by water, rain and will not leak from surface for a period of for 3 years after completion of work as per terms and conditions of the contract and damaged that might be caused on account of water, rain and or similar of dampness of leakage from walls or above floor. The guarantee shall remain in force for the period of 05 years from the completion of the work under the contract and it shall remain binding to the contract for period of 05 years.

- Contractor has to do flooring pattern in different color shade, necessary cut work, necessary epoxy groove, necessary adhesive chemical required for jointing etc. as per suggested and directed by consultant and detail drawings and no extra payment should be done for the same.
- Contractor has to do proper dismantling of any work like furniture/brick work /electrification/HVAC work/plumbing work etc & no more any damages for other building structure.
- Core cutting is not allowed in existing RCC members.

PENALTY FOR DELAY:

If the Contractor fails to complete the whole project by the stipulated completion date, he shall pay liquidated damages.

SAFETY CODE

Scaffolds :-

1. Suitable scaffolds shall be provided for workmen for all works that cannot safely be done from the ground / floor , or from solid construction except in the case of short duration work which can be done safely from ladders. When a ladder is used, it shall be of rigid construction made either of good quality wood or steel. The steps shall have a minimum width of 450 mm. and maximum rise of 300 mm. Suitable hand and holds of good quality wood or steel shall be provided and ladder shall be given an inclination not steeper than $\frac{1}{4}$ to 1 ($\frac{1}{4}$ Horizontal and 1 Vertical).
2. Scaffolding or staging more than 4 m. above the ground floor swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly bolted, braced or otherwise secured atleast 1 m. above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only openings as may be necessary for the delivery of materials, such scaffoldings or staging shall be so fastened as to prevent it from swaying from the building or structure.
3. Working platforms, gangways and stairway shall be so constructed that they do not sag unduly or unequally and if the height of platform, gangway or stairway is more than 4 m.

above ground level or floor level, they shall be closely boarded and shall have adequate width and suitably fenced as described above.

4. Every opening in the floor of a building / premises or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 1 m. .
5. Safe means of access shall be provided to all working places. Every ladder shall be secured fixed. No portable single ladder shall be over 9 m. in length while the width than 290 mm. for ladder upto and including 3 m. in length. For longer ladder this width shall be increased at least 20 mm. for each additional meter of length.
6. A sketch of ladder and scaffolding proposed to be used shall be prepared and approval of Engineer-in-charge obtained prior to starting the work.

Other Safety Measures :-

1. All personnel of the Contractor working within the site shall be provided with safety helmets & personnel climbing on scaffolding must be provided with safety belts. All welders shall wear welding goggles while doing welding work and all metal workers shall be provided with safety gloves. Persons employed on metal cutting and grinding shall wear safety glasses.
2. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the site of the work shall be so stacked or placed to cause danger or inconvenience to any person or the public.

**LIST OF APPROVED AND NOMINATED MANUFACTURES /
SUPPLIERS OF MATERIALS**

NOTE :

1. No deviation permissible.
2. Wherever Contractor proposes to use 'equivalent' makes (i.e other than specified) the same shall be done only after prior approval from authority. Any additional expenditure, time due to this will be on Contractor's account and no claims will be entertained. **Owner's choice regarding the use of particular make will be final and binding on the contractor.**
3. All materials to be used shall be of first quality unless otherwise specified.

LIST OF MATERIALS OF APPROVED BRAND AND THEIR MANUFACTURERS

The brand /make mentioned in the following list should be used by the Contractor and rate quoted should be based on the same. In case of the brand / make is not available, materials of other makes should be used with prior approval of Architect and Bank. The rates will be revised, based on the difference in basic rates of the make brand / name mentioned below: -

LIST OF RECOMMENDED MATERIAL

	MATERIAL	APPROVED MAKE / MANUFACTURER
	Ordinary Portland Cement	Ultratech, Ambuja, Birla
	White Cement	Birla, J.K.
	Structural Rolled Steel sections- beams, Channels, tee, flats, angles, bars (Round, square, hexagonal, bright), etc	Tata, Jindal, JSW
	Steel FE 500D/550D	Tata, Jindal, JSW, POLAD, SAIL, ET, NATIONAL, GELENT
	Structural Rolled Steel sections	Tata, Jindal, JSW
	Structural Hollow Steel section	Tata, Jindal, JSW
	Structural tubular section	Tata, Jindal, JSW
	Stone rubbles and gravels	Sevalia, Vadagam, Ambakanta, Sayala
	Shuttering Plywood	Marino, Duro ,Green ,Century, Archidply, Monarch
	Mirror	Modiguard, IAG, Triveni, Saint Gobain
	M.S. rolling shutter	Sarvottam, Suryoday, Gandhi, Sagar
	Pre cast terrazzo tiles & skirting	Somani, Nitco, Hindustan,

	[mosaic]	
	Polished Kota stone slab	From approved quarry & As per tender specification & sample approved by Architect & Client
	Polished Granite stone	From approved quarry & As per tender specification & sample approved by Architect & Client
	GVT Glazed Vitrified tiles	SOMANY , KAJARIA , VARMORA
	Construction chemicals / concrete and mortar	Chembond, Fosroc, Pidlite
	Joint filler	GE silicon, Cibatul / Wecker, laticrete, Dr. Fixit, Nitco
	Pre coated Steel roofing / walling sheets	Tata blue scope Interarch, Nippon Dendro (poly steel) Meta color, JSW
	Paints	Asian, Nerolac, Burger
	Texture paint	Asian, Nerolac, Burger
	Polish	NEROLAC, ASIAN
	Hardware	EBCO, Hettich, Ozone,
	Adhesive	Fevicol, Araldite
	Floor spring [heavy duty]	EBCO, Hettich, Ozone,
	Floor spring	EBCO, Hettich, Ozone,
	Door closer	EBCO, Hettich, Ozone,
	Aluminum sections	Jindal, Hindalco, Banco
	UPVC window	Aluplast/Rehau/Wintech
	Bans park Stone	From approved quarry & As per tender specification & sample approved by Architect & Client
	Rust Remover	Roff Rust Clear (Pidilite Industries), Dr. Fixit product
	Polymer bonding agent	Perma, RoffBondRepair (Pidilite Industries), Dr. Fixit product
	Non-shrink grout	Perma, RoffGrout GP (Pidilite Industries), Dr. Fixit Product
	Super plasticizer for jacketing	Perma, RoffPlast330 / Concrete Master, Dr. Fixit Product
	Rebar and Anchor Fasteners	Hilti or Fischer OR FOSROC
	Acrylic SBR base bonding agent	Perma , CICO, Dr. Fixit Product BASF, Pidilite
	Epoxy Bonding	Perma, RoffConcrete Bond (Pidilite), Dr. Fixit Product

Anti-Termite Chemicals	Perma, Chloropyriphos/ Biflex TC / lindane/BayerCrop Science
PVC Sleeve	Supreme / Astral / Prince / Truflo
Expansion Board	Capcell HD Board
CP Fixture	Jaquar / Kohler / American standard
Sanitary wares	Jaquar / Kohler / American standard
Water Proofing	Perma / BASf/ Fosroc / Sika
Over deck Insulation	BASf/ Fosroc / Sika
Tile Chemical	Perma, Bal, Laticrite,Kerakoll
PVC spacer	BAL Endura / Kerakoll / BASF
Self Levelling Chemicals	Perma / Pidilite / Cico / Sika
Anti-bacterial Paint	Sikka / Liquid Plastic/SSK/Viessmann /artilin / BASF / Huntsman
Galvalume roofing sheet	Jindal, Tata, JSW
Pre coated Sheet	TATA, JSW, JinDAL
Hardeners	'Ironite' , 'Ferrok' , 'Hardonate.'
Wire Mesh	Sterling Enterprises, Trimuriti, Welded Mesh.
S S Railing	Kitch, gaze, Hafele, Ozone
Compector	Goderej, Kompress

LIST OF RECOMMENDED MATERIAL

01	COMMERCIAL PLY (MR-303)	:	Archid /Century/
01A.	FLEXI PLY (MR-303)	:	Archid /Century/
02.	LAMINATES (1.00mm thick)	:	Archid /Century/Aica
04.	VENEER	:	Green/Century/Euro/
05.	WOOD (Well-Seasoned)	:	C.P.T.W. / Malayasian /African
08.	DRAWER SLIDING FITTINGS	:	(EBCO) / Godrej / Ozone/
	(TELESCOPIC)		(EBCO) / Godrej / Ozone/ hettich
09.	HARD WARE	:	(EBCO) / Godrej / hettich/ Ozone /
10.	DRAWER SHUTTER / LOCK	:	(EBCO) / Godrej / hettich/ Ozone /

13.	DOOR CLOSER	:	(EBCO) / Godrej / hettich/ Ozone /
14.	FLOOR SPRING	:	(EBCO) / Godrej / hettich/ Ozone /
15.	ADHESIVE	:	Fevicol /Araldite/
17.	GLASS TINTED / MIRROR	:	Modi Guard/ Saint Gobian / Asahi India
18.	GLASS TINTED/		
	BACK PAINTED GLASS	:	Modi Guard / Saint Gobian / Asahi India
19.	MELAMINE ACRYLIC POLISH	:	Asian / nerolac
20.	ALUMINUM GRILL	:	Alumgrill
21.	P.V.C. Flooring	:	Armstrong / L.G.
21b	FALSE FLOORING	:	Unitile/Armstrong
22b.	Plastic Emulsion /Synthetic Enamel Paint	:	Asian / Nerolac /
	Texture Paint	:	Asian / Nerolac /
	CEMENT PAINT	:	Asian / Nerolac /,
23.	FIBRE MINERAL FALSE		
	CEILING	:	Hunter Douglas / Aerolight /
	Armstrong		
24.	ALUMINUM DOOR & WINDOW		
	SECTION	:	Jindal / Indal / Geeta
25.	VERTICAL/ZEBRA BLINDS	:	Vista,.
26.	VENETIAN BLINDS	:	Vista, Mac,
27.	CEMENT	:	Ultratech/ACC/JK Cement/Ambuja
28.	STAINLESS STEEL SINK	:	Nirali /
29.	PLANTS (Artificial)	:	As selected by architect.
30.	PICTURES	:	As selected by architect..
31.	CARPET	:	
	Unitex/Armstrong/		
32.	CERAMIC TILES/ (Flooring)	:	Somani/Kajaria/
33.	CERAMIC TILES (Dado)	:	Somani/Kajaria/
34.	VITRIFIED FLOORING	:	Somani/Kajaria/

35.	"U" FOAM	:	Prince / Supreme /
36.	POLYURETHANE FOAM	:	Sleepwel
37.	SOFT BOARD	:	Jolly Board
38.	GLASS WOOL	:	Fibre Glass / Absorb wool
39.	TOUGHENED GLASS	:	Saint- Gobain/In do Asahi/Mod i or equivalent

We hereby declare that I/We have read and understood the above instructions which have been issued as conditions of the contract.

In case any of the makes for any of the materials is missed out in the above list, then the contractor shall inform the Consultants about the same and obtain the approval. Thereafter, he can proceed with the supply of the equipments.

LIST OF APPROVED MANUFACTURES / SUPPLIERS OF MATERIALS

1. SFU/ Isolator switch : L&T/Siemens/ MDS Legrand
2. L.T. Panels : L&T/ Siemens / MDS Legrand
3. Meters : AEI/MECO/ Rishab/ Silkon/ UE
4. Voltmeter / Ammeter/ Indicating Lamps : L & T / MDS Legrand / Siemens/ AEI
5. Wires : Finolex / Polycab / RR Kable
6. (MS/ PVC) Conduits (ISI Embossed) : Precision /
7. Switches / Switch Box/ Sockets/ Plug
Scket/ Modular switches & Sockets: Anchor/crompton/ L&T /
Phillips.
8. Telephone and music system wires/ cables : Finloex/ RR Kabel/ Polycab
9. Decorative lights (spot lights/ picture lights) : Phillips / Wipro / Bajaj
10. Telephone Tag-block : Deltron / ITL/ Krone
11. NCCBS : L&T/EE/Crompton
12. Air Circuit Breaker : L&T / Siemens/ MDS Legrand
13. Changeover Switches : Siemens / Blcon/ Kayee
14. Contactors : Siemens /L&T/ MDS Legrand / Schneider
15. Music speakers : Phillips/ Sony / Bosch/ Ahuja
16. Amplifiers : Phillips /Sony / Ahuja
17. Elec. Fittings & fixtures : Phillips /Crompton/ Wipro
18. PL/ Spot Lights fittings : Phillips /K-lite/ Wipro
19. Cables : Polycab / RR Kable/ Finolex
20. Light Fixtures : Phillips/Wipro / Bajaj
21. MCCB/ MCB/ ELCB/ RCCB/ DB/ HRC Fuse: L & T/ MDS Legrand/ Siemens / EE

22. Main switch (sheet metal boxing) : L&T/ MDS Legrand/ Siemens / EE
 23. Ceiling Fan : Crompton/ Usha / Bajaj/
 24. Wall fan : Crompton / Usha / Orient / Bajaj
 25. Exhaust fan : Crompton / Usha / Orient / Bajaj
 26. Data Cable (CAT 6) : D-Link / Delton /
 27. Data (RJ – 45 I/O) : D-Link / Delton /

1. All materials to be delivered at site. If the material used for the work is not in conformity with the specifications, the same shall be replaced by contractor. All the material required for the above work shall be arranged by the contractor at his own cost.
2. Selection of material to be done in consultation with the authority representative / Engineer.
3. All materials shall be of the first quality.
4. Wherever Contractor proposes to use 'equivalent' makes (i.e. other than specified) the same shall be done only after prior approval from Authority/Architect .
5. Read "or equivalent approved" at the end of the list of approved manufacture / sub-contractor / brand for every materials.

List of Approved Makes	
Equipment / Material	Makes
Make for HVAC	Mitsubishi, Hitachi, Carrier, Daikin
Copper Pipe	Mandev / Maxflow/ Totaline/Indigo
Hard PVC Pipes	Supreme / Prince/ Diamond
G.I Sheet	Tata / Jindal / Essar / Nippon
Acoustic Insulation	Arma sound (Arma cell)
Thermal Insulation Material	
a) NITRILE RUBBER	Armaflex / K Flex /
b) Thermocole	Breadshell / Equivalent
Cable	
a) Armored Cable	Finolex / Polycab / RR Kabel
b) Flexible Cable	Finolex / Polycab / RR Kabel
PVC rigid Ac	2.0 mm thick Precision Plastic Co. ISI and FIA approved

Note: - It will be contractor's responsibility to provide test certificate & Guarantee warranty certificates from each manufacturer specifying clearly batches no. Date of manufacturing, etc. However, if any doubt arises about the quality of particular material brought to site, owner may directly take the sample and get tested in any Government Laboratory at the cost of Contractor and if they found to be defective or not to the acceptable standards, contractor will be penalized & contractor at his own cost removes such materials from the site and procure fresh materials.

IS CODE AND APPROVED MAKE LIST FOR FIRE FIGHTING SYSTEM

Sr. No.	Item	Specifications	MAKE
1	Pipe	Galvanised Iron, heavy, Class 'C'. Upto 150 NB as per IS 1239 Part I & 200 NB and above to IS 3589 6.35 mm thick.	Jindal / Tata
2	Fittings	Buttweld type to IS 1239 Part II	
3	Motors	Horizontal centrifugal type, electric operated	Kirloskar / Crompton Eqv.
4	Pumps	Cast Iron	Kirloskar
5	Sluice Valve	Rising spindle type. Cast Iron to PN 16	Sant / Kartar/ Eqv.
6	Strainer / Footvalve	Heavy duty	Sant / Eqv.
7	Butterfly Valve	Cast Iron to PN 16	Audco / Maxflow / Etc.
8	Hydrant Valve	Single headed, Oblique type, Stainless Steel to IS 5290 mark	Newage / SBJ / Winco
9	Fire Hose	To IS 636 type A externally coated with internal EPDM layered with SS Coupling, heavy duty to IS 903	Newage / CRC
10	Branchpipe	St..Steel to IS 903	Newage / SBJ / Winco
11	Hose Reel	To IS 884, 30 mtr. length 19mm dia. Rubber hose complete with isolation valve.	Newage / SBJ / Winco
12	M S Box	Made from 16 swg. M S powder coated.	
13	Sprinkler	Pendent type	HD / Tyco / Reliable
14	Non Return valve	Dual Plate type to PN 16	Advance / Sant
15	Fire Extinguisher's	To IS 15683 with squeeze grip nozzles	Safex / Kanex / Eversafe
16	Painting	Two coats of Zinc Primer and 2 coats of enamel paint each 75 microns thick. Shade shall be of PO red.	Asian Paints / ICI / Berger
17	Coating & Wrapping	Wrapping & Coating as per IS 10221. Single coat of 4mm thick.	IWL
18	Control Panel	Standard as per requirement	
19	Fire Alarm	Conventional type	Honeywell /

Makes For AV System

Approved Make List		
Sr.No.	Product	Approved Make List
1	Interactive Display	Panasonic / CKS Acoustics / Christie
2	Video Conference Camera	Yealink / Birddog / CKS Acoustics
3	POP UP Box	Wyrestorm / Rampo / Extron
4	HDMI Switcher	Wyrestorm / Rampo / Extron
5	HDMI Extender Set	Wyrestorm / Rampo / Extron
6	HDMI Cables	Wyrestorm / Rampo / Extron
7	Conference Chairman Unit	Televic / TOA / CKS Acoustics
8	Conference Delegate Unit	Televic / TOA / CKS Acoustics
9	Conference Control Unit	Televic / TOA / CKS Acoustics
10	Wall / Ceiling Speaker	Quest Audio / CKS Acoustics / LD System
11	Power Amplifier	Quest Audio / CKS Acoustics / LD System
12	Wireless Microphone	Shure / CKS Acoustics / CAD Audio
13	Speaker Cable	Belden / CKS Acoustics / Draka
14	Microphone Cable	Belden / CKS Acoustics / Draka
15	CAT-6 Cable	D-Link / 3C3 / Digilink
16	System Rack	Elixir / APW President / Valrack
17	Microphone cum Speaker Unit	Shure / Clearone / Wyrestorm
18	Web Camera	Wyrestorm / Clearone / CKS Acoustics
19	P.A. System	CKS Acoustics / LD System / Quest Audio
20	Bio-metric System	Real Time / HID / Timewatch

**DETAIL TECHNICAL SPECIFICATIONS FOR FURNITURE WORK For GIDB 8th & 9th Floor Office
Renovation Work.**

This specification are for the work to be executed items to be supplied and materials to be used in the works as shown and deafened on the drawings and described here in all under the supervision and to the satisfaction of the Architect / AUTHORITY

The workmanship is to be the best available and of a high standard. Use must be made of specialist tradesmen in all aspects of the works, and allowance must be made in the rates for doing so.

The materials and items to be provided by the contractor shall be the best of their respective kinds, approved by the architect in accordance with any samples which may be submitted for approval and generally in accordance with the specifications. Where materials or products are specified in this specification and or / bill of quantities by the name of the manufacture or the brand trade name or catalogue reference the contractor will be required to obtained the approval of the architect / AUTHORITY before using a material or product other than the specified. The contractor shall produce all invoices, vouchers or receipted accounts for any materials if called upon to do so by the Architect.

Sample of all material are to be submitted to the architect for his approval before the contractor orders or delivers in bulk to the site. Also, the contractor will be required to submit specimen finishers of colors, fabrics etc, for the approval of the architect before proceeding with the works. Should it be necessary to prepare shop drawings, then four copies of such drawings shall be submitted for the approval of the architect who will retain two copes all at the contractor's expenses.

1. Specifications

1.1 Except for the items, for which Particular Specifications are given or where it is specifically mentioned otherwise in the description of the items in the schedule of quantities, the work shall generally be carried out in accordance with the "CPWD Specifications" additional / Particular Specifications, Architectural / structural drawings and as per instructions of Engineer-in-Charge.

1.2 All Technical Specifications in respect of all material to be used, method of execution, workmanship and quality for each item of the work shall be as per CPWD specifications and latest Indian Standard unless otherwise specified.

1.3 Any reference made to any Indian Standard Specifications, shall imply to the latest version of that standard, including such revisions / amendments as issued by the Bureau of Indian Standards up to last date of receipt of tenders.

1.4 The Contractor shall keep at his own cost all such publications including relevant Indian Standard Codes applicable to the work at site.

2. Materials :

Aluminum – the material shall conform to IS 1285.

Anti-termite treatment - the materials shall conform to IS 6313 part II

Makes of Materials: The makes of materials shall be as per the details furnished in the list of preferred makes.

TIMBER :

Timber generally is to be best of its kind, well and properly seasoned, of mature growth, free from worm holes large loose or dead notes or other defects and sawn die square and will not suffer warping, splitting or other defects through improper handling. The Species of timbers to be used for the manufacture of face veneers, cores and cross brands of marine plywood. No alternative species of timber shall be used without the prior approval of purchaser. In selecting the species for the manufacture of plywood, it is recommended that as far as possible a single species of timber shall be used and where combinations of different species are used, care shall be taken to prevent incompatibility of the two species. For ECO-Mark, only wood from sources other than natural forests such as wood from industrial and social forestry plantations and shade trees from tea and coffee estates shall be used for the manufacture of veneers.

The hardwood is to be C.P. teak weighing not less than 45 lbs cubic foot with a moisture content tax.

Timber is to be cut to the required sizes and length as soon as practicable after the works are begun and stored under cover so that the air will circulate freely around it. Journey is to be prepared, immediately after the placing of contract, framed up (but not bonded) and stored until required for fixing in position, when it is to be bonded and waged up. Any portions that warp or develop shakes or other defects are to be replaced before wedging up, the whole of the work is to be framed and finished in a proper and workman like manner in accordance with the detailed drawings and fitted with all necessary motaties straps, belts screws etc. running bonded joints are to be cross tongued with teak on guess and where over 1 – 1/28 thick double tongued. Joiner's work generally unless otherwise specified.

Templates boxes and molds shall be accurately set out and rigidly constructed so as to remain accurate during the time they are in use.

Grounds are to be clean shown, free large knots, splayed as required, plugged and fixed to walls etc. at 1'6" centers.

Wood plugs are to be cut on the twist, patent wall plugs or plastic filling may be used in lieu of wood plugs with the approval of the Architect.

All unexposed surfaces of timber e.g. false ceilings, backings fillets backs of doors frames, cupboard framing, grounds etc. are to be treated with two coats of approved timber preservative like solignum, kirticite, term seal or cast oral or vacuum pressure impregnated with and approved water soluble timber preservative before fixing or bedding.

Adhesive

The adhesives used for bonding the veneers shall be based on any suitable synthetic resin conforming to BWP Type of IS 848. Extender shall not be added to the adhesive by the plywood manufacturer. Fillers, if used ,shall not exceed 10 percent by mass of solid content of the glue.

JOINTS

All joints will be standard, mortised and tenon, dovetail, dowe, cross halved, metered tongued and grooved and rebated, nailed or glued but joints, will not be permitted except in exceptional cases, ailed but joints will not be accepted. All joins shall be smeared with white lead.

Whenever solid wood is specified it shall be as per I.S.I. and of good quality. The type of wood shall be got approved before collecting the same on site. Fabrication of wooden members shall be started only after approval. It shall be free from large, loose, dead or cluster knots, flows, shakes, warps, bends or any other defect. It shall be uniform in substance and of straight fibers as far as possible. It shall free from rats, decay, harmful fungi and other dejects of it usefulness for the purpose for which it is required. The colour of wood shall be uniform as far as possible. The scantlings planks etc. shall be seen in straight lines and planes in the direction of grain and of uniform thickness.

FIRST CLASS TEAK WOOD :

First class teak wood shall have no individual hard and sound knots, more than 6 sq.cm. in size and the aggregate area of such knots shall not more than 1% area of piece. The timber shall be closed grained.

SECOND CLASS TEAK WOOD :

No individual hard and knot's shall be more than 15 sq.cm. in size and aggregate area of such knot's shall not exceed 2% of the area of piece.

GLASS :

All glass shall be of the best quality, free from specks, bubbles, smokes, veins, air holes, blisters and other defects. The kind of glass to be used shall be as mentioned in the item or specification or in the special provisions or as shown in detailed drawings. Thickness of glass panel shall be uniform. All glass to be approved manufacture complying with IS:3548-196 or as per approved quality and sample.

The compound for glazing to metal is to be special non hardening compound manufacture for the purpose and of 9 brand and quality approved the interior Designer.

In cutting glass, proper allowance shall be made for expansion. Each square of glazing to be in one whole sheet and after cutting the edges to be properly filled.

On completion, clean all glass inside and out, replace all cracked scratched or broken panes and leace in good condition to the satisfaction of the Architect.

3.0 POLISH :

The wooden article to be polished shall be first prepared to smooth surface with 400 fit black water proof sand paper. All dents shall be filled with epoxy putty and to be finally finished spray with DUCO, N.C. clear lacquer to a silk smooth finish.

PLYWOOD :

Plywood for general purpose shall confirm I.S : 303 MR GRADE with characteristics of moisture resistant makes Prior to finalization make and procurement of the material required warranty, guaranty certification also company's green certifications.

FASTENINGS AND HARDWARE:

THE fixtures and fastenings, that is, but hinges, teemed strap hinges, sliding door stoppers, casement window fasteners, casement stays and ventilators catch shall be made of the metal as specified in the item or its specifications.

They shall be of iron, brass, aluminum, chromium plated iron, chromium plated brass copper oxidized iron copper oxidized brass or anodized aluminum as specified.

The fixtures shall be heavy type. The fixtures and fastenings shall be smooth finished and shall be such as will ensure ease of operation.

The samples of fixtures and fastenings shall be got approved as regards quality and shape before providing them in position.

Brass and anodized aluminum fixtures and fastenings shall be bright finished.

Screws, nails, bolts, will be of brass or other non corrosive metal. In hardware, they will match the finish of the hardware item.

Nails, in a finished surface shall be neatly punched and the hole filled with wood filler matching the finish. Screws, in a finished surface will be round head, raised head or sunk beneath the surfaces and the hole plugged with a wood plug with matching color and grain of the wood surface, unless especially detailed.

HARDWARE:

Hinges, locks, latches, door tracks etc. shall be as specified by the manufacture specified. In a variation of this quality of the substitute shall be equal to or better than the original specified, and samples should be submitted to the Architect for prior approval.

HARDWARE AND METALS:

The hardware throughout shall be of approved manufacture and supply well made and equal in every respect to the samples to be deposited with the Architect. The contractor may be required to produce and provide samples from many different sources before the Architect is able to make a decision and he should allow in his rates for so doing.

Fittings generally shall have a satin chrome or anodized finish unless otherwise specified, and shall be suitable for their intended purposes.

Screws are to match the finish of the article to be fixed and to be rounded or flat headed or counter sunk as required.

Cover up and protect the brass and bronze surfaces with a thick grease or other suitable protective material, renew as necessary and subsequently clean off and clear away on completion.

Aluminum and stainless steel shall be of approved manufacture and suitable for its particular application. Generally the surfaces of aluminum shall have an anodized finish and both shall comply with the samples approved by the Architect.

All steel, brass, bronze, aluminum and stainless steel articles shall be submitted to a reasonable test for strength; if so required by the Architect at the Contractor's expenses.

All brazing and welds are to be executed in a clean and smooth manner rubbed down and left in the flat test and tidiest way, particularly where exposed.

Chromium plated shall be in accordance with B.S. 1224 or as per approved specification and shall be on a base material of copper or brass or as specified by Architect.

ENAMEL PAINTS :

Oil paints shall be of 1st quality and the specified colour and shade, and as approved. The ready mixed paints shall only be used. However, if ready mixed paint of specified shade or tint is not available while ready mixed paint with approved stainer will be allowed. In such a case, the contractor shall ensure that the shade of the paint so allowed shall be uniform.

All the paints shall meet with the following general requirements:

Paint shall not show excessive setting in a freshly opened full can and shall easily be redispersed with a paddle to a smooth homogeneous stage. The paint shall show no curdling, leavering, caking or color separation and shall be free from lumps and skins

Paint as received shall brush easily, possess good leveling properties and show no running or slugging tendencies.

The paint shall not skin within 49 hours in a three quarters filled closed container.

The paint shall dry to a smooth uniform finish from the manufactures and generally according to their instructions and without any admixtures what so ever.

Ready mixed paint shall be used exactly as received from the manufactures and generally according to their instructions and without any admixtures what so ever.

PLASTIC EMULSION PAINT:

Pigmented priming coat (emulsion thinned with water) followed by three or more finishing coats of plastic emulsion paint. Pasted filler to be applied every coat exempting the final finishing coat and sanded.

8.0 LAMINATES: (Acrylic laminated, Fluted Laminate,Core laminate)

All the laminate to be used shall be of 1.0 mm. thickness in approved the color and shade as proved and specified by the Architect. It shall be matt finish specified in approved make Or its equivalent as per the sample shown by the Consulting unless otherwise specified. It shall satisfy all the I.S.I. standards for melamine coated laminated fiber boards contractor shall have to take approval of the Department for each sheet of the laminates Basic rate of sheet is 1500 rs/sheet.

VENEERS :

The best quality natural wood veneers of the specified wood and of the specified thickness shall be used. It shall be in matching group and of uniform shade and as per the selection and approval. The contractor shall have to obtained the approval of the prior to pressing of veneers. The contractor shall have to use the brand of veneers as approved by the Architect. The veneers shall be either rotary cut or sliced. The veneers shall be reasonably smooth to permit an even spread of glue. The veneers shall be conditioned to a moisture content not exceeding 10 percent before bonding. Basic rate of vineer is 100/per SQ FT

Defects In Veneers:

The veneers to be used for the faces shall be free from sapwood. Core veneers may contain sound knots, whose maximum dimension in any one direction do not exceed 50 mm, and open defects (split and check) provided such defects do not impair the smooth finish of the surface required for painting or staining. Dead knots shall not be permissible. Overlaps or pleats shall not be allowed.

Acrylic Sheets

Acrylic sheets shall be of thickness as specified in the item and of an specified shape and size as the case may be panels may be flat or curved It should be light in weight it shall be colourless or coloured or opaque as specified in the item. Colourless sheet shall be as transparent as the finest optical glass. Its light transmission rate shall be about 95% Transparency shall not be affected for the sheets of larger thickens, it shall be extremely resistant to sunlight weather and low temperatures. It shall not sow any significant yellowing or change in physical properties or loss of light transmission over a longer period of use. The sheet shall be impact resistant also Sheets should be of such quality that they can be cut, bent jointed as desired Solution for the joints shall be used as per the requirement of manufacturer.

1. I. S. No. 7630 – 1975. Methods of sampling of plywood.
2. I. S. No. 303 – 1975. Specification for plywood for general purposes.
3. I. S. No. 3129 – 1965. Specification for article board for insulation purposes.
4. I. S. No. 3513 – 1966. (part III & part IV). High and medium density wood based laminates part III general purposes. Part IV sampling test.
5. I. S. No. 1659 – 1979 block boards.
20. I. S. No. 7316 – 1974. Decorative plywood using plurality of veneers for decorative faces.
21. I. S. No. 3478 – 1966. High density wood particle boards.
22. I. S. No. 1734 (part I to XX). Plywood method of test for
Part I : General
Part II : Plywood
Part III : Battens
23. I. S. No. 1328 – 1970. Veneer decorative plywood.
24. I. S. No. 710 – Marine ply.
25. I. S. No. 3087 – 1965. Wood particle boards (Medium density)
26. I. S. No. 848 – 1974. Specification for synthetic resin adhesives for plywood. (Phenolic & Aminoplastic)
27. I. S. No. 2046 – 1969. Specification for decorative laminate.
28. I. S. No. 8273 – 1976. Fibrous gypsum plaster boards.
29. I. S. No. 2095 – 1964. Gypsum plaster boards.
30. I. S. No. 2542 (part I) – 1978. Gypsum plaster concrete and products, methods of test for part I – plaster and concrete.
31. I. S. No. 8272 – 1976. Gypsum plaster for use in the manufacture of fibors plaster boards.
32. I. S. No. 2441 – 1963. Fixing coiling coverings code of practise for.

33. I. S. No. 2835 – 1977. Specification for flat transparent sheet glass.
34. I. S. No. 2395 (part I) – 1966 & 2395 (part II) – 1967
Painting to concrete, masonry, plaster surfaces code of practice for part – I operation and workmanship part II – schedule.
35. I. S. No. 3548 – 1966. Glazing in building code of practice for.
36. I. S. No. 6278 – 1971. White washing and colour washing code of practice for.
37. I. S. No. 137 – 1965. Specification for ready mixed paint brushing, matt or egg – shall flat finishing, interior to Indian standards colours as required.
38. I. S. No. 133 – 1975. Specification for ready mixed paint brushing. Wooden coating, interior to Indian standard colours.
39. I. S. No. 5391 – 1969. Adjustable metal chairs for use of typist and operators in telephone exchanges.
40. I. S. No. 8756 – 1978. Ball catches for use in wooden almirahs.
41. I. S. No. 3499 – 1976 (part II) chairs for office purposes metal revolving and tiltin.
42. I. S. No. 5416 – 1969. General purpose wooden chairs methods of test for.
43. I. S. No. 6185 – 1971. High chairs specification and safety requirements for.
44. I. S. No. 4116 – 1976. Joints used in wooden furniture code of practice for.
45. I. S. No. 3845 – 1966. Joints used in wooden furniture code of practice for.
46. I. S. No. 7070 – 1973. Shelving racks wooden (adjustable and non – adjustable type).
47. I. S. No. 4414 – 1977. Table tops (wooden)
48. I. S. No. 5967 – 1969., Tables, wooden, methods of test for.
49. I. S. No. 3564 – 1975. Door closers (hydraulically regulated).
50. I. S. No. 799 – 1979. Drawer locks, cupboards and box locks.

TECHNICAL SPECIFICATIONS

Preamble :

1. The detailed specifications given hereafter are for items of works described in the Schedule of quantities attached herein and shall be guidance for proper execution of work to the required standards.
2. It may also be noted that the specifications are of generalized nature and these shall be read in conjunction with the description of item in schedule of quantities and Drawings.
3. The work also includes all minor details of construction which are obviously and fairly intended and which may not have been referred to in these documents but are essential for the entire completion in accordance with standard engineering practice.
4. The architects and the Employer shall be the sole deciding authority as to the meaning, interpretation and implication for various provisions of the specifications and his decision in writing shall be final and binding on all concerned.
5. In case any difference or discrepancy between the tender specifications and the description in the bill of quantities, the bill of quantities shall take precedence.
6. In case any difference or discrepancy between the tender specifications and the tender drawing, the tender specification shall take precedence.
7. Unless specifically otherwise mentioned, all the applicable latest codes and standards published by the Bureau of Indian Standards and all other standards shall govern in all respects of design, workmanship, quality, properties of materials, method of testing and method of measurements.
8. MATERIALS TO BE APPROVED /BEST QUALITY: The whole of the materials deployed in connection with the permanent work, shall be new and the best of its kind. All materials shall be in accordance with these specifications and shall be approved by the architect /PMC.
9. STANDARDS: Except where otherwise specified and permitted by the architect, all materials shall conform to the latest edition of Indian standard specification.
10. The payment shall be made as per actual execution of works.
11. All or any extra work involved shall be got approved in writing from Authority / architect -consultant before executing the same.
12. The rate for individual item shall include the cost of materials, labour, finishing etc. to complete the whole work satisfactorily as per instructions of AUTHORITY/ SAPC.
13. For any of the BOQ individual items, no extra payment will be given for any of the reasons.
14. Item rate to be inclusive of all material, wastage, groove, adhesives, hardware, necessary tools, tacks, erection, execution, polishing, painting, finishing, cleaning, etc with contractor profit and taxes all. And Works at all heights and for all floors.
15. Contractor shall arrange for all type of sample mockup and shop drawings as per BOQ item without any extra cost, for approvals.
16. The measurement shall be as per mode of measurements are given in tender specifications.

1

Supplying, Providing & fixing NUVOCOTTO TERRACOTTA BLOCKS partition at back side of reception table having thickness of 75 mm size 200x200x60 MM fixed with NSA OF (ULTRATECH TILEFIXO VT)or equivalent its required MS FABRICATION WITH

RECTANGULAR PIPE 60MM TO 75MM AND WIDTH 40MM TO 50 MM (DEPENDING UPON STRUCTURE)(M.S pipe asian make),for fixing of block using WEBER OR EQUIVALENT TWO COMPONENT JOINT ADHESIVE,spacer 8 to 10 MM between the blocks &use Grouting material LIKE PERMA OR EQUIVALENT ISO CERTIFIED etc complete as directed by EIC.partition finish with all finish suggested paint or policeand decorative with suggested artificial green plants.all selection as per architect/EIC

NUVOCOTTO TERRACOTTA BLOCKS FIXING DETAILS

NUVOCOTTO TERRACOTTA BLOCKS	
MATERIAL	TERRACOTTA EXTRUDED
SIZE (IN MM)	200 X 200 X 60 MM
USEAGE	EXTERIOR AND INTERIOR
JOINT COMPOUND MATERIALS	NSA OF (ULTRATECH TILEFIXO VT)
SPACER SIZE	8 TO 10 MM DEPENDING UPON SITE
JOINT COMPOUND MATERIALS WITH MS FABRICATED STRUCTURE	WEBER OR EQUIVALENT TWO COMPONENT JOINT ADHESIVE
MS FABRICATION WITH RECTANGULAR PIPE 60MM TO 75MM AND WIDTH 40MM TO 50 MM (DEPENDING UPON RCC STRUCTURE)	ASIAN OR EQUIVALENT
GROUTING MATEIRAL	ISO CERTIFIED MATERIAL LIKE PERMA OR EQUIVALENT

Workmanship:

- Work complete as per above specification.
- All the partition should be fitted to ensure accurate positioning & line level of ceiling, flooring, and wall system as per the site / EIC requirements.
- Work including wherever necessary core cutting ,drilling ,anchoring etc complete.
- The junction of the partition with masonry & all penetration through the partition has to be treated with acoustic sealant.

Mode Of Measurements:

- The size of the partition will be measured from flooring to false ceiling. There will be not extra payment for inside supports of partition. Contractor have to submit necessary test reports & certificates of product etc. Measurement consider length x height for billing.
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.
- All joints,Design of each blocks are as per suggested by Architect/EOI.

2

3" HIGH WOODEN DECK (falce flooring)IN RECEPTION WITH WOODEN PLANK FLOORING:- Providing and fixing 3" high from finish floor lvl wooden plank flooring based on aluminium framing sizes of 100 mmx75 mm as maximum distance 600 mm c/c for aluminium seccion grid This specification covers supply, installation, leveling, finishing, protecting till 'handing over' of deck flooring system . The system should be of nominal 600mm x 600mm (35mm thick) modular panels with heavy-duty pedestals. The total system weight shall not exceed 40 kg/sq.m. The system shall be able to withstand a UDL of 2000 kg/m2 (1117Kg/Sq.mt) and a point load of 450 kg/in2.

PANEL: Panels shall be made of steel with an infill of lightweight, non-combustible having fire resistance, thermal insulation, and flame resistance properties at 60 min cementitious material.

The bottom of the panel shall be embossed in hemispherical shape to give strength and flexural rigidity.

The infill material shall not become loose when the panels are cut. Panel should be able to withstand an ultimate load of at least 2.5 (3.00) times the designed point load.

The entire panel shall be coated with epoxy powder coating of 75-100 microns on the exposed surface. The panel top & bottom sheet shall be 0.9/0.7mm (0.7/0.6mm) resp. Flatness should be 0.2mm.

The panels shall have a top covering of anti-static high pressure laminate with resistance of $2 \times 10^5 - 5 \times 10^8$ ohms. The HPL thickness shall not be less than 1.5mm.(1.6mm).

PEDESTAL: Pedestal base shall be square of 100mm x 100mm x 2mm bearing area and assemble to a tube of 22mm dia with 2mm wall thickness. The pedestal head should not be less than 3mm thick. The pedestals should be able to accept an axial load of 22,500N and an ultimate load not less than 45,000N. Pedestal head shall be galvanized die-cut steel welded to a counter locking leveling nut. The pedestal head shall be provided with PVC cap for acoustic dampening. Height of pedestal shall be approximate 300 mm for floor /150mm for steps.

(STRINGER: Stringer shall be 20mm x 30mm x 1.5mm thick (25mm x 25mm x 1mm) galvanized steel hollow pipe capable of supporting a 205kg point load at the center of the stringer.

Stringers shall be individual and rigidly fastened to the pedestals with 6.35mm (1/4") fasteners.)

Note: The False Floor System shall be tested as per CISCA standards for Point Load, Uniform Load, Ultimate Load and Pedestal Axial Load. MAKE:_ UNITILE

Mode Of Measurements:

- The size of the flooring will be measured from length x width for billing. There will be not extra payment for inside supports or any wastage material charge Contractor have to submit necessary test reports & certificates of product etc..
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.
- All joints,Design of each blocks are as per suggested by Architect/EOI.

3

LOW HT WOODEN BOXES OUT OF PARTITION FOR GREEN PLANTATION "Providing & Fixing low ht wooden boxes finished with 12 mm mdf finish with PU paint as suggested shape and height for artificial plantation ht (thickness of box is 79 mm) having 12 mm thick MDF on aluminum framing . Aluminum framing size for vertical & horizontal support is 50 mm x 25 mm having guage of 16.. Grid of aluminum framing is 600 mm x 600 mm. All exposed surfaces of finished with 1 mm thick laminate/PU polish of approved shade. Make necessary grooves as per shown in drawing. Necessary framing to be erected for box strengthing .Maximum height is0.60 mt. box fill with white pables and suggested green artificial plants as suggested by architect, Contractor has to provide all necessary cut outs (race ways.) for Electrical works & no extra payment shall be made for it.

Workmanship:

- Work complete as per above specification.
- All the mdf wood boxes should be fitted to ensure accurate positioning & line level as suggested pattern .Exposed and interior of box finish with 12 mm MDF & PU polish. Cost includes white pables which are filling in wooden boxes.
- Work including wherever necessary core cutting, drilling, anchoring etc complete.

Mode Of Measurements:

- The size of the boxes will be measured length x height. There will be not extra payment for inside supports or pebbles. Measurement consider length x height for billing.
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.
- All joints, Design of each blocks are as per suggested by Architect/EOI.

4

CORIAN TOP VINEER FINISH RECEPTION TABLE: Providing Labour & Material for making (2.43x0.60) reception table having 12mm Thk. Corian Top based on 18 mm thk MR grade plywood with all necessary proper solution , finished by rubbing and buffing (Corian top covers 100 mm bottom of ply at front of table & 50 mm bottom of ply of inner side including edges of reception table, having three nos of base boxes of size 450x525x500 mm with providing drawers with telescopic channels & shutters made up of 18mm thk MR grade Ply, Having 3" high Footrest between each box support & bottom of the table covered by 25 mm x 25 mm thk bidding patti, All exposed surfaces covered by 4 mm thk vineer finished with suggested PU polish. internal area of table is covered with 1 mm thk laminate of suggested shed .use of PVD patties & MDF fluted panels in elevation as suggested pattern , all complete with two nos of key board tray, drawers on telescopic channels, locks, stoppers, SS Screws,MS nails, Auto hinges as per shown in detail drawings & as per instructions of architect / incharge engineer. Contractor has to provided all necessary cut outs for Electrical works & no extra payment shall be made for it. Please see the Attached Make List for Apporoved Makes. Basic rate of laminatte is 1800 rsper sheet. Basic rate of vineer is 150 rs per sq ft.

Materials:

- 6 mm corian with fabrication and buffing
- 18 mm MR grade ply of IS 303.
- Bidding Patti:- Burma border.
- 1 mm laminates for all internal surfaces as finished material.
- 4 mm vineer for all exposed surfaces as finished material.
- 450 mm SS 304 struds.
- 12 mm glass as suggested for hand rest at reception
- Hardware: 5m, ozone, inox , ketch etc.
- Adhesive – fevicol ,Bluecoat

Workmanship:-

- Unit top & some part of elevation shall be made from 6 mm thk corian based on sandwich 18 mm MR grade ply covered with 1 mm thick laminate at internal surfaces.
- Provision of suggested numbers of pedestal
- Between two shelves having support of 450 mm SS -304 studs.
- All edges (other two sides) are covered by Burma border finished with veneer/polish.
- The rate shall be consolidated for all above items. The rate shall include cost

of all Materials, fixtures, joineries etc & labor to complete the work satisfactorily as per instructions Of engineer in charge. Suggested indirect lights and use of PVD patties as suggested in design.

Mode of measurement:-

No extra payment will be given for any of the reasons. The rate shall be for a unit of per sq mt which is including length x width of top shelf. (for Width Table Top area at 2'6" ht lvl.)

5

FULL HT GLASS PARTITION WITH DOOR:-FULL HEIGHT SINGLE GLAZED PARTITION- (45x25mm SYSTEM) SUPPLY AND INSTALLATION OF MODULAR ALUMINIUM SINGLE GLAZED PARTITION FRAME OF MAKE 45 SERIES USING CA 45.1 (45 X 25MM) WALL STARTER AND USING CA 45.2 & CA 45.21 (45 X 25 MM) AS TOP AND BOTTOM CHANNEL PARTITION DIMENSION - 45 X 25 MM

AND GLASS TO GLASS BUTT JOINT WITH ALUMINIUM I,L,& T JOINTS FINISH:- BLACK ANODIZED FINISH TECH / SKY / GEZE.

GLASS: 10 MM THK CLEAR TOUGHENED GLASS(Providing material and labour charge for fully glazed partition with 12 mm toughen glass fixing on suggested brackets . Providing material & labour charge for making Fully Glazed Double leaf Door rest on 150 kg of floor spring door size of size 900 mm x 2225 mm each having 12 mm extra clear toughen glass with crystal edges & frosted effects . All complete with hole , cut work etc. Glazed Door supported on floor spring of 150 kg & pivots with fitting on top/bottom/corner patch fittings . Pheripheral frame make with 12 mm MR grade ply finished with 1 mm thk suggested shed laminate based on 50mm x25 mm aluminium section (16 guage) Complete with all necessary hardwares like 450 mm high handles, glass to glass locks/Conceal Mortise Locks etc as per details given in drawing and as per instructions of Architect/Engineer In charge

Materials:

- 12 MM thk toughen clear glass for modular partition.
- Black Anodized Finish Aluminum Sections
- 12 mm toughen glass door
- 150 kg floor spring for glazed door
- SS 304 handles as suggested/selected.
- Hardware: 5m, ozone, inox , ketch etc.

Workmanship:

Item includes all necessary fitting/fixing fixtures –as per approved Hardware system with double action floor spring, handle with conceal lock, door stop complete as per drawing. All doors should be completed as per design; including necessary support of plywood in ceiling etc. to be provided without any extra cost. Sample material & any other Requirement shall be as per instruction of Authority /consultant Sample mock shall be approved from Authority /consultant

Mode of Measurements:

Mode of Measurement: Measurement consider length x height for billing. Contractor has to submit certificates for each material quality & test reports wherever it required.)(toughen glass , Hardware etc.)

Clear Opening area shall be measured & paid in Square meter. No any extra charges for above ceiling support. No extra payment will be given for any of the reasons. The rate shall be for a unit of per sq mt which is including length x height

6

VINEER FINISH FLUSH PARTITION WITH DOOR Providing & fixing veneer finish flush partition up to false ceiling ht (thickness of partition is 82 mm) having 12 mm thick mr 303 plywood both side on aluminum framing. Aluminum framing size for vertical & horizontal support is 50 mm x 25 mm & grid size is 600 mm x 600 mm . All exposed surfaces finished with 4 mm thick suggested veneer finish with PU Polish with mat finish . Make necessary grooves as per shown in drawing. All bottom ends are covered with Ghana teac bidding patti finished with veneer. Complete with all necessary hardware & adhesives as per details given in drawing and as per instructions of Architect/consultant/Engineer In charge. Contractor has to provide all necessary cut outs (race ways.) for Electrical works & no extra payment shall be made for it.

Material:

- 12 mm thick MR grade plywood IS 303 shall be used for partition work as per approved make and sample by Authority/Consultant
- Aluminum section shall be used as per approved make list and confirming to relevant IS codes and approvals.
- 4 mm thk veneer on both side as per approved make list and confirming to relevant IS codes and approved by Authority/Consultant.
- Veneer finished with suggested PU polish.

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Authority/Consultant.
- Frame structure –Aluminum pipes of 16 guage having size of 50 mm x 25 mm.

Workmanship:

- Work complete as per above specification.
- All the partition should be fitted to ensure accurate positioning & line level of ceiling, flooring, and wall system as per the site / EIC requirements.
- Work including wherever necessary core cutting , drilling ,anchoring etc complete.
- The junction of the partition with masonry & all penetration through the partition has to be treated with acoustic sealant.

Mode Of Measurements:

- The size of the partition will be measured from flooring to false ceiling. There will be not extra payment for inside supports of partition. Contractor have to submit necessary test reports & certificates of plywood etc. Measurement consider length x height for billing.
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.
- All joints of vineers & grooves are as per suggested by Architect/EOI.

7

LAMINATE FINISH FLUSH PARTITION/ PARTLY GLAZED PARTITION WITH DOOR Providing & fixing full height partly laminated & partly glazed partition (up to false ceiling ht) (thinness of partition is 75 mm) using 12 mm thick mr grade plywood IS 303 both side on aluminum framing of guage 16 . Aluminum framing size for vertical & horizontal support is 50 mm x 25 mm .Grid of aluminum framing is 600 mm x 600 mm. All exposed surfaces finished with 1 mm thick laminate of approved shade without any air gap and grooving as per design. . Necessary framing to be erected above false ceiling (up to beam and slab height.) No extra cost to be paid for the same. Before installation, make hole/face plate for conduit pipes of electrical / networking cables with open able stud from partition Including all materials and labour etc.

For glazing Using of 12 mm thick toughen clear glass with proper crystal edges & with suggested frosted films on glass. Frosted film material rate is provided extra as per given cost in tender item. All joints are covered with Ghana teak bidding Patti finished with laminate. Complete with all necessary hardware & adhesives as per details given in drawing and as per instruction of Architect/consultant/Engineer In charge.

Providing & Fixing both side laminate finish flush partition up to false ceiling ht (thickness of partition is 75 mm) having 12 mm thick MR grade plywood both side on aluminum framing . Aluminum framing size for vertical & horizontal support is 50 mm x 25 mm having guage of 16.. Grid of aluminum framing is 600 mm x 600 mm. All exposed surfaces of both side laminate finish flush partition .Make necessary grooves as per shown in drawing. Necessary framing to be erected above false ceiling (up to beam and slab height.) No extra cost to be paid for the same. Before installation, make hole/face plate for conduit pipes of electrical / networking cables with open able stud from partition Including all materials and labor etc. All joints are covered with burma border bidding Patti finished with laminate/veneer as per actual site finish. Complete with all necessary hardware & adhesives as per details given in drawing and as per instructions of Architect/Engineer In charge. Contractor has to provide all necessary cut outs (race ways.) for Electrical works & no extra payment shall be made for it.

Material:

- 12 mm thick MR grade plywood IS 303 shall be used for partition work as per approved make and sample by Authority .
- Aluminum section shall be used as per approved make list and confirming to relevant IS codes and approvals.
- 1 mm thick Laminate on suggested side as per approved make list and confirming to relevant IS codes and approved by Architect/consultant/Engineer.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Architect/consultant/Engineer.

- Frame structure –Aluminum pipes of 16 guage having size of 50 mm x 25 mm.

Workmanship:

- Work complete as per above specification.
- All the partition should be fitted to ensure accurate positioning & line level of ceiling, flooring, and wall system as per the site / EIC requirements.
- Work including wherever necessary core cutting, drilling, anchoring etc complete.
- The junction of the partition with masonry & all penetration through the partition has to be treated with acoustic sealant.

Mode Of Measurements:

- The size of the partition will be measured from flooring to false ceiling. There will be not extra payment for inside supports of partition. Contractor have to submit necessary test reports & certificates of plywood etc. Measurement consider length x height for billing.
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.
- All joints of laminate & grooves are as per suggested by Architect/EOI.

8

MDF FLUTED BAFFLE PANEL/PVC FLUTED BAFFLE PANEL CEILING The works include providing & fixing of 18 mm MDF Ply Board Ceiling finish with PU color or readymade PVC Baffle panel ceiling which Incorporates a fully concealed Aluminum grid. Complete with all necessary hardware, fittings and accessories. Finish with suggested laminates. The job also includes providing access panels, cutting of spot lights, luminaries, speaker, etc. Sheets in size 8' x 4' laminate 1 mm in thickness. as suggested shed. ½" (or 3/8") screwed on steel stud system. The steel stud frame consisting of main furring Alum channel at every 600 mm and cross channel at every 600 mm. At bottom of laminate area fixing of MDF fluted panels finish with PU paint as suggested shed. Both main and cross channels are attached though jaw clip. Screws will be corrosion proof either Chromised or Cynated. Screw fixing is done mechanically with drilling machine & suitable attachment. The gaps will be initially filled with jointing compound and then taped by self adhesive covered with proper jointing compound..Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

Material:

- MDF Fluted Panel finish with PU polish./PVC readymade fluted baffle panel .
- Aluminum section shall be used as per approved make list and confirming to relevant IS codes and approvals.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Architect/consultant/Engineer.
- Frame structure –Aluminum pipes of 16 guage having size of 50 mm x 25 mm.

Workmanship:

- Work complete as per above specification.
- Work including wherever necessary core cutting, drilling, anchoring etc complete.
- Proper supporting system including above false ceiling supports.

Mode Of Measurements:

- There will be not extra payment for inside supports of ceiling or any polish work. Contractor have to submit necessary test reports & certificates of material . Measurement consider Length x width for billing.
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter. Length x width
- All joints of false ceilings/panels are as per suggested by Architect/EOI.

9

LAMINATE FINISH COLUMN PANELING :Providing & fixing column paneling having suggested aluminum grid of 37mm x 37mm or 50mmx 25 mm framing (whichever requires.)Having 16 guage) of size 600 mm x600 mm by aluminium sections of given size. Grid frame is covered with 12mm thick mr grade plywood. To create suggested groove & neices. All grooves are finished with laminate. All exposed surfaces covered with 1 mm thick laminates of approved shade as instructed by Architect/consultant/Engineer In charge. Complete with all hardwares like s nails, ss screws, adhesives etc. shown in detail drawings. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it. Amount shall be paid only for the Paneling between the False Ceiling & Flooring.Use of PVD patties and fluted laminate as suggested,Basic rate of fluted laminate is 2000 rs per sheet.

Workmanship:

- Frame shall be made by aluminum sections as per sample approved by Architect/EOI.
- Laminate shall be used for finishes of exposed/internal surfaces as per sample approved by Architect/EOI.
- All Frames should be properly levelled without any sagging and with smooth finishing and closing. There should be no variation or deviation of any kinds.
- The whole work is to be completed as per design ; sample material & any other requirement shall be as per instruction of Architect/EOI..
- Installation: Fixing False column as per required shape and size made from 710 marine grade ply with necessary wooden frame work required all necessary fittings & hardware complete.
- Use of PVD patties as suggested pattern

Measurements:

- Only laminate finish elevation surface area measured and paid.
- The whole work done shall be measured in square meter for area of work done. The rate shall be for a unit of one Square Meter.
- Exposed Surface area shall be measured & paid in Square meter.
- Measurement consider Length x height for billing.

10

PLY LAMINATE CEILING The works include providing & fixing of Ply Board Ceiling which Incorporates a fully concealed Aluminum grid. Complete with all necessary hardware, fittings and accessories. Finish with suggested laminates. The job also includes providing access panels, cutting of spot lights, luminaries, speaker, etc. Sheets in size 8' x 4' laminate 1 mm mm in thickness. finish with suggested shed.above 12 mm ply . ½" (or 3/8") screwed on steel stud system. The steel stud frame consisting of main furring Alum channel at every 600 mm and cross channel at every 600 mm. Both main and cross channels are attached though jaw clip. Screws will be corrosion proof either Chromised or Cynated. Screw fixing is done mechanically with drilling machine & suitable attachment. The gaps will be initially filled with jointing compound and then taped by self adhesive covered with proper jointing compound..Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

Material :

MR Grade Plywood :

Absorb wool wherever it requires.

1 mm thk laminate

Aluminum Framing –

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The work should be strictly carried out as per the drawing given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for its length and width.
- B. The rate shall include cost of all materials, all labors, transportation, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
- C. The item will be measured actually and paid on square meter for any length and Width / breadth.

11

VINEER FINISH TABLE 1.80X.90 Providing & fixing veneer finish table having given size with height of 750 mm (as per attached detail drawing) Table having 40 mm Thick. rest on 18 mm MR grade ply . Top is cantilever then its base supports. Base supports made by 18 mm thick sandwich ply . A Table having two nos of drawers and a shutter for both sides in a pedestal and a key board tray at mid of table. Drawers & Keyboard tray rest on telescopic channels. Shutters & drawers having thickness of 24 mm which are made by 18 mm + 6 mm ply to create conceal grooves as handle. Drawers & keyboard side, Bottom & Back of pedestal are made up of 12 mm thick mr grade Ply Wood. Having 3" high Footrest of 18 mm ply.(
(1) In elevation suggested use of pvd patties and fluted panels.)
All Exposed surfaces covered with 4 mm thick veneer complete with PU polish. And internal surfaces covered by 1mm thick laminate. all complete with given no of key board tray, drawers on telescopic channels, locks, stoppers, SS Screws,MS nails, Auto hinges, Cable Manager etc as per shown in detail drawings & as per instructions of architect/consultant / in charge engineer. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1.0 Materials:

18 mm,12 mm,6 mm MR Grade ply of IS 303.

Bidding Patti:- Burma border

4 mm thick veneer

PU polish,

PVD patties

Fluted Panels

1 mm laminates/fluted laminates/acrylic laminates for internal surfaces as finished material

3.0 Workmanship:-

- The item covers the requirement of veneer top finish with PU polish; laminate for table edges and for inside surfaces.
- All members of frames shall be exactly at right angles. The right angles shall be Checked from inside surface of the respective members.

Joints: - Frame shall have standard, cross halved, but joints will not be permitted.

- Plywood with required size shall be fixing to frame with use of synthetic resin adhesive as well as screws, nails as directed by engineer in charge and as per drawing.

Polishing/ Laminated.

- All exposed member of plywood should be finished with 4.0 mm thick veneer of standard Make with PU polished with requisite coats approved shade & internal surfaces covered with 1 mm thk laminates and melamine polish as per relevant Specification.

3.0 Mode of Measurement & Payment:

- The rate shall be consolidated for all above items. The rate shall include cost of all materials, fixtures, joineries etc. & labour to complete the work satisfactorily as per instructions & necessary certificate to be produced to Engineer-in-charge by agency.

- The necessary vouchers bill of purchase of materials shall be produced if demanded by the engineer in charge.
- No Extra payment will be given for any reasons. The rate shall be for a unit of sq mt. basis Of work done for completed Item.
- Measurement consider Length x width for billing.

12

VINEER FINISH CREDENZA Providing & fixing Veneer Finish back credenza having depth of 375 mm , with corian top (top width is 450 mm (which covers sides, edges & 50 mm bottom of ply, front edge 1.5")) based on 19mm Thick. MR grade Ply Wood with all necessary proper solution, finished with rubbing and buffing. Having vertical sandwich supports for shutters & horizontal single self as per given in detail drawings drawers made out of 18 mm Thick. MR grade Ply Wood. Backside of credenza is covered with 12 mm thick MR grade plywood. All exposed and internal Joints complete with burma border bidding patti finished with laminate/melamine polish . All exposed surfaces covered with 4 mm veneer and finished with PU Polish with mat finish and internal surfaces covered with 1 mm thick approved shade laminates as instructed by Architect/consultant/Engineer In charge. Complete as per detail Drawings, with all hardware like MS nails, SS-304 screws, magnet, Stoppers, L - hinges, table chain, 4" mat finish SS handles etc.

Material

- 6 mm thick corian white with buffing.
- 18 mm MR grade ply of IS 303 for corian base support and for base box.
- Bidding Patti:- Burma border
- 4 mm veneer complete with PU spray polish at all exposed surfaces as finished material.
- 1 mm laminate for internal surfaces as finished material

Workmanship: Storage body is made of 18 mm MR grade ply IS-303 with 6 mm thick corian on top rest on 18 mm thick MR grade ply finished with 4mm thick Veneer finish at expose surfaces and internal side all open edges should be covered with veneer matching patti / PU polish. Below top finished with Balancing laminate. 1 mm thick laminate finish including require nos of drawer and shutter all type of fittings , fixtures, hardware etc complete .SS 304 grade conceal handle shall be provide as per approved selection & detailed drawing and instruction of Architect/consultant . Rate is inclusive of telescopic channel of suggested make.

Wire management: provision of special flexible component that allows easy and safe passage of wires

The mode of Measurement: The size of the credenza will be measured from length x height for billing Basic rate of veneer is Rs 100/Sq ft.) The rate shall be for one square meter.

13

GLASS TOP VINEER FINISH ROUND TABLE (0.90 mt Dia) :- Providing & fixing glass top veneer finish meeting table having 12 MM thk toughen glass on top with all bewale and crystle edges fitted with pvc buffers . base support made with 12 mm thk

sandwich ply of square box base size of 450mm x 450 mm with 12 mm deep suggested grooves /patties as suggested in pattern finish with 4 mm thk veneer complete with suggested pu polish. veneer finish meeting table 750 mm height , 900 mm diametre table have base of 12 mm + 12 mm (top,bottom & all sides) thick sandwich plywood for supporting vertical supports. Ply for grooving as indicated in drawing. (as per details given in sectional drawing) Edges of the table covered by burmaborder bidding Patti finished with veneer/polish. All external surfaces covered by 4mm thick veneer, complete with PU spray polish. All internal surfaces covered with All complete as per shown in detail drawings & as per instructions of architect / in charge engineer. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1) Material :

- 12 mm thk extra clear toughen glass with bewail/crystal edges .
- 12 mm MR Grade ply of IS 303.
- Bidding Patti:- Burma border
- 4 mm thick veneer finish with PU polish.
- 1 mm laminates for internal surfaces as finished material

2) Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. The work include all embossing patti work on uniformly distances . All concealed work including making key board, wire manager should be done properly. No damage should be done to existing furniture / wall surface. The work should be strictly carried out as per the drawing given by the Architect.

3) Mode of Measurement & Payment:

The rate shall be for a unit of sqmt. basis (length x height)

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14

LAMINATE FINISH WALL PANELING: Providing & fixing wall paneling having suggested aluminum grid of 37mm x 37mm or 50mmx 25 mm framing (whichever requires.)Having 16 guage) of size 600 mm x600 mm by aluminium sections of given size. Grid frame is covered with 12mm thick mr grade plywood. To create suggested groove & neices. suggested use of pvd patties, fluted laminate and fluted panel. All grooves are finished with laminate. All exposed surfaces covered with 1 mm thick laminates of approved shade as instructed by Architect/consultant/Engineer In charge. Complete with all hardwares like s nails, ss screws, adhesives etc. shown in detail drawings. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it. Amount shall be paid only for the Paneling between the False Ceiling & Flooring.(

Materials:-

Aluminium framing, 12 mm thk IS 303 grade ply, 1 mm laminate, /fluted laminate/acrylic laminate,fluted panels,

Workmanship:

Frame shall be made by aluminum sections as per sample approved by Authority /Consultant
Laminate shall be used for finishes of exposed/internal surfaces as per sample approved by Authority /Consultant
All Frames should be properly levelled without any sagging and with smooth finishing and closing. There should be no variation or deviation of any kinds.Suggested nieces and grooves in panelling.
The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Authority /Consultant.

Installation: Fixing False panneling as per required shape and size made from IS 303 grade ply with necessary wooden frame work required all necessary fittings & hardware complete.

Measurements:

Only elevation surface area measured and paid. The whole work done shall be measured in square meter for area of work done. The rate shall be for a unit of one Square Meter.

Clear opening area shall be measured & paid in Square meter.

15

VENETIAN BLIND: Providing and fixing wood blinds as per approved make spring drive system with steel ball chain/one touch with speed control action wood blind with palmet, end brackets with head rail, components, bottom bar. Solar protection Fabric of Color with manual operation and warranty etc as per manufacturer's specifications. material to be as per approved sample. All the work complete as per the detailed drawing and instruction of Architect/consultant/ENGINEER IN CHARGE.(Contractor shall provide treated wooden pelmet complete in all respects on which all blinds shall be fixed and should also take load of all the manual blinds).

1. Material :

- blinds shall be used as per approved make and sample by Authority/consultant
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Authority/consultant.
- Rate including palmet, brackets, fabric along with all hardwares.

2. Workmanship:

- Fixing of blinds as per approved sample by Authority/consultant.
- Work is to be completed as per design; sample material & any other requirement shall be as per instruction of Authority/consultant.

3. Measurements:

- The size of the blind will be measured from end to end bracket (left to right bracket) height will be measured from top of the pelmet to sill bottom LVL and clear opening size only there will be not extra payment towered overlapping.
- Area shall be measured in Square meter.

16

LAMINATE FINISH WORKSTATIONS Providing & fixing work station of suggested lenth 0.60 mt width x 0.76 ht. having ht of 750 mm Top, bottom & vertical supports of table having suggested no of drawers & 1 no of shutters made by 19 mm thick Ply wood. Drawers are made up of 19mm thick Ply Wood. Back Ply of table is also made up of 12mm Thick. PLY Wood. 2 Drawer units attached with main table are made up of 19mm thick. Ply wood at all Sides & 19mm thick Ply wood bottom. All Drawers & Keyboard Trey rest on Telescopic Channels. All internal & external Joints finished with Burma teak bidding Patti. All exposed and internal surfaces covered with 1 mm thick approved shade laminates & Complete as per detail drawings & as instructed by Architect/consultant/ Engineer In charge. Complete with all necessary hardware like nails, ss screws, magnet, hinges, locks for drawers & shutter, table chain, Key board tray, TDS channel, adhesives etc. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1.0 Materials:-

- 18 mm MR Grade ply of IS 303.
- 12 mm MR Grade ply of IS 303.
- 1 mm laminate

Each workstation have provision of privacy screen up to 1'height on table top and table edges.

Longitude privacy screen cover with a magnatic board and soft board paneling. Side privacy screen cover with soft board paneling.

Bidding Patti:- Burma border.

1 mm laminates for exposed & internal surfaces as finished material

2.0 Workmanship:-

2.1 The item covers the requirement of frames, plywood, and laminate for table edges.

2.2.1 All members of frames shall be exactly at right angles. The right angles shall be Checked from inside surface of the respective members

Joints: - Frame shall have standard, , cross halved, but joints will not be permitted.

2.3 Plywood with required size shall be fixing to frame with use of synthetic resin adhesive as Well as screws, nails as directed by engineer in charge and as per drawing.

2.4 Laminated All exposed & internal member of plywood should be laminated with 1.0 mm thick laminate of standard make of approved shade & as per relevant **Specification**

3.0 Mode of Measurement & Payment:

3.1 The rate shall be consolidated for all above items. The rate shall include cost of all materials, Fixtures, joineries etc. & labor to complete the work satisfactorily as per instructions & Necessary certificate to be produced to Engineer-in-charge by agency.

3.2 The necessary vouchers bill of purchase of materials shall be produced if demanded by the engineer in charge.

3.3 No Extra payment will be given for any reasons. The rate shall be for a unit per sq mt. basis Of work done for completed Item.

The rate shall be for a unit of sqmt. basis (length x height)

17

LAMINATE FINISH CREDENZA: Providing Material & Labour charge for making Laminate Finish Low ht side credenza having depth of 375 mm , with 18 mm mr grade ply top, based on sandwich vertical supports made by 18 mm Thk. mr grade Ply Wood with all shutters & horizontal single self (made by 18 mm thk mr grade ply) as per given in detail drawings. Backside of low ht storage is covered with 12 mm thk plywood. Shutters made with 18 mm +6 mm ply with conceal handles. All exposed and internal Joints complete with burma border bidding patti (25 mm x 12 mm) finished with melamine polish. All exposed and internal surfaces covered with 1 mm thk approved shade laminates as instructed by Architect/Engineer In charge. Complete with all hardwares like MS nails, ss-304 screws, magnet, Stoppers, L - hinges, 19 mm multilocks, table chain, conceal handles etc.

Material

- 18 mm MR grade ply of IS 303.
- 6 mm MR grade ply of IS 303.
- Bidding Patti:- Burma border
- 1 mm laminate for exposed & internal surfaces as finished material
- Hardware : ozone, etc

Workmanship: Storage body is made of 18 mm MR grade ply IS-303 with sandwich top finished with 1mm thick laminate finish at all expose surfaces and internal surface . all open edges should be covered with bidding Patti finish with laminate Finish including require nos of drawer and shutter all type of fittings , fixtures, hardware etc complete .SS 304 grade conceal handle shall be provide as per approved selection & detailed drawing and instruction of Authority /consultant/ Rate is inclusive of telescopic channel of suggested make.

Wire management: provision of special flexible component that allows easy and safe passage of wires

The mode of Measurement: The size of the credenza will be measured from length x height for billing Basic rate of Basic rate of laminate is Rs 1500/ sheet.)

The rate shall be for one square meter.

18

LAMINATE FINISH STORAGE UP TO 1.52 MT HT. := Providing & fixing low ht storage having suggested length & 1.52 MT height and having depth of 450 mm, having skirting of 75 mm, with proper locks. suggested nos of vertical supports & horizontal shelves made by 18 mm thick MR grade ply, having shutters of 8 mm thick double sandwich ply with using 12 mm thick MR ply for framing. All complete with proper Burma border bidding. Back ply is 12 mm MR grade ply. All exposed & internal surfaces are covered with 1 mm thick laminate. External & internal joints covered with bidding Patti complete with laminate finish. All complete with proper hardware like locks, S.S. Screws, MS Nails, Magnets, table chains, cable manager SS 304 Handles of 250 mm and 100 mm dia etc. All Details as per shown in detail drawings & as per instructions of architect/consultant / in charge engineer

Material

- 18 mm MR grade ply of IS 303 for base support and for base box.
- 12 mm MR grade ply of IS 303 for backside of storage.
- 8 mm MR grade sandwich ply of IS 303 for shutter
- Bidding Patti:- Burma border
- 1 mm laminate for exposed & internal surfaces as finished material

Workmanship: Storage body is made of 18 mm MR grade ply IS-303 with sandwich

top finished with 1mm thick laminate finish at all expose surfaces and internal

surface . all open edges should be covered with bidding Patti finish with laminate

Finish including require no of shelves and shutter all type of fittings , fixtures,

hardware, cable manager etc complete .SS 304 grade conceal handle shall be

provide as per approved selection &detailed drawing and instruction of

Architect/Authority . Wire management: provision of special flexible component that allows easy and safe passage of wires

The mode of Measurement: The size of the credenza will be measured from

length x height for billing Basic rate of laminate is 1500/sheet.) The rate shall be for

one square meter.LengthXHeight

19

LAMINATE FINISH OVERHEAD STORAGE:- Providing & fixing Laminate Finish overhead storage having depth of 450 mm , with 18 mm mr 303 grade grade ply top & vertical supports made by 18 mm Thick. 303 grade Ply Wood with all shutters & horizontal single self (made by 18 mm thick IS 303 grade ply) as per given in detail drawings.Bottom made with 12 mm ply. Backside of storage is covered with 12 mm thick plywood. Shutters made with 18 mm + 6 mm ply with conceal handles. All exposed and internal Joints complete with burma border bidding patti finished with melamine polish. All exposed and internal surfaces covered with 1 mm thick approved shade laminates as instructed by Architect/consultant/Engineer in charge. Complete with all hardware like MS nails, ss-304 screws, magnet, Stoppers, L - hinges, 19 mm multilocks, table chain, conceal handles etc.

Material

- 18 mm MR grade ply of IS 303 for base support and for base box.
- 12 mm MR grade ply of IS 303 for backside of storage.

- 6 mm MR grade sandwich ply of IS 303 for shutter
- Bidding Patti:- Burma border
- 1 mm laminate for exposed & internal surfaces as finished material

Workmanship: Storage body is made of 18 mm MR grade ply IS-303 with sandwich top finished with 1mm thick laminate finish at all exposed surfaces and internal surface. All open edges should be covered with bidding Patti finish with laminate. Finish including require no of shelves and shutter all type of fittings, fixtures, hardware, cable manager etc complete. SS 304 grade conceal handle shall be provide as per approved selection & detailed drawing and instruction of Architect/Authority. Wire management: provision of special flexible component that allows easy and safe passage of wires

The mode of Measurement: The size of the overhead storage will be measured from length x height for billing Basic rate of laminate is 1500/sheet.) The rate shall be for one square meter.LengthXHeight

20

VINEER FINISH HAVING CORIAN TOP CONFERENCE TABLE. Providing & fixing corian top veneer finish conference table having size of 2400x 5800 mm , 750 mm height , 12mm Thick. Corean Top based on 18 mm thick MR grade plywood finished by rubbing ,buffing & pasting (Core an top covers 300 mm bottom of table at longitudinal side & 300 mm bottom of table at shorter side including edges) table have base of 18 mm thick MR grade plywood for footrest & supporting vertical supports made by of 12mm+8 mm thick sandwiched Ply for grooving as indicated in drawing. At internal sides use of 0.30 mt ht 5 mm smoke mirror/ acrylic mirror laminate which are pasting on ply with use of appropriate silikon. (as per details given in sectional drawing) Base of the table covered by burmateak bidding Patti finished with veneer. All external & internal surfaces covered by 4 mm thick veneer, complete with PU spray polish All complete as per shown in detail drawings & as per instructions of architect / in charge engineer. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1.0 Materials:-

- 6 mm thick Corian white.
- 18 mm MR Grade Plywood.
- 12 mm MR Grade Plywood.
- 8 mm MR Grade Plywood.
- 5 mm Smoke Mirror /acrylic laminate
- 4 mm veneer with PU spray Polish
- 1 mm laminate
- Burma border as bidding.

Misc. Fixtures and fastening shall be conforming to relevant IS/as approved by office.

2.0 Workmanship:-

Providing & fixing Conference Table having 6 mm thk corian top rest on 18 mm thick MR grade plywood as per given size finish with 4 mm thick veneer finish with PU mat polish .Complete with all necessary accessories & other fixture and fastening incl. using approved brand quality material & work shall be done as per drawing or directed by the Engineer in Charge.

2.2 The item covers the requirement of corian buffing, frames, plywood, and polishing for conference Table and its fixing.

2.3.1 All members of frames shall be exactly at right angles. The right angles shall be Checked from inside surface of the respective members

Joints: - Frame shall have standard,. Nailed or glued but joints will not be permitted.

2.4 Corian/Plywood with required size shall be fixing to frame with use of synthetic resin adhesive as well as screws, nails as directed by engineer in charge and as per drawing.

2.5 Finishing

All exposed member of table should be covered with 4 mm thick veneer finish complete with PU mat polish and internal surfaces covered with laminates.

2.6 All fixtures and fastening shall be fixed as per detailed drawing/ as directed by engineer in charge.

3.0 Mode of Measurement & Payment:

3.1 The rate shall be consolidated for all above items. The rate shall include cost of all materials, Fixtures, joineries etc. & labor to complete the work satisfactorily as per instructions & Necessary certificate to be produced to Engineer-in-charge by agency.

3.2 The necessary vouchers bill of purchase of materials shall be produced if demanded by the Engineer in charge.

3.3 No Extra payment will be given for any reasons. The rate shall be for a unit of running mtr. basis Of work done for completed Item.

21

ACAUSTIC PANELING: Providing & Fixing acaustic paneling as suggested pattern having 12 mm thk acaustic sheet on 6 mm ply (acaustic sheet (plane or colorful)) suggested sides (single or both side) on aluminum framing . Aluminum framing size for vertical & horizontal support is 50 mm x 25 mm. Grid of aluminum framing is 600 mm x 600 mm. To fill absorb wool in all alu framing . All exposed surfaces of ply finished with suggested shed acaustic sheet/panels as per given pattern in design. acaustic sheet is fitted with 10 mm thk foam with gripper acaustic sheet with help of staplers on uniformly distances . Create necessary colorful patterns with using acaustic panels/suggested fabric as per shown in drawing. Necessary framing to be erected above false ceiling (up to beam and slab height.) No extra cost to be paid for the same. Before installation, make hole/face plate for conduit pipes of electrical / networking cables with open able stud from partition Including all materials and labor etc. All joints are covered with bidding Patti finished with polish /color/fabric as per actual site finish. Complete with all necessary hardware & adhesives as per details given in drawing and as per instructions of Architect/Engineer In charge. Contractor has to provide all necessary cut outs (race ways.) for Electrical works & no extra payment shall be made for it. gripper fabric acaustic sheet basic cost is 140 rs sq ft .

Material:

- 6 mm thick MR grade plywood IS 303 /MDF shall be used for inside paneling work as per approved make and sample by Authority/Consultant.
- 12 mm thk acoustic sheet /colorful acoustic panels as per suggested layer/design
- Absorb Wool/Glass Wool
- fitted with 10 mm thk foam with gripper acoustic sheet with help of staplers
- Aluminum section shall be used as per approved make list and confirming to relevant IS codes and approvals.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Authority/Consultant.
- Frame structure –Aluminum pipes of 16 guage having size of 50 mm x 25 mm.

Workmanship:

- Work complete as per above specification.
- All the paneling should be fitted to ensure accurate positioning & line level of ceiling, flooring, and wall system as per the site / EIC requirements.
- Work including wherever necessary core cutting ,drilling ,anchoring etc complete.

- Contractor have to submit ease report/NRC value report of acaoustic sheet (whichever suggest by authority/architect.) for acoustic work of said area.

Mode Of Measurements:

- The size of the acaoustic paneling will be measured from flooring to false ceiling. There will be not extra payment for inside supports. Contractor have to submit necessary test reports & certificates of plywood, ease report for acoustic work etc. Measurement consider length x height for billing.
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.

22

FULL HEIGHT STORAGE Providing & fixing full ht storage having suggested length & 2400 mm height and having depth of 600 mm, having skirting of 75 mm, with proper locks. Suggested nos of vertical supports & suggested no of horizontal shelves made by 18 mm thick MR grade ply, having shutters of 8 mm thick double sandwich ply with using 12 mm thick MR ply for framing. All complete with proper Burma border biding. Back ply is 12 mm MR grade ply. All exposed & internal surfaces are covered with 1 mm thick laminate. External & internal joints covered with bidding Patti complete with laminate finish. All complete with proper hardware like locks, S.S. Screws, MS Nails, Magnets, table chains, cable manager SS 304 Handles of 250 mm and 100 mm dia etc. All Details as per shown in detail drawings & as per instructions of architect/consultant / in charge engineer.

Material

- 18 mm MR grade ply of IS 303 for base support and for base box.
- 12 mm MR grade ply of IS 303 for backside of storage.
- 8 mm MR grade sandwithch ply of IS 303 for shutter
- Bidding Patti:- Burma border
- 1 mm laminate for exposed & internal surfaces as finished material

Workmanship: Storage body is made of 18 mm MR grade ply IS-303 with sandwich top finished with 1mm thick laminate finish at all expose surfaces and internal surface . all open edges should be covered with bidding Patti finish with laminate Finish including require no of shelves and shutter all type of fittings , fixtures, hardware, cable manager etc complete .SS 304 grade conceal handle shall be provide as per approved selection &detailed drawing and instruction of Architect/Authority . Wire management: provision of special flexible component that allows easy and safe passage of wires

The mode of Measurement: The size of the credenza will be measured from length x height for billing Basic rate of laminate is 1500/sheet.) The rate shall be for one square meter.LengthXHeight

23

CORIAN TOP VINEER FINISH CREDENZA Providing & fixing Corian Top Veneer Finish back credenza having depth of 375 mm , with corian top (top width is 450 mm (which covers sides, edges & 50 mm bottom of ply,front edge1.5")) based on 19mm Thick. MR grade Ply Wood with all necessary proper solution, finished with rubbing and buffing. Having vertical sandwich supports for shutters & horizontal single self as per given in detail drawings drawers made out of 18 mm Thick. MR grade Ply Wood. Backside of credenza is covered with 12 mm thick MR grade plywood. All exposed and internal Joints complete with burma border bidding patti finished with laminate/melamine polish . All exposed surfaces covered with 4 mm veneer and finished with PU Polish with mat finish and internal surfaces covered with 1 mm thick approved shade laminates as instructed

by Architect/consultant/Engineer In charge. Complete as per detail Drawings, with all hardware like MS nails, SS-304 screws, magnet, Stoppers, L - hinges, table chain, 4" mat finish SS handles etc.

Material

- 6 mm thick corian white with buffing.
- 18 mm MR grade ply of IS 303 for corian base support and for base box.
- Bidding Patti:- Burma border
- 4 mm veneer complete with PU spray polish at all exposed surfaces as finished material.
- 1 mm laminate for internal surfaces as finished material

Workmanship: Storage body is made of 18 mm MR grade ply IS-303 with 6 mm thick corian on top rest on 18 mm thick MR grade ply finished with 4mm thick veneer finish at expose surfaces and internal side all open edges should be covered with veneer matching patti / PU polish. Below top finished with balancing laminate. 1 mm thick laminate finish including require nos of drawer and shutter all type of fittings , fixtures, hardware etc complete .SS 304 grade conceal handle shall be provide as per approved selection & detailed drawing and instruction of Authority/consultant. . Rate is inclusive of Telescopic channel of suggested make.

Wire management: provision of special flexible component that allows easy and safe passage of wires

The mode of Measurement: The size of the credenza will be measured from length x height for billing Basic rate of veneer is Rs 150/Sq ft.) The rate shall be for one square meter.

24

CORIAN TOP VINEER FINISH CEO TABLE :- Providing & fixing corian top veneer finish table having given size (& Shape (4.11x1.0 mt in half circular shape) with height of 750 mm (as per attached detail drawing) Table having 40 mm Thick. at top made by corian finish with buffing polishing etc rest on 18 mm MR grade ply . Top is cantilever then its base supports. Base supports made by 18 mm thick sandwich ply . A Table having two nos of drawers and a shutter for both sides in a pedestal and a key board tray at mid of table. Drawers & Keyboard tray rest on telescopic channels. Shutters & drawers having thickness of 24 mm which are made by 18 mm + 6 mm ply to create conceal grooves as handle. Drawers & keyboard side, Bottom & Back of pedestal are made up of 12 mm thick mr grade Ply Wood. Having 3" high Footrest of 18 mm ply.(1) In elevation use of Fluted Panel & PVD patties as suggested in drawing. All Exposed surfaces covered with 4 mm thick veneer complete with PU polish. And internal surfaces covered by 1mm thick laminate. all complete with given no of key board tray, drawers on telescopic channels, locks, stoppers, SS Screws,MS nails, Auto hinges, Cable Manager etc as per shown in detail drawings & as per instructions of architect/consultant / in charge engineer. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1.0 Materials:-

- 6 mm corian white with buffing.
- 18 mm/12 mm/6 mm MR Grade ply of IS 303.
- Bidding Patti:- Burma border
- 4 mm thick veneer

1 mm laminates for internal surfaces as finished material

2.0 Workmanship:-

☑ The item covers the requirement of corian with buffing, plywood, veneer, PU polish; laminate for table edges and for inside surfaces. corian is also covered at bottom of the top.

☑ All members of frames shall be exactly at right angles. The right angles shall be Checked from inside surface of the respective members

Joints: - Frame shall have standard, cross halved, but joints will not be permitted.

☑ Plywood with required size shall be fixing to frame with use of synthetic resin adhesive as well as screws, nails as directed by engineer in charge and as per drawing.

Polishing/ Laminated.

All exposed member of plywood should be laminated with 4.0 mm thick veneer of standard Make with PU polished with requisite coats approved shade & internal surfaces covered with 1 mm thk laminates and melamine polish as per relevant Specification.

3.0 Mode of Measurement & Payment:

The rate shall be consolidated for all above items. The rate shall include cost of all materials, fixtures, joineries etc. & labour to complete the work satisfactorily as per instructions & necessary certificate to be produced to Engineer-in-charge by agency.

The necessary vouchers bill of purchase of materials shall be produced if demanded by the engineer in charge.

No Extra payment will be given for any reasons. The rate shall be for a unit of sq mt. basis Of work done for completed Item.

The size of the table will be measured from length x width for billing.

25

UV MARBLE PVC SHEET PANELING AT CEO CABIN :-Providing & fixing UV Marble PVC sheet paneling having suggested aluminum grid of 37mm x 3 mm 37mm or 50mmx 25 mm framing (whichever requires.)Having 16 guage) of size 600 mm x600 mm by aluminium sections of given size. Grid frame is covered with 12mm thick mr grade plywood.and as finish material use of 3 mm uv marble sheet with using PVD patties of suggested thkness . Complete with all hardwares like s nails, ss screws, adhesives etc. shown in detail drawings. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it. Amount shall be paid only for the Paneling between the False Ceiling & Flooring.Basic rate of UV sheet is 250 rs per sq ft.

1.0 Materials:-

4 mm UV PVC sheet .

12 mm/6 mm MR Grade ply of IS 303.

Bidding Patti:- Burma border

Aluminium Section

Workmanship;

Installation; 4 mm UV Marble sheet based on 8 mm ply both side on aluminium framing sections size of 50mmx37mm or 37mmx37 mm shall be used as per selection. Use of proper silicon for pasting. Back side of ply is finished with 1 mm thk laminate.

Measurements:-

Only the clear elevation area shall be measured and paid.

The work done shall be measured in square meter for area of work done. the rate shall be for a unit of one square meter.

LAMINATE FINISH TABLE IN PS CABIN (1.75x0.80x0.75)= :- Providing & fixing laminate finish table having given size with height of 750 mm (as per attached detail drawing) Table having 38 mm Thick .at top made by 18 mm thick sandwich ply . Top is cantilever then its base supports. Base supports made by 18 mm thick sandwich ply. A Table having drawers and a shutter in a pedestal and a key board tray at single end. Drawers & Keyboard tray rest on telescopic channels. drawers having thickness of 24 mm which are made by 18mm + 6 mm ply to create conceal grooves as handle. Drawers & keyboard, sides, Bottom is covered with 18 mm MR grade ply & Back of pedestal are made up of 12 mm thick MR grade Ply Wood. Having 3" high Footrest of 18 mm ply. At Front facade (covered with grooves as per given patterns. All internal and external surfaces covered by 1mm thick laminate. all complete with given nos of key board tray, drawers on telescopic channels, locks, stoppers, SS Screws,MS nails, Auto hinges, Cable Manager etc as per shown in detail drawings & as per instructions of architect/consultant / in charge engineer. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1.0 Materials:-

18 mm MR Grade ply of IS 303.

12 mm MR Grade ply of IS 303.

6 mm MR Grade ply of IS 303.

Bidding Patti:- Burma border.

1 mm laminates for exposed & internal surfaces as finished material

2.0 Workmanship:-

2.1 The item covers the requirement of frames, plywood, and laminate for table edges.

2.2.1 All members of frames shall be exactly at right angles. The right angles shall be Checked from inside surface of the respective members

Joints: - Frame shall have standard, , cross halved, but joints will not be permitted.

2.3 Plywood with required size shall be fixing to frame with use of synthetic resin adhesive as

Well as screws, nails as directed by engineer in charge and as per drawing.

2.4 Laminated All exposed & internal member of plywood should be laminated with 1.0 mm thick laminate of standard make of approved shade & as per relevant **Specification**

3.0 Mode of Measurement & Payment:

3.1 The rate shall be consolidated for all above items. The rate shall include cost of all materials,

Fixtures, joineries etc. & labor to complete the work satisfactorily as per instructions &

Necessary certificate to be produced to Engineer-in-charge by agency.

3.2 The necessary vouchers bill of purchase of materials shall be produced if demanded by the engineer in charge.

3.3 No Extra payment will be given for any reasons. The rate shall be for a unit per sq mt. basis Of work done for completed Item.

LAMINATE FINISH WORKSTATION: Providing & fixing work station of suggested length with privacy partion at edges of table with magnatic board and soft board cladding as suggested 0.60 mt width x 0.76 height having ht of 750 mm Top, bottom & vertical supports of table having suggested no of drawers & 1 no of shutters & drawers made by 19 mm thick Ply wood. Drawers are made up of 19mm thick Ply Wood. Back Ply of table is also made up of 12mm Thick. PLY Wood. Drawer units attached with main table are made up of 19mm thick Ply wood at all Sides & 19mm thick Ply wood bottom. All Drawers & Keyboard Trey rest on Telescopic Channels. All internal & external Joints finished with Burma teak bidding Patti. All exposed and internal surfaces covered

with 1 mm thick approved shade laminates & Complete as per detail drawings & as instructed by Architect/consultant/ Engineer In charge. Complete with all necessary hardware like nails, ss screws, magnet, hinges, locks for drawers & shutter, table chain, Key board tray, TDS channel, adhesives etc. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1.0 Materials:-

18 mm MR Grade ply of IS 303.

12 mm MR Grade ply of IS 303.

1 mm laminate

Each workstation have provision of privacy screen up to 1'height on table top and table edges.

Longitude privacy screen cover with a magnetic board and soft board paneling. Side privacy screen cover with soft board paneling.

Bidding Patti:- Burma border.

1 mm laminates for exposed & internal surfaces as finished material

2.0 Workmanship:-

2.1 The item covers the requirement of frames, plywood, and laminate for table edges.

2.2.1 All members of frames shall be exactly at right angles. The right angles shall be Checked from inside surface of the respective members

Joints: - Frame shall have standard, , cross halved, but joints will not be permitted.

2.3 Plywood with required size shall be fixing to frame with use of synthetic resin adhesive as Well as screws, nails as directed by engineer in charge and as per drawing.

2.4 Laminated All exposed & internal member of plywood should be laminated with 1.0 mm thick laminate of standard make of approved shade & as per relevant **Specification**

3.0 Mode of Measurement & Payment:

3.1 The rate shall be consolidated for all above items. The rate shall include cost of all materials, Fixtures, joineries etc. & labor to complete the work satisfactorily as per instructions & Necessary certificate to be produced to Engineer-in-charge by agency.

3.2 The necessary vouchers bill of purchase of materials shall be produced if demanded by the engineer in charge.

3.3 No Extra payment will be given for any reasons. The rate shall be for a unit per sq mt. basis Of work done for completed Item.

The rate shall be for a unit of sqmt. basis (length x height)

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LAMINATE FINISH SMALL MEETING ROOM TABLE AT EIGHT FLOOR:Providing & fixing laminate finish conference table having size of 2400x 5800 mm , 750 mm height , 40 mm Thick. Top MR grade plywood table have base of 18 mm thick MR grade plywood for footrest & supporting vertical supports made by of 12mm+8 mm thick sandwiched Ply for grooving as indicated in drawing. At internal sides use of 0.30 mt ht 5 mm smoke mirror/ acrylic mirror laminate which are pasting on ply with use of appropriate silikon. (as per details given in sectional drawing) Base of the table covered by burmateak bidding Patti finished with laminate. All external & internal surfaces covered by 1 mm thick laminate. All complete as per shown in detail drawings & as per instructions of architect / in charge engineer. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1) Material :

18 mm/12mm/8 mm MR Grade ply of IS 303.

Bidding Patti:- Burma border
1 mm laminates for internal surfaces as finished material
Use of fluted laminate/Acrylic Laminate
Table Centre supports as require.

2) Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. The work include all embossing patti work/fluted panel on uniformly distances. All concealed work including making key board, wire manager should be done properly. No damage should be done to existing furniture / wall surface. The work should be strictly carried out as per the drawing given by the Architect. Provision of data cable points on table.

3) Mode of Measurement & Payment:

The rate shall be for a unit of sqmt. basis (length x width)

29

PREFUNCTIONAL COUNTERS: Providing & fixing prefunctional service counter under granite platform having 12 mm +9 mm thick MR grade plywood as shutters both side 1 mm laminate finish including hinges, magnet, table chains , complete with bidding patties and all hardwares. All exposed and internal surfaces finished with 1 mm thick laminate of approved shade . All joints are covered with Ghana teac bidding patti finished with laminate. complete including require nos of drawer and shutter all type of fittings , fixtures, hardware approved make etc complete .SS 304 grade conceal handle shall be provide as per approved selection &detailed drawing and instruction of Architect/consultant/ PMC Contractor has to provided all necessary cut outs (race ways.) for Electrical works & no extra payment shall be made for it.

Materials:

- 12 mm + 9 mm thick IS 303 ply shall be used for shutters as per approved make and sample by Architect/Authority.
- Laminate shall be used as per approved make and sample by Architect/Authority.
- Hardware's shall be used as per approved make list and confirming to relevant IS codes and approved by Architect/Authority.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Architect/Authority.

Workmanship:

- Understructure shall be made from 12mm +9 mm thick IS 303 ply with laminate finish at exposed and internal surfaces.
- Work includes required nos of drawer and shutter type with all type fitting, fixtures, hardware as per approved sample by Authority /CONSULTANT
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Architect/Authority.

Measurements:

- The work done shall be measured in running meter for area of work done. The rate shall be for a unit of one Square Meter.

The rate shall be for a unit of sqmt. basis (length x height)

30

ELECTRICAL PANEL CUPBOARD: -ELECTRIC CUPBOARD SHUTTERS ELECTRICAL PANEL CUPBOARD WITH LOWARDS Providing and fixing Electric cup board using 18 mm thick Bison board for inside verticle division, shelves and shutter. Aluminium framing of 50x25x1.20mm thick with 6 mm thick Bison board on both side for outer partition with 1.0 mm thick laminate on all exposed surface and polishing/ synthetic enamel paint on all internal surface. Shutter will have approved make lock, handle, hinges, ball catches & S.S Perforated jali etc.complete as directed. Depth of cup board will be around 1'-3". Height of shutter will be maximum 7'-0". Only Front elevation shall be measured for payment purpose.

Materials:

18 mm bioson panel. Provision of Lowards panel in shutter, Finish With Paint/Laminate as suggested.

- Hardware's shall be used as per approved make list and confirming to relevant IS codes and approved by Architect/Authority.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Architect/Authority.

Workmanship:

- Work includes required nos of shutters with all type fitting, fixtures, hardware as per approved sample by Architect/ Consultant.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Architect/Authority.

Measurements:

- The work done shall be measured in Sq meter for area of work done. The rate shall be for a unit of one Square Meter. The rate shall be for a unit of sqmt. basis (length x height)
-

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LAMINATE FINISH TABLE 1.50X0.86 X0.75 Providing & fixing laminate finish table having given size with height of 750 mm (as per attached detail drawing) Table having 38 mm Thick .at top made by 18 mm thick sandwich ply . Top is cantilever then its base supports. Base supports made by 18 mm thick sandwich ply. A Table having drawers and a shutter in a pedestal and a key board tray at single end. Drawers & Keyboard tray rest on telescopic channels. drawers having thickness of 24 mm which are made by 18mm + 6 mm ply to create conceal grooves as handle. Drawers & keyboard, sides, Bottom is covered with 18 mm MR grade ply & Back of pedestal are made up of 12 mm thick MR grade Ply Wood. Having 3" high Footrest of 18 mm ply. At Front facade (covered with grooves as per given patterns. All internal and external surfaces covered by 1mm thick laminate. all complete with given nos of key board tray, drawers on telescopic channels, locks, stoppers, SS Screws,MS nails, Auto hinges, Cable Manager etc as per shown in detail drawings & as per instructions of architect/consultant / in charge engineer. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

1.0 Materials:-

- 18 mm MR Grade ply of IS 303.
- 12 mm MR Grade ply of IS 303.
- 6 mm MR Grade ply of IS 303.

Bidding Patti:- Burma border.

1 mm laminates for exposed & internal surfaces as finished material

2.0 Workmanship:-

2.1 The item covers the requirement of frames, plywood, and laminate for table edges.

2.2.1 All members of frames shall be exactly at right angles. The right angles shall be Checked from inside surface of the respective members

Joints: - Frame shall have standard, , cross halved, but joints will not be permitted.

2.3 Plywood with required size shall be fixing to frame with use of synthetic resin adhesive as Well as screws, nails as directed by engineer in charge and as per drawing.

2.4 Laminated All exposed & internal member of plywood should be laminated with 1.0 mm thick laminate of standard make of approved shade & as per relevant **Specification**

3.0 Mode of Measurement & Payment:

3.1 The rate shall be consolidated for all above items. The rate shall include cost of all materials, Fixtures, joineries etc. & labor to complete the work satisfactorily as per instructions & Necessary certificate to be produced to Engineer-in-charge by agency.

3.2 The necessary vouchers bill of purchase of materials shall be produced if demanded by the engineer in charge.

3.3 No Extra payment will be given for any reasons. The rate shall be for a unit per sq mt. basis Of work done for completed Item.

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LAMINATE FINISH CREDENZA UP TO 1.52 MT HT:Providing & fixing Laminate Finish Low ht back credenza having depth of 375 mm , with 18 mm mr grade ply top, based on sandwich vertical supports made by 18 mm Thick. mr grade Ply Wood with all shutters & horizontal single self (made by 18 mm thick MR grade ply) as per given in detail drawings. Backside of low ht storage is covered with 12 mm thick plywood. Shutters made with 18 mm + 6 mm ply with conceal handles. All exposed and internal Joints complete with burma border bidding patti finished with melamine polish. All exposed and internal surfaces covered with 1 mm thick approved shade laminates as instructed by Architect/consultant/Engineer in charge. Complete with all hardware like MS nails, ss-304 screws, magnet, Stoppers, L - hinges, 19 mm multilocks, table chain, conceal handles etc.

Material

- 18 mm MR grade ply of IS 303.
- 6 mm MR grade ply of IS 303.
- Bidding Patti:- Burma border
- 1 mm laminate for exposed & internal surfaces as finished material
- Hardware : ozone, etc

Workmanship: Storage body is made of 18 mm MR grade ply IS-303 with sandwich top finished with 1mm thick laminate finish at all expose surfaces and internal surface . all open edges should be covered with bidding Patti finish with laminate Finish including require nos of drawer and shutter all type of fittings , fixtures, hardware etc complete .SS 304 grade conceal handle shall be provide as per approved selection &detailed drawing and instruction of Authority /consultant/ Rate is inclusive of telescopic channel of suggested make.

Wire management: provision of special flexible component that allows easy and safe passage of wires

The mode of Measurement: The size of the credenza will be measured from length x height for billing Basic rate of Basic rate of laminate is Rs 1500/ sheet.)

The rate shall be for one square meter.

LAMINATE FINISH LOW HT PARTITION:- LOW HT PARTLY GLAZED /FLUSH PARTITION UPTO 1.21 MT HT:

Providing & Fixing partly laminated & partly glazed partition up to 1.21 m ht (thickness of partition is 68 mm) having 12 mm thick MR grade plywood is 303 grade both side of aluminum framing of gauge 16 Aluminum framing size for each support is 50 mm x 25 mm. having grid of 600 mm x 600 mm. Finished with 1 mm thick laminate at all exposed surfaces of approved shade. Make necessary grooves as per shown in drawing. Using of 12 mm thick frosted glass with proper crystal edges. Using of 12 mm thick toughen clear glass with proper crystal edges & with suggested frosted films/color films on glass. Glass starts from 1.00 mt lvl . All joints are covered with Burma border bidding Patti finished with Laminate/polish. Complete with all necessary hardware & adhesives as per details given in drawing and as per instructions of Architect/consultant/Engineer In charge. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it. this includes Rates for both items partly glazed partition/flush partion.

Material:

- 12 mm thick MR grade plywood shall be used for partition work as per approved make and sample by Architect/Authority
- Aluminum section of 16 guage shall be used as per approved make list and confirming to relevant IS codes and approvals.
- 12 mm thk toughen glass
- 1 mm thick Laminate on both side as per approved make list and confirming to relevant IS codes and approved by Architect/Authority
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Architect/Authority.
- **Workmanship:**
 - Work complete as per above specification.
 - All the partition should be fitted to ensure accurate positioning & level of ceiling ,flooring, wall system as per the site / EIC requirements.
 - Work including wherever necessary core cutting ,drilling ,anchoring etc complete.
 - The junction of the partition with masonry & all penetration through the partition has to be treated with acoustic sealant.
 - All joints of laminate & grooves are as per suggested by Architect/EOI.

Mode Of Measurements:

- **The Mode of Measurement: The size of the partition will be measured from flooring up to height. . Contractor has to submit test certificates of glass, & plywood. Measurement consider length x height for billing)**
 - The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.
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OPEN SELVES STORAGE FOR TROPHY /DISPLAY:- Providing & fixing veneer Finish trophy cupboard having depth of 375 mm , **FOR SHUTTER:-** framing of 18 mm Thick. MR grade Ply Wood with all necessary proper adhesive and hardwares, having 12 mm tinted brown glass with crystal edges & frosted effects for shutter fixed in ply framing . All complete with hole ,cut work etc. Pheripheral frame make with 18 mm MR grade ply finished with 1 mm thk laminate of suggested shed .

FOR STORAGE BODY :-

Having pheripheral vertical sandwich supports & horizontal single selves as per given in detail drawings made out of 18 mm Thick. MR grade Ply Wood. Backside of storage is covered with 12 mm thick MR grade plywood. All exposed and internal Joints complete with burma border bidding patti finished with laminate/ polish . All exposed surfaces covered with 4 mm veneer and finished with PU Polish with mat finish and internal surfaces covered with 1 mm thick approved shade laminates as instructed by Architect/consultant/Engineer In charge. Complete with all necessary hardwares like handles, glass to glass locks/Conceal Mortise Locks, with all hardware like MS nails, SS-304 screws, magnet, Stoppers, L - hinges, table chain, etc. as per details given in drawing and as per instructions of Architect/Engineer In charge .

Material:

- 18 mm thick MR grade plywood IS 303 shall be used for storage as per approved make and sample by Authority/Architect.
- 12 mm thick MR grade plywood IS 303 shall be used for storage as per approved make and sample by Authority/SAPC
- 12 mm extra clear toughen glass/tinted brown glass
- 4 mm thk veneer on exposed surfaces of storage as per approved make list and confirming to relevant IS codes and approved by Authority /Consultant
- 1 mm thk laminate internal surfaces.
- Veneer finished with suggested PU polish.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Architect/ Authority .

Workmanship:

- Work complete as per above specification.
- All the selves of storage should be fitted to ensure accurate positioning & line level of supports as per the storage pattern/ EIC requirements.
- Work including wherever necessary core cutting ,drilling ,anchoring etc complete.
- The junction of the partition with masonry & all penetration through the partition has to be treated with acoustic sealant.

Mode Of Measurements:

- The size of the storage will be measured from flooring to false ceiling. Contractor have to submit necessary test reports & certificates of plywood & glass etc. Measurement consider length x height for billing.
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.
- All joints of laminate/vineer & grooves are as per suggested by Architect/Authority.

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LAMINATE FINISH CENTRE CUBICALS :1.30X0.80 WITH CENTRE CLUSTER OF GREEN PLNTATOIN Providing & fixing laminate finish cubical table having given size with height of 750 mm (as per attached detail drawing) having connected green plant stand at centre area Table having 38 mm Thick .at top made by 18 mm thick sandwich ply . Top is cantilever then its base supports. Base supports made by 18 mm thick sandwich ply. A Table having a key board tray at single end. Keyboard tray rest on telescopic channels. s, Bottom is covered with 18 mm MR grade ply & Back of pedestal are made up of 12 mm thick MR grade Ply Wood. Having 3" high Footrest of 18 mm ply. having privacy screen cover with softbord paneling on 12 mm ply as suggested color. All internal and external surfaces covered by 1mm thick laminate. all complete with given nos of key board tray, drawers on telescopic channels, locks,

stoppers, SS Screws, MS nails, Auto hinges, Cable Manager etc as per shown in detail drawings & as per instructions of architect/consultant / in charge engineer. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.

Workmanship:

- Work complete as per above specification.
- All the selves of storage should be fitted to ensure accurate positioning & line level of supports as per the storage pattern/ EIC requirements.
- Work including wherever necessary core cutting ,drilling ,anchoring etc complete.
- Work finish with all centre cluster for green plantation.

Mode Of Measurements:

- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.
 - All joints of laminate/vineer & grooves are as per suggested by Architect/Authority. The rate shall be for a unit of sqmt. basis (length x height)
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36

GYPSUM CEILING The works include supply and installation & fixing of Gypsum Board Ceiling which Incorporates a fully concealed GI fixing grid of ultra channel 18 guage. Complete with all necessary hardware, fittings and accessories. Board joints are not visible and all gaps are filled with gypsum jointing compound like gypsum powder . The job also includes providing access panels, cutting of spot lights, luminaries, speaker, etc. Sheets in size 4' x 8' in thickness ½" (or 3/8") screwed on steel stud system. The steel stud frame consisting of main furring GI channel at every 600 mm and cross channel at every 600 mm . Both main and cross channels are attached though jaw clip. Screws will be corrosion proof either Chromites or Cynated. Screw fixing is done mechanically with drilling machine & suitable attachment. Finally the boards are to be jointed & finished so as to have a flush look which includes filling & finishing with jointing compound, paper tape and two coats of top coats of gyp board, etc completed.

The gaps will be initially filled with joining gypsum plaster compound and then taped by self adhesive covered with proper jointing compound like gypsum powder. Contractor has to provided all necessary cut outs for Electrical works & no extra payment shall be made for it.

Material :

gyp board :

Absorb wool wherever it suggested.

G I Framing – grid of ultra channel 18 guage , screws, soffit clamp, wall angle, wall plug

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The work should be strictly carried out as per the drawing given by the Architect/consultant.

Mode of Measurement & Payment:

A. Item is to be measured for its length and width.

B. The rate shall include cost of all materials, all labors, transportation, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.

C. The item will be measured actually and paid on square meter for any length and Width / breadth.

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GRID CEILING: LIGHT WEIGHT CALCIUM SILICATE CEILING: Providing and fixing eco-friendly light weight calcium silicate false ceiling tiles having Tegular edge & 15 mm Thick edges on the Tile Periphery for Extra Strength The Light weight calcium silicate ceiling tiles shall have , light reflection 85% non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity 0.043° w/m KC. for the best thermal Insulation . The Light weight calcium Silicate tile shall be of approved texture Fine fissured/ Spintone/Cosmos having NRC value of 0.5 & Globe having NRC value of 0.75 NRC or equivalent of size 595 X 595 mm to be laid on true horizontal level suspended inter locking metal grid of hot dipped galvanized steel sections (galvanizing @120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and size of 24X38mm made from 0.30 mm thick (minimum) sheet, 1200mm centre to centre, and cross 'T' of size 24X28mm made out of 0.33mm (Minimum) sheet spaced 1200mm along spaced between main 'T' at 600mm centre to centre to form a grid of 1200X600mm and secondary cross 'T' of length 600mm and size 24x28mm made of 0.30 mm thick (Minimum) sheet to be interlocked at middle of the 1200X600mm panel to form grid of size 600X600mm resting on periphery walls/partitions on a perimeter wall angle pre-coated steel of size (24X24X3000mm made of 0.40mm thick (minimum) sheet with the help of rawl plugs at 450mm centre to centre with 25mm long dry wall screws @ 230mm interval and laying 15mm thick Densified edges light weight calcium silicate ceiling tiles of approved texture (Fine Fissured/Cosmos/Spintone) in the grid including, cutting /making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required, Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25X35X1.6mm fixed to ceiling with 12.5mm dia and 50mm long dash fasteners, 4mm G.I. adjustable rods with galvanized steel level clips of size 85X30X0.8mm, spaced at 1200mm centre to centre long main 'T' bottom exposed with 24mm of all T-sections shall be pre-painted with polyester baked paint, for all heights, as per specifications, drawings and as directed by engineer-in-charge.

Material :

Light Weight Calcium Silicate sheet

G I Framing –

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The work should be strictly carried out as per the drawing given by the Architect/consultant.

Mode of Measurement & Payment:

A. Item is to be measured for its length and width .

B. The rate shall include cost of all materials, all labors, transportation,

Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.

C. The item will be measured actually and paid on square meter for any length and width / breadth.

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STRETCH FABRIC CEILING : Providing & fixing NAKSHATRA CLIPSO ACOUSTIC coverings (ceiling & wall) made out of polyester knitted fabric coated with Polyurethane (PU). The NAKSHATRA CLIPSO ACOUSTIC fabric width of 2m, 3m, 4m & 5.1m with weight of 230-330gm/m², +/- 10% and thickness of 0.4 mm. The appearance of CLIPSO ACOUSTIC fabric should be matt, smooth and uniform with blank color and light Fastness > 8. The tear strength of fabric should be accordance to CH: 5.5daN; TR: 7.5 daN. The fire rating should be accordance to B-S1, do. The fabric should be humidity resistant and free of carcinogenic substances (CMR) or volatile organic Compounds (VOC's). At labeling in accordance with the French decree no. 2011-321, OcKo-Ter standard 100 certified. The fabric should be paintable/printable with approved manufacturer guidelines with 10-year manufacturer guarantee. The installation of NAKSHATRA CLIPSO ACOUSTIC fabric should be dry installation & done at room temperature using CLIPSO PVC, ABS tension profiles P-CC/P-CW/P-C10QS/P-C11QS/P-CCB022/P-B1/PCC1P and

backing with Insulating Felt LA 54 with stated properties (100% synthetic(mineral fiber), weight 350gr/m2, +/- 5%, color white, thickness 50 mm, fire rating confirms to EN1350-1-1 : B-s1, d0, DIN 4102: B1,Thermal rating WLG : 035, Oeko-Tex certified , Acoustic performance : $\alpha_s = 1.04$ NRC - Classification D. The works include providing & fixing of 12 mm thk Ply Board Ceiling which Incorporates a fully concealed Aluminum grid. Complete with all necessary hardware, fittings and accessories. Finish with suggested paint at ply base. frame made with 19 mm thk ply . Stretch fabric fixing with suggested nos of grippers. backside have crete suggested scene in strech fabric The job also includes providing access panels, cutting of spot lights, luminaries, speaker, etc. The steel stud frame consisting of main furring Alum channel at every 600 mm and cross channel at every 600 mm. Both main and cross channels are attached though jaw clip. Screws will be corrosion proof either Chromised or Cynated. Screw fixing is done mechanically with drilling machine & suitable attachment. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it.Rate given only for stretch fabric ceiling not for any base ply support or its framing. Contractor have to quoted rate all inclusive.

Material :

12 mm thk ply board ceiling
 Cclipso acaustic fabric ceiling
 G I Framing –

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The work should be strictly carried out as per the drawing given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for its length and width .
- B. The rate shall include cost of all materials, all labors, transportation, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
- C. The item will be measured actually and paid on square meter for any length and width / breadth.

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CEMENT SHEET CEILING The works include supply installation and fixing of Cement Sheet Ceiling which Incorporates a fully concealed GI fixing grid. Complete with all necessary hardware, fittings, Luster paint , and accessories. The job also includes providing access panels, cutting of spot lights, , etc. . The steel stud frame consisting of main furring GI channel at every 600 mm and cross channel at every 600 mm. Both main and cross channels are attached though jaw clip. Screws will be corrosion proof either Chromised or Cynated. Contractor has to provided all necessary cut outs for Electrical works & no extra payment shall be made for it.

Material :

12 mm thk Cement Sheet :
 Absorb wool wherever it suggested.
 G I Framing – grid of ultra channel 18 guage , screws, soffit clamp, wall angle, wall plug

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The work should be strictly carried out as per the drawing given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for its length and width.
- B. The rate shall include cost of all materials, all labors, transportation,

Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
C. The item will be measured actually and paid on square meter for any length and Width / breadth.

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COMPOSITE LATHER HIGH BACK CHAIR, :- Providing & Supplying pure leather Very High back chair of Overall size- 750W*750D*1135-1380H*410-510SHmm. The seat is made up of hot pressed moulded reconstituted wood of 1.2±0.1cm thickness and back is two part injection moulded plastic. SEAT SUB ASSEMBLY SIZE: 49.0cm (W) X 49.5cm (D) *BACK SUB ASSEMBLY SIZE: 46.0 cm (W) X 57.0 cm (H) *HEAD REST SUB ASSEMBLY SIZE: 26.0cm (W) X 12.0 cm (L). The HR Polyurethane foam is moulded with Density = 45 kg/m³ and Hardness load 16 ± 2 kgf as per IS:7888 for 25% compression. The synchronized mechanism is designed with 360° revolving type, Seat/Back Tilt Ratio of 1:3, Side tilt tension adjustment knob can be operated while taking back support for better judgment of comfort. Back tilt with 4 position locking. The pneumatic height adjustment has an adjustment stroke of 10.0 ±0.3cm. The backrest is connected to the mechanism with a drop-lift mechanism which can be adjusted in the range of 7.0±0.5cm for the comfortable back support to suitable individual need. The pedestal is Pressure Die cast polished Aluminium and fitted with 5 nos. twin-wheel castors. The pedestal is 65.0±0.5cm.pitch-centre-dia.(75.0 ±1.0cm. with castors). The twin wheel castors are injection moulded in Black Polypropylene. The seat PU Mould with super soft foam, curved veneer finish outer arms with cushion grip , knee tilt syncromechanisam with any position back lock The rate shall include all materials, hardware and labour etc. complete as per instruction of engineer-in charge and consultant.

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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COMPOSITE LATHER MID BACK CHAIR :- Providing & Supplying composite leather Revolving Visitor chair of Overall size- 960W*665D*960H*480SH.mm . The seat is made up of hot pressed moulded reconstituted wood of 1.2±0.1cm thickness and back is two part injection moulded plastic. SEAT SUB ASSEMBLY SIZE: 49.0cm (W) X 49.5cm (D) *BACK SUB ASSEMBLY SIZE: 46.0 cm (W) X 57.0 cm (H) . The HR Polyurethane foam is moulded with Density = 45 kg/m³ and Hardness load 16 ± 2 kgf as per IS:7888 for 25% compression. The armrests are Pressure die casted in polished Aluminum with PP Arm Tops. The Understructure is welded structure made up of M.S.E.R.W. Elliptical tube. The understructure is powder coated (DFT 40-60 microns). The rate shall include all materials, hardware and labour etc. complete as per instruction of engineer-in charge and consultant. Seat PU mould with super soft foam,curved veneer finish outer arms with cushion grip,.

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for all heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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COMPOSITE LATHER LOWER BACK CHAIR (REVOLVING) Providing & Supplying of visitor Chairs, having single touch adjustable seat , Frame construction should be of nylon & black in color having dimension of 1200mm Ht., 475mm width & 431 mm Depth & Back cushion Ht. should be 535 mm. It should have Nylon base Arms, Armrest is T fixed.having ht. of 260mm, It should have minimum 5 years warranty. Complete as per instructions given by the Architect & Engineer Incharge & as per shown in the View. Samples should be approved by the Architect & Engineer Incharge. Please see the Attached Make List for Apporoved Makes.like wipro,(Model : Smart Fabric :- Plano - Delta)

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for all heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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COMPOSITE LATHER LOWER BACK CHAIR (NON REVOLVING) Providing & Fixing Visitor non revolving Back Chair of Overall size- 550W*580D*840H*450SH mm Cushion Chair :The seat and back are made up of 1.2 ±0.1cm. thick hot pressed plywood measured as per QA method described in OCP-QLTA-P14-18 and upholstered with fabric and moulded Polyurethane foam with PVC lipping all around. The back foam is designed with contoured lumbar support for extra comfort..(LOW BACK) SIZE: 49.5cm. (W) X 45.5cm. (H)*SEATSIZE: 49.5cm.(W)X 43.0cm. (D) The HR polyurethane foam is moulded with density =4S+/-2 kg/m³and hardness load 16 ± 2 kgf as per IS:7888 for 25% compression.The one-piece armrests made of black integral skin polyurethane with SO-70Shore Hardness and reinforced with M.S. insert. The armrests are scratch and weather resistant. The armrests are fitted to the seat with seat armrest connecting bracket made of 0.3 ±0.022cm. thk. HR steel.The understructure is made of 02.S4 ±0;03cm. x 0.2 ±0.016cm.thk., M.S;E.R.W. tube and black powder coated (DFT 40-60 microns).The rate shall include all materials, hardware and labour etc. complete as per instruction of engineer-in charge and consultant.

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly

carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for all heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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FOUR SEATER ROUND SOFA:-Providing & Supplying of composite Leather 4 Seater round Sofa as suggested sized,design & pattern Slab stock and bonded foam at seat with recron padding at seat,Foam Density : 34 kg/ cubic m..Backrest is made of slab stock with recron fillers.Double webbing : Sspring and nylon.Fabric which gives a leather feel.Upholstery is Microfibre with Polyester Laminate.Frame Material is made of kiln dried wood. The rate shall include all materials, hardware and labour etc. complete as per instruction of engineer-in charge and consultant. Frame Material :-Wood, in U Shape

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for all heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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THREE SEATER COMPOSITE LATHER SOFA:- Providing & Supplying of composite Leather 3 Seater Sofa of Overall size- 2072W*912D*830Hmm .Slab stock and bonded foam at seat with recron padding at seat,Foam Density : 34 kg/ cubic m..Backrest is made of slab stock with recron fillers.Double webbing : Sspring and nylon.Fabric which gives a leather feel.Upholstery is Microfibre with Polyester Laminate.Frame Material is made of kiln dried wood. The rate shall include all materials, hardware and labour etc. complete as per instruction of engineer-in charge and consultant.

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
- B. The rate shall include cost of all materials, all labors, transportation for all heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.

C. The item will be measured actually and paid per each on number basis.

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TWO SEATER COMPOSITE LATHER SOFA:-Providing & Supplying of composite Leather 2 Seater Sofa of Overall size- 1572W*912D*830Hmm .Slab stock and bonded foam at seat with recron padding at seat,Foam Density : 34 kg/ cubic m..Backrest is made of slab stock with recron fillers.Double webbing : Sspring and nylon.Fabric which gives a leather feel.Upholstery is Microfibre with Polyester Laminate.Frame Material is made of kiln dried wood. The rate shall include all materials, hardware and labour etc. complete as per instruction of engineer-in charge and consultant. Approved Make: Godrej / Herman Miller / Haworth / Knoll.

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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SINGLE SEATER SOFA Providing & Supplying of composite Leather single Seater Sofa of Overall size- 29 H x 31 W x 33 D .Slab stock and bonded foam at seat with recron padding at seat,Foam Density : 34 kg/ cubic m..Backrest is made of slab stock with recron fillers.Double webbing : Sspring and nylon.Fabric which gives a leather feel.Upholstery is Microfibre with Polyester Laminate.Frame Material is made of kiln dried wood. The rate shall include all materials, hardware and labour etc. complete as per instruction of engineer-in charge and consultant. Approved Make: Godrej / Herman Miller / Haworth / Knoll.

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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CENTRE TIPOI Supplying & Providing Glass Top PU Finish Centre Tipoi size of 2.5ft x 1.4ft x 1ft in rectangular shape as suggested and selected by architect/EIC. Basic rate of item is 15000 rs per piece

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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CORNER TIPOI Supplying & Providing Glass Top PU Finish corner Tipoi size of 3'x3' x1 ft insquare shape as suggested and selected by architect/EIC. Basic rate of item is 15000 rs per piece 22000.00

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
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Providing & placing planter Pot made form SS suggested sizes & shapes & shade approved by architect with artificial plant as per selection by architect with artificial plant. Rate shall inclusive of sample, all materials, loading, unloading, all taxes, transportation, placing at all floors and for all leads, all accessories as described in item description. As approval of Architect / EIC.

- A) Square 300x300x300
- B) Square 600 x 300x 300 basic rate of item is 2000.00 rs.

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for all heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
-

51

SS Dustbin:- Providing Swing Dustbins made up of S.S. 304. The Lid of this Dustbin is attached from center & can be swing from both sides. It shall be easy to use, reliable & light in weight. Samples should be approved by the Architect & Engineer Incharge. Please see the Attached Make List for Approved Makes. Basic rate of item is 500 rs Diameter: 18 cm (7 ") Height: 27 cm (10 ¾ "), Volume: 5 l (1 gallon), Depth, including pedal/hinge: 23 cm (9 ") Product as selected by architect /EIC

Workmanship:

The work should be done with precision to the satisfaction of the engineer-in-charge. No damage should be done to existing furniture / wall surface. The product should be strictly carried out as per the selection given by the Architect/consultant.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos.
 - B. The rate shall include cost of all materials, all labors, transportation for all heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
 - C. The item will be measured actually and paid per each on number basis.
-

52

COMPACTOR:-SUPPLY AND INSTALLATION OF REGULAR COMPACTOR & MONO RAIL COMPACTOR SYSTEM AS PER DETAILED TECHNICAL SPECIFICATIONS ATTACHED TO THE TENDER. (MANUFACTURER HAVE TO INSTALL ONE DEMONSTRATION SAMPLE SYSTEM FOR BOTH TYPE OF COMPACTOR SYSTEM AS PER INSTRUCTION FROM THE COMPETANT AUTHORITY FOR THE SIZE OF THE SYSTEM FOR TECHNICAL EVALUATION)

THE COMPACTOR WILL HAVE TO BE MANUFACTURED CONSIDERING FOLLOWING BASIC PARAMETERS IN DESIGNING BESIDES THE DETAILED TECHNICAL SPECIFICATIONS TO BE FOLLOWED AS PER ATTACHEMENT:

BIDDER / MANUFACTURER WILL HAVE TO MAXIMISE THE LENGTH OF THE COMPACTOR SYSTEM AS PER THE RESPECTIVE ROOMS AND TAKE THE APPROVAL OF THE COMPETANT AUTHORITY BEFORE STARTING OF MANUFACTURING. BIDDER WILL HAVE TO INSPECT ALL THE ROOMS ON ALL FLOORS MEANT FOR COMPACTOR SYSTEM TO STUDY FOR MAXIMISING THE STORAGE CAPACITY BEFORE SUBMITTING THE COMMERCIAL OFFER .

EACH COMPACTOR SYSTEM IN THE RESPECTIVE ROOMS MUST BE DESIGNED KEEPING ALL THE REQUIRED MOVEMENT SPACE IN FRONT OF SYSTEM FOR COMFORTNESS AND EASE OF OPERATING SYSTEM .

BASE FRAMES : IN WELDED CONSTRUCTION

BOLT LESS SHELF : FRONT PROFILE OF SHELF 35 MM WITH 12 BEND TECHNOLOGY AND CORNERS WELDED FROM INSIDE

RAILS : MINIMUM 30 MM SOLID (NOT HOLLOW) SQUARE OR ROUND

POWER WHEEL :STAR TYPE HAVING 3 INSERTABLE ARMS HAVING UNIT LOCK IN

THE CENTRAL HUB OF THE POWER WHEEL(NO USE OF SLOTTED ANGLE) Approved Make : GODREJ / KOMPRESS / SCHAEFER

Mode of Measurement & Payment:

- A. Item is to be measured for each nos as per given design,.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
-

53

FREEZE 190 LTR :- Supplying, Providing & Installing 190 ltr freeze at suggested place and as suggested company.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos as per given design/company,.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
-

54

TELEVISION :- Supplying & Installing Television of Full HD LED Television Display Size 66 Inch , ,Screen Type Full HD,LED TV, having additional features of , Sound Output: 8W+8W, Speakers 2 Full Range Sound Technology Dolby Digital, Dolby Digital Plus, Dolby Pulse Additional Sound Mode(Standard, Cinema, Sports, Music, Game, Compressed Audio), Sound Enhancer, S-Master, S-Force Front Surround 3D, Simulated Stereo, Stereo System(NICAM/A2)Internet Video , Facebook and Twitter, Skype Ready ,Deep Color, Intelligent MPEG Noise Reduction, Advanced Contrast Enhancer (ACE), 24P True Cinema, PhotoTV HD,

Mode of Measurement & Payment:

- A. Item is to be measured for each nos as per given design/company,.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
-

55

MEGAZINE RACK CIRCULAR BOOK RACK-(1200MM-DIA revolving mechanism) :Providing and fixing Book rack as pe ref image and instruction of architect

Base: made from solid teak wood with revolving mechanisam and specialised approved hardware as per selection of Architect/Client.

Providing and fixing/placing custom made furniture as per ref.image.The work shall be done as per the approved shop drawing , specifications, mock up sample approved and as directed by the Architect and Engineer-in-charge. The rate shall be for complete item inclusive of all material, labour, wastages, necessary tools & tackles,approved make for all floors, all heights, all levels and all places within

campus. Contractor shall do all the needful and shall fulfill Architect's design intent. No additional claims will be entertained for this. The unit shall be manufactured in parts and these parts shall be assembled at site.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos as per given design/company,.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
-

56

DOORMATE Providing Door Mat of Size 400mm x 600mm, made up of Cotton Material, having weight between 400 to 600 GSM. It should well stiched & should be perfect finish and should be defect free & sholud be in suggested Color. Samples should be approved by the Architect & Engineer Incharge. Please see the Attached Make List for Apporoved Makes. Basic rate of item is 400 rs.

Mode of Measurement & Payment:

- A. Item is to be measured for each nos as per given design/company,.
 - B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.
-

57

SS 304 MAT FINISH DIRECTION SIGN Providing & Fixing signage on 1 mm SS 304 mat finish 0.8mm- 1 mm with 5 mm black acrylic direct pasting with silicon tape on any surface expect un finished wall (18"x4"=72 sq inch for each) (as per the approved size & shade) including fixing by using necessary hardwares (Fixing/bonding on wall /ply wherever it requires with its proper silicon pasting /studs ,screws,nails etc). completely with printing in suggested colors for each cabin/Utilities area above each door/wood surfaces/wall surfaces Before making the letters the font & size will be got approved from authority .

Mode of Measurement & Payment:

- A. Item is to be measured for each nos as per given design/company,.
- B. The rate shall include cost of all materials, all labors, transportation for al heights, Installation/fixing as per instructions of engineer-in charge. No Extra payment will be Given for any reasons.

58

10MM+3MM ACRYLIC AS PER LOGO COLOR:- Fixing with bolt or silicon tape as per the background and suggested logo in glossy finish size .cost including all laser cutting.

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59

5 MM ACRYLIC BOX HANGING BOX:- provide all with vinyal and hanging SS wire studs/ss chain/ms chain approx size 24"x6".

60 **ALUMINIUM EMBOSS LETTERS:-** Providing and fixing Aluminium emboss letter aluminium channl letters, front side acrylic,side wall pu color, inside high glow led modules,power supply for led, all installation as suggested by architect/incharge. (approx size 12'x4')

61 **AC TRAP DOOR** Providing & fixing cassette AC trap door boxes to fix in false ceiling.with using 18 mm mr grade ply .box size is 600 mm x 600mm x 1200 mm (= - 10% variation in size)as per approved samples of ceiling panels. panels comprise of a powder- coated beaded steel frame with door. Each panel features a push –latch closing mechanism with door retaining safety cable & hook. Complete with hangers and all necessary hardware. Exposed surfaces finished with 1 mm thick laminate/paint of approved shade. Complete with all necessary hardware & adhesives as per details given in drawing and as per instructions of Architect/consultant/Engineer In charge. Contractor has to provided all necessary cut outs (race ways.) for Electrical works & no extra payment shall be made for it.

Material;

All type of material shall be used as per approved make list and confirming to IS Codes and approved by Authority / CONSULTANT
Trap door shall be used as per approved make list and approved by Consultant / Authority

Workmanship;

Work complete as per above specification.
Work complete including all type of tools, tackles, scaffolding etc complete at any level and height
The whole work is to be completed as per design; sample material & any other Requirement shell be as per instruction of Authority/ CONSULTANT

Mode of Measurement;

The work done shall be measured in any false ceiling per Number of unit , no extra payment will be considered for this item.

THANK YOU

TECHNICAL SPECIFICATIONS FOR ELECTRICAL WORK

This specification are for the work to be executed items to be supplied and materials to be used in the works as shown and deafened on the drawings and described here in all under the supervision and to the satisfaction of the Architect / Authority.

The workmanship is to be the best available and of a high standard. Use must be made of specialist tradesmen in all aspects of the works, and allowance must be made in the rates for doing so.

The materials and items to be provided by the contractor shall be the best of their respective kinds, approved by the architect in accordance with any samples which may be submitted for approval and generally in accordance with the specifications. Where materials or products are specified in this specification and or / bill of quantities by the name of

the manufacture or the brand trade name or catalogue reference the contractor will be required to obtained the approval of the architect / AUTHORITY before using a material or product other than the specified. The contractor shall produce all invoices, vouchers or receipted accounts for any materials if called upon to do so by the Architect.

Sample of all material are to be submitted to the architect for his approval before the contractor orders or delivers in bulk to the site. Also, the contractor will be required to submit specimen finishers of colors, fabrics etc, for the approval of the architect before proceeding with the works. Should it be necessary to prepare shop drawings, then four copies of such drawings shall be submitted for the approval of the architect who will retain two copies all at the contractor's expenses.

Wirings Rule:

The installation generally shall be carried out in conformity with relevant Indian standard Specification of and code of practices prevalent, Indian Electricity Rules, 1956 and Indian Electricity Act. 1910 as amended from time to time.

2. Definition:

The definition of terms shall be in accordance with Indian standard code of Practice for Electrical wiring installation IS-732-1982 except for the definition of point in case of internal Electrical Installation. For definition of point wiring and measurement of Electrical works IS-5908-1970 shall be referred to.

3. Voltage and Frequency of supply:

All current consuming devices shall be suitable for frequency of 50C/s and systems of voltage manual for unless otherwise specified.

4. Layout of wiring and its description:

(i) The wiring shall be carried out as per schedule "Power" wiring must be in screwed conduit and shall be kept separate and distinct from lighting wiring. All wiring must be done on the distribution system with main and branch distribution boards at convenient centers and without isolated fuses. All conductors shall be run as far as possible along the walls and ceiling as to be easily accessible and capable of being thoroughly inspected.

5. Conductors:

All conductors unless otherwise specified shall not be less than 1.5 sq. mm. for point wiring and 2.5 sq. mm for mains conductors for power and lighting circuits shall be adequate size to carry the designed circuit load without exceeding the permissible thermal limits for the installation, and such sizes will be stipulated in specifications and or drawings.

6. Cables:

6.1 All cables shall conform to relevant Indian Standards.

6.2 Conductors of all cables except the flexible cable shall be of alluminium. The smallest aluminum conductor for the final circuit shall have nominal cross sectional area of not less than 1.5 sq. mm. The minimum size of the aluminum conductors for power wiring shall be 4 sq. mm.

6.3.1 Conductors of flexible cables shall be of copper the minimum cross sectional area of such a cables shall be 14.0193 mm. the Flexible cable shall have uniform and adequate insulation.

6.3.2 Unless the flexible cables and conductors are protected by armour or though rubber of PVC Sheath, theses shall not be used in workshops and other places where they are liable to mechanical damage.

6.3.3 Core flexible cables shall be used for connecting single phase Appliances or phase, natural & earth connections.

7. Fall of Potential:

The Cross sectional area of all conductors inside buildings shall be so proportioned to their lengths that the drop in voltage between main fuses and the farthest point or any lamp shall not exceed three percent of the voltage of the consumer's with all the consuming devices in use.

7.1 If the Cable Size is increased to avoid the voltage drop in circuit current rating of the cable shall be more than that for which circuit is designed. In each circuit or sub circuit or sub circuit every cable shall have current higher than the full load current.

8. Ratings of lamps and fans socket outlets: Points and exhaust fans

- 8.1 Incandescent lamps installed in residential and non-residential building shall be rated at 60 watts & 100 watts respectively.
- 8.2 Table fans and ceiling fans shall be rated at 60 watts, exhaust fan shall be rated at 100 watts and 1000 watts respectively for the purpose of load assessment unless actual values of the load are, know or specified.

9. Tests:

9.1 Before the installation is commissioned following tests shall be carried out.

- (1) Insulation Resistance Test.
- (2) Polarity Tests of Switches
- (3) Earth continuity tests
- (4) Earth electrodes Resistance test.

- 9.2.1.1 The insulation Resistance shall be measured between earth and the whole system of conductors or any section there of with all fuses in place and all switches close, and except in earthed concentric wiring all lamps in position or both poles of installation otherwise electrically connected together. A direct current pressure of not less than the twice working pressure provided that it need not exceed. 500 volts for medium voltage circuits where the supply is derived from three wire D.D or a ploy phase A.C. system, the neutral pole of which is connected to earth either direct or through added resistance, the working pressure shall be deemed to be that which is maintained between the phase conductor and the neutral.
- 9.2.1.2 The insulation sentence shall also be measured between all conductors to one pole or phase conductor of the supply and all the conductors connected to the neutral or to the order pole or phase conductors of the supply with all lamps in position and switches in "OFF" position and its value shall be less than specified in sub-clause 9.2. 1.3
- 9.2.1.3 The insulation resistance in Mega-ohms measured as above shall no be less than 50 mega ohms divided by the number if outlet or when PVC insulated cables are used for wiring 12.5 mega ohms divided by number of outlets.
- 9.2.1.4 Where a whole installation is being tested a lower value than that given by the formula subject to a minimum of 1 mega ohm is acceptable.
- 9.2.1.5 A preliminary and similar test may be made before lamps, ect., . are installed and in this event the insulation resistance to earth should be not less than 100 mega ohms divided by the number of outlet or when PVC insulated cables are used for wiring 25 mega ohms divided by number of outlets.
- 9.2.1.6 The term "Outlet" includes every switch except that a switch except that a switch combined with a socket outlet appliance or lighting, fitting is regarded as one outlet.
- 9.2.1.7 Control rheostat heating and electric sign may, if required, be dis-connected from the circuit during the test, but in that event the insulation resistance between the case or frame work, and all live parts of each rheostat, appliance and sign, shall be not less than that specified in the relevant Indian Standard Specification or where there is no such specification shall be not less than half a mega ohm.

9.2 Polarity Test:

- 9.2.2.1 In a two wire installation a test shall be made to verify that all switches in every circuits have been fitted in the same conductor through out & such conductor shall be labeled or marked for connection to the phase conductor or to the non-earthed conductor of the supply is fitted in a conductor which is labeled or marked for connection to one of the phase conductor of the supply.
- 9.2.2.2 In a three wire or a four wire installation a test shall be made to verify that every non-linked single pole switch is fitted in a conductor which is labeled or marked for connection to one of the phase conductor of the supply.
- 9.2.2.3 The installation shall be connected to the supply for testing. The terminals of all switches shall be tested by a test lamp one lead of which is connected to the earth, glowing of test lamp to its full brilliance, when the switch is in on position irrespective of appliance in position or not shall indicate that the switch is connected to the right polarity.

9.2.3 Earth Continuity Test:

The earth continuity conductor including metal conduits and metallic envelops of cables in all cases shall be tested for electric continuity and the electrical resistance of the same along with the earthing lead but excluding any added resistance or earth leakage circuit breaker measured form the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

9.2.3.1 Earth Electrode Resistance Test:

Earth electrode Resistance test may be carried out by Megger Earth Testers containing a direct reading ohmmeter, a

hand driven generator and auxiliary electrodes.

- 9.3 On completion of an electric installation (addition and alteration) a certificate shall be furnished by the contractor countersigned by the certified Supervisor under whose direction supervision the installation was carried out. This certificate shall be in the prescribed form as given in Appendix-B in addition to the test certificate required by Local Electrical Supply Authorities.

10. Joint and looping back:

Unless with the sanction of Ex. Engineer, Electrical Divisions all joints in conductor shall be means of approved mechanical connectors in suitable and approved junction boxes but looping back system shall be preferable. In wiring unless otherwise specified phase and live conduct shall be looped at the switch box where a neutral conductor can be looped from light, fan or socket in non-residential buildings neutral and earth continuity wire shall be brought to each of the switch boards should be of adequate size to accommodate at least one number of 5 Amps, socket outlet and control switch in future.

11. Switches:

Main Switchgears, Switch Board and their location:

- 11.1 All main switches (other than loss of iron clad pattern) carrying current of 10 Amp. and above shall be twisted for back connections and shall be suitably protected.
- 11.2 AH switches and circuit breakers shall be constructed in accordance with the I.S. 4237-1967. General requirement for switchgear and control gear for voltage not exceeding 1000 volts and other relevant I.S. provided also that spring shall be either of phosphor bronze or if steel shall be copper or Nickel plated and that handle shall be so fastened that they do not tend to unscrew or become loose.
- 11.3 All main switches shall be either of metal clad enclosed pattern or any insulated enclosed pattern which shall be fixed at close proximity to the point of entry of supply.
- 11.4 Switch boards shall not be erected above gas, stoves, or within 2.5 mm of any washing unit in the washing rooms of laundries or in the bath rooms, lavatories, toilets or kitchens.
- 11.5 Switch boards, if unavoidably fixed in places likely to be exposed to weather, to drip or to abnormal moisture temperature the outlet casing shall be weather proof and shall be provided with glands or bushing of adopted to receive screwed" conduit according to the manner in which cables are run P/C and double flanged bushes shall be fitted in the holes of the switches for entry and exit of wires.
- 11.6 A Switch board shall be installed so that its bottom is within 1.25 mm above the floor unless the front of the switch board completely enclosed by a door or the switch board is located in a position to which only authorized persons have access.
- 11.7 Switch boards shall be recessed in the wall if so specified in the schedule of work or in the special specification. The front shall be fitted with hinged panel of other suitable material such as bakelite in wood frame with locking arrangement, the outer surface of door being flush with the walls. Ample room shall be provided at the back for connections and at the front between the switchgear mountings and the door.
- 11.8 Equipments which are on the front of a switch board shall be so arranged that inadvertently personal contact with live parts is unlikely during the manipulation of switchgears, changing of fuses or like operations.
- 11.9 No holes other than the holes by means of which the panel is fixed shall be drilled closer than 1.3 from any edge of the panel.
- 11.10 The various live parts, unless they are effectively screened by substantial barriers of non hydroscopic, non-inflammable insulating material, shall be so spaced that space shall not be maintained between such parts and earth.
- 11.11 The arrangement of gear shall be such that they shall be readily accessible and their connections to all instruments and apparatus shall also be traceable.
- 11.12 In every case in which switches and fuses are fitted on the same pile, these fuses shall be so arranged that the fuses are not alive when their respective switches are in the off position.
- 11.13 No fuses other than fuses in instrument circuit shall be fixed on the back of or behind a switch board panel or frame.
- 11.14 All the metal switchgears and switch boards shall be painted, prior to erection with one coat of antirust primer, After erection they shall be painted with two coats of approved enamel or aluminium paint as required on all sides wherever accessible.
- 11.15 All switch boards connected to medium voltage and above shall be provided with "Danger Notice Plate" conforming

to relevant Indian Standards.

12. Control at Point of Commencement of Supply:

- 12.1 There shall be linked main switchgear with fuse on each live conductor of the supply mains at the point of entry. The wiring through out the installation shall be such that there is no break in the natural shall also be distinctly marked. In this connections Rule 32(2) of the Indian Electricity Rules, 1966 (See Appendix-A_ shall also be referred.
- 12.2 The main switchgear shall be situated as near as practicable to be termination of services line and shall be easily accessible without the use of any external aid.
- 12.3 On the main switchgear, where the conductor of a two wire system or any earthier neutral conductor of a multi wise system or a conductor which is to be connected thereto, an indication of a permanent nature shall be provided to identify earthier neutral conductor. In this connection Rule 32(1) of Indian Electricity Rules, 1956 (see appendix 'A') shall be referred.

13.0 Switch Board & Distribution Boards:

I Metal clad switch gear shall preferably be mounted on any of the following types of Board.

- 13.4 In large size medium voltage installations, before proceeding with the actual construction of the boards proper drawing showing the detailed dimensions and design including the disposition of the mounting a which shall be symmetrically and neatly arranged for arriving at the overran dimensions shall be prepare and approved by the engineer-in-charge.

13.5 Recessing of Boards:

Where so specified the switch boards shall be recessed in the wall. The front shall be fitted with a hinged panel of teak wood or other suitable materials, such as bakelite, or with unbreakable glass doors in teak wood frame with locking arrangement, the other surface off the doors being flush with the walls, ample room shall be provided at the back for connection and at the front between the switchgear mountings.

13.6 Arrangement of Apparatus:

- a) Equipment which is on the front of a switch board shall be so arranged that inadvertently personal contract with live parts is unlikely during the manipulation of switches, changing of fuses or like operation.
- b) No apparatus shall project beyond any edge of panel. No fuse body shall be mounted within 2.5 cm of any edge of the panel and no hole other than holes by means of which the panel is fixed shall be drilled closer than 1.3 cms from any edge of the panel.
- c) The various live parts unless they are effectively screened by substantial barriers of non-hydroscopic, non inflammable insulating material, shall be so spaced that an arc cannot maintain between such parts and earth.
- d) The arrangement of the gear shall be such that they shall be readily accessible and their connections to all instruments and apparatus shall be so spaced that an arc cannot maintain between such parts and earth.
- e) In every case in which switches and fuses are fitted on the same pole, these fuses shall be so arranged that the fuses are not alive when their respective switches are in the 'OFF' position.
- f) No fuses other than fuses instrument circuit shall be fixed on the back of or behind a switchboard panel or flame.

13.7 Marking of Apparatus:

- a) Where a board is connected to voltage higher than 250 volts, all the apparatus mounted on it shall be marked in the following colours to which the apparatus or its different terminal may have been connected.

Alternating Current	Direct Current
Three-phase-red	Three wire system-2 otherwise
Yellow & blue	Positive red & negative blue
Natural-black	Natural-black

Where fuse-wire three phase wiring is done, the neutral shall be in one colour and the other three wires in another colour

- b) Where a board has more than one switch shall be marked to indicate which section of the installation it controls)
- c) All markings required under the rule shall be clear permanent.

13.8 Main & Branch Distribution Board:

- 13.8.1 Main and branch distribution boards shall be any type mentioned in 13.1, 13.8.1. Main and branch distribution boards shall be of any type mentioned in 13.1
- 13.8.2 Main distribution boards shall be provided with a switch or air circuit breaker on each pole of each circuit, a fuse on the phase or live conductor and a link on the neutral or earthed conductor of each circuit. The switches shall always be linked.
- 13.8.3 Branch Distribution Board:
- 13.8.3.1 Branch distribution boards shall be provided with a fuse of a miniature circuit breaker of both the (adequate rating-setting chosen on the live conductor of each circuit and the earthed neutral conductor shall be connected to a common line and be capable of being disconnected individually for testing purposes. At least one spare circuit of the same capacity shall be provided on each branch distribution board.
- 13.8.3.3 In industrial and other similar installations requiring the use of group control of switching operation, circuits, for (socket outlets may be kept separate from fans and lights. Normally fans and lights may be wired on a common circuit, however, if need is let separate circuits may be provided for the two. The road on any low voltage sub circuit shall not (exceed 3000 Watts.) In case of new installation, all circuits and sub-circuits shall be designed by making provision of 20 (percent increase in load due to any future modification. Power sub-circuits shall be designed according to the load but in no case shall there be more than four outlets in each sub-circuit
- 13.9 Installation of Distribution Boards:
- 13.9.1 The distribution fuse-boards shall be located as near as possible to the centre of the load they are intended to control.
- 13.9.2 These shall be fixed on suitable stanchion or wall and shall be accessible for replacement of fuses.
- 13.9.3 These shall be of either metal-clad type or damp situations, they shall be of the weather proof type and if instated where exposed to explosive dust, vapour or gas, they shall be of lame proof type
- 13.9.4 Where two or more distribution fuse boards feed low voltage these distribution boards shall be
- (1) Fixed not less than 2 mm apart or
 - (2) Arranged so that it is not possible to open two at a time, namely they are interlocked and the metal case is marked Danger 415 volts or (3) installed in a room of enclosure accessible to only authorized person.
- 13.9.5 All distribution boards shall be marked lighting, power as the case may be and also marked with the voltage and number of phases of the supply each shall be provided with a circuits list giving details of each circuit which it controls and the current rating of the circuit and size of fuse element.
- 13.9.6 Triple pole distribution boards shall not be generally used for final circuit distribution unless specification approval of Engineer-in-charge is obtained in special cases where use of Triple Pole distribution boards are inevitable they shall be of H.R.C. fuse type only.
- 13.10 Wiring and Distribution Board:
- 13.10.1 In wiring a branch board, total load of the consuming devices shall be divided as far as possible, evenly between the numbers of ways of the boards leaving the spare circuit for future extension.
- 13.10.2 All connections between pieces of apparatus or between apparatus and terminal son a board shall be neatly arranged in a definite sequence following the arrangement of the apparatus mounted thereon, avoiding unnecessary crossing.
- 13.10.3 Cables shall be connected to a terminal only by soldered or welded or crimped lugs using suitable sleeve, lugs or ferrules unless the terminal is such a form that it is possible to securely clamp them without the cutting away of cable strands.
- 13.10.4 All bare conductors shall be rigidly fixed in such a manner that a clearance of at least 2.5 cms is maintained between conductor of opposite polarity or phase and between the conductors any material other than insulating material.
- 13.10.5 If required a pilot lamp shall be fixed and connected through on independent single-pole switch and fuse to the bus-bars of the board.
- 13.10.6 In a hinged type board, the incoming and outgoing cables shall be fixed at one or more points according to the number of cables on the back of the board leaving suitable space in between cables and shall also, if possible be fixed at the corresponding points on the switch board panel. The cables between these points shall be arranged to form a "U" or "S" shaped loop which shall be of such length as to allow the switchboard pannel to swing through an angle of not less then 90

14.0 Capacity of Circuits:

- 14.1 Lights and fans may be issued on a common circuits and such a circuit shall not have more than a total of ten points of

lights, fan and socket outlets or a load of 800 watts whichever is less. The power circuits shall be designed with a maximum of two outlets per circuits generally when load is not known or specified. In non-residential buildings at important District centers however one outlet per circuit may be preferred. The circuit shall be designed based on the loading of the circuit where not specified the load shall be taken as 1 KW per outlet, where the load is more than 1 KW it should be controlled by a isolator switch or miniature circuit breeder.

15.0 Passing through walls and floors:

15.1 Where conductors pass through walls one of the following methods shall be employed. Care shall be taken to see that wires pass very freely through protective pipe of box and that the wires pass through in a straight line without any twist of cross in wires, on other ends of such holes.

- (a) A teak wood box extending through the whole thickness of the wall shall be buried in the wall and casings or conductors shall be carried so as to allow 1.3 cms air space on three sides, of the casing conductor.
- (b) The conductor shall be caned either in a rigid steel conduit conforming to *IS : 1653-1964 specification for Rigid Steel conduits of Electrical wiring (Revised) or a rigid non - metallic conduit conforming to *IS : 2609-1963 specification of Rigid Non-Metallic conduits for Electrical Installations, or in a porcelain tube of such size which permits easy drawing in. The end of conduit shall be neatly bushed with porcelain, wood or other approved material.
- (c) Insulated conductors while passing through floors shall be protected form mechanical injury by means of rigid steel conduit (see *IS 1653-1964) to a height not less than 1.5 mm above the floors and flush with the ceiling below. This steel conduit shall be earthed and securely bushed.

15.2 Where a was tube passed outside a building so as to be exposed to weather the outer end shall be belt mounted and turned downwards and portly bushed on the open end.

16.0 Fixing to Walls and Ceilings:

Plugs for ordinary walls or ceilings shall be of while seasoned teak or other approved hardwood not less than 5 cm long 2.5 cm. square on his inner end and 2 cm. square on the outer end. They shall be cemented into walls to within 7.5 mm of the surface, the remaining being finished according to the nature of the surface with plaster of lime punning.

16.1 Where owing to irregular crossing or other reasons the plugging of the walls or ceiling with wood plugs presents difficulties, the weed casing weed pattern, metal conduit or clear (as the case may be) shall be attached to the wall or ceiling in an approved manner in the case of new building wherever possible teak wood plugs shall be fixed in the walls before they are plastered.

16.2 To achieve neatness, plugging of walls or ceiling may be done by an approved type of asbestos metallic or a fiber fixing plug.

17.0 Branch Switches:

Where the supply is derived from a three-wire of four-wire source, and distribution is done on the two wire system all branch switches shall be placed in the outer or live conductor of the circuit and no single-phase switch of use shall be inserted in the middle wire, earth or earthed natural conductor of the circuit. Single pole switches (Other than for multiple control) Carrying not more than 15 amperes any be of tumbler type which shall be 'ON' when the handle known is down.

18.0 Fittings:

Where conductors are required to be threaded through tubes or channels formed in the metal work of fittings these must be free form sharp angles or projecting edges and such size that will enable them to be wired with the conductors used for the final sib-circuits without removing the boarding taping or outer covering as far as possible all tubes and channels should be of sufficient size of permit 'Looping bank' of wires cables and flexible cords other than those designed for high temperature shall not be used for wiring fittings except for portable fit limits. All fittings must have not less than a half inch male nipple Fittings and lamp holders for gas filled lamps shall be adequately ventilated.

18.1 Where light fitting is supported by one or more flexible cords the maximum weight to which the twin flexible cords may be subjected shall be as follows.

Nominal cross	No. & Dia in	Max. Permissible
---------------	--------------	------------------

Sectional Area cord mm ²	mm of wires.	weight
0.5	16/0.2	1.7
0.75	24/0.2	2.6
1.0	32/0.2	3.5
2.5	48/0.2	5.3
3.5	80/0.2	8.8
4	128/0.2	14.0

18.2 No inflammable shade shall form a part of light fitting unless such shade is well protected against all risks or fire. Celluloid shade or light fitting shall not be used under any circumstances.

18.3 Fitting of wire:

The use of fitting wire shall be restricted to the internal wiring and the lighting fittings. Where fitting wire is used for wiring, for the sub-circuit loads shall be terminated in a ceiling zone or connector from which they shall be carried into the fittings.

19.0 **Lamp Holders:**

Lamp holders for use on brackets and the like shall be in accordance with *IS: 1258-1967 specification for Boyonet lamp holders and all those for use flexible pendants shall be provided with cord grips. All lamp holders shall be provided with shade carriers. Where centre contact Edison screw lamp holders are used, the outer or screw contacts shall be connected to the middle wire, the natural and the earthed conductor of the circuit.

20.0 **Outdoor Lamps:**

External and road lamps shall have weather proof fittings of approved design so as to effectively prevent the admission of moisture. An insulating distance piece of moisture proof materials shall be inserted in the fittings. Flexible cord and cord grip lamp holders shall not be used where exposed to whether in veranda's and similar exposed situations where pendants are used, they shall be of fixed rod type

21.0 **Lamps:**

All incandescent lamps, unless otherwise required and suitably protected, shall be hung at a height of not less than 2.5 m above the floor level. They shall be in accordance with IS: 418: 1957 specifications for Tungsten Filament General Service electric lamps

22.0 **Fans, Regulators and Clamps**

22.1 Ceiling fans:

Ceiling fans including their suspension shall conform to *IS 374-1960 specification for electric ceiling fans and regulators (Revised) & to the following requirements

(a) All ceiling fans shall be wired to ceiling roses or to special connector boxes to which fans rod wires shall be connected and suspended from hooks or shackles with insulators between hooks and suspension rods. There shall be no joint in the suspension rod, but if joints be avoidable then such joints shall be screwed to special couplers of 5 cm minimum length and both ends of pipes shall touch together within couplers and shall in addition be secured by means of split pins alternatively the two pipes may be welded.

(b) Fans clamps shall be of suitable design according to the nature of construction of ceiling on which these clamps are fitted in all cases fan clamps shall be fabricated from tested new metal of suitable sizes and they shall be as close fitting as possible Fan clamps for wood beams shall be of suitable flat iron fixed on two sides of the beam and according to the size and section of the beam one or two mild steel bolts passing through the beam shall hold both flat irons together Fan clamps for steel join shall be fabricated from tested flat iron to fit in rigidly at the bottom flange of the beam. Care shall be taken during form tested flat iron to fit in rigidly at the bottom flange of the beam. Care shall be taken during form tested flat iron to fit in rigidly to the bottom flange of the beam Care shall be taken during fabrication that the metal does not crack while hammering to shape. Other fan clamps shall be made to suit the position, but in all cases care shall be taken to see that they are rigid and safe.

Note: All fan clamps shall be so fabricated that fans revolve steadily.

(c) Canopies on top and bottom of suspension rod shall effectively hide suspensions and connections to fan motors, respectively.

(d) The lead-in wire shall be of nominal cross-sectional area not less than 1.0 mm² with copper and 1.5 mm² aluminium and shall be protected from abrasion.

(e) Unless otherwise specified the clear distance between the ceiling fan and the floor shall be less than 2.75 m

22.2. Exhaust Fans:

For fixing of an exhaust fan a circular hole shall be provided in wall to suit the size of the fan which shall be fixed by the means of rag-bolts embedded in the wall the hole shall be neatly plastered with cement and brought to the original finish of the wall. The exhaust fan shall be connected to exhaust fan point which be wired as neat to the hole as possible by means of a flexible cord, care being taken that the blades in the proper direction.

23.0 Attachment of fittings and Accessories:

23.1.1 In other than conduit wiring all ceiling crosses, brackets, pendants and accessories attached to watts or ceiling shall be mounted on substantial teak wood block twice Varnished after all fixing holes are made in them. Blocks shall be not less than 4 cms deep. Brass screws only shall be used for attaching finings and accessories to their base blocks.

24.0 Interchangeability:

Similar part of all switches, lamp holder, distribution, fuse board, ceiling rouses, brackets, pendants, fans and all other fittings of same type shall be interchangeable in each installation.

25.0 Conduit Wiring System:

25.1.1 Type and size of conduit - All conduit pipes shall be conforming to *IS: 1653-1964, furnished with galvanised or stove enameled surface. All conduit accessories shall be of threaded type and under no circumstances pin grip type or clamp type accessories be used. No steel conduit less than 16 mm in diameter shall be used. The number of insulated conductors that can be drawn into rigid steel conduit are given in Table II.

25.1.2 Bunching of cables - Unless otherwise specified, insulated conductors of AC supply and DG supply shall be bunched in separate conduits.

25.1.3 Conduit-Joints-Conduit pipes shall be joined by means of screwed couplers and screwed accessories only (*IS: 2667-1964)

Specification for Fittings for Rigid Steel Conduits for Electrical Wiring: In long distance stance straight runs of conduit inspection type couplers at reasonable intervals shall be provided or running threads with couplers and jam-puts (in the latter case the bare threaded portion shall be treated with anti - corrosive preservative) shall be provided. Thread on conduit pipes in all cases shall be between 11 mm to 27 mm long sufficient to accommodate pipes to full thread portion of couplers or accessories. Cut ends of conduit pipes shall have neither sharp edges nor any or buries left to avoid damage to the insulation of conductors while pulling them through such pipes.

25.1.4 Protection against dampness - in order to minimize condensation or seat in inside the tube, all outlets of conduit system, shall be property drained and ventilated, but in such a manner as to prevent the entry of insects as far as possible

25.1.5 Protection of conduit against rust - The outer surface of the conduit pipes including all bends, unions, tees junction boxes, etc., forming part of the conduit system shall be adequately protected against rust particularly when such system is exposed to weather in all cases no bare threaded portion of conduit pipe shall be allowed unless such bare threaded portion is treated with anti-corrosive preservative or covered with approved plastic compound.

25.1.6 Fixing of Conduit - Conduit popes shall be fixed by heavy gauge saddles, secured to suitable wood plugs or any other approved plug with screws in an approved manner at an interval of not one than one meter but on either side of coppers or bends or similar fittings, saddles shall be fixed at a distance of 30 cm. from the centre of such fittings.

25.1.7 Bends in conduit - All necessary bends in the system including diversion shall be done bending pipes, or by insuring suitable solid or inspection type normal bends, elbows or similar fittings or by fixing cast iron inspection boxes whichever is more suitable. Conduit fitting shall be avoided as far as possible. On conduit system exposed to weather, where necessary, said type fitting shall be used. Radius of such bends in conduit pipes shall be not less than 7.5 cm. No length of conduit shall have more than the equivalent of four quarter bends from outlet, the bends at the outlets not being counted.

25.1.8 Outlets - All outlets for fitting switches etc., shall be boxes, of .suitable metal or any other approved outlet boxes for other surface mounting or flush mounting system.

25.1.9 Conductors - Ail conductors used in conduits wirings shall preferably be stranded. No single core cable nominal Cross - sectional area greater than 130 mm shall be enclosed In a conduit and used for alternating current.

25.1.10 Erection and earthing of conduit - The conduit of each circuit or section shall be completed before conductors are drawn in. The entire system of conduit and permanently" connected to earth conforming the requirements specified under pipe in a workman like manner for a perfect continuity between each wire and conduit. Gas or water pipes shall not be used as earth medium. If conduit pipes are liable to mechanical damage, they shall be adequately protected.

- 25.2 Recessed Conduit wiring system with Rigid Steel conduits - Recessed conduit wiring system comply with all the requirements for surface conduit wiring system specified in 6.5.2.1 to 6.5.2.4.
- 25.2.1 Making of chase - The chase in the wall shall be neatly made and be of ample dimensions to permit the conduit to be fixed in the manner desired. In the case of buildings under construction chases shall be provided in the wall, ceiling etc., at the time of their construction and shall be filled up nearly after erection of conduit and brought to the original finish of the wall.
- 25.2.2 Fixing of conduit in chase - The conduit pipe shall be fixed by means of staples or by means of soft saddles not more than 60 cm apart. Fixing of standard bends or elbows shall be avoided as far as practicable and all curves maintained by bending the conduit pipe itself with a lunge radius which will permit easy drawing in of conductors. All threaded joints of rigid steel conduit shall be treated with some approved preservative compound to secure protection against rust.
- 25.2.3 Inspection boxes - Suitable inspection boxes shall be provided to permit periodical inspection and to facilitate removal of wires, if necessary. These shall be mounted flush with the wall. Suitable ventilating holes shall be provided in the inspection box covers.
- 25.2.4 Type of accessories to be used - AM outlets such as switches and wall sockets, may be either of flush mounting type or surface mounting type.
- (a) Flush mounting type - All flush mounting outlets shall be of cast iron mild steel boxes with a cover of approved insulating material or shall be a box made of a suitable insulating material. The switches and other outlets shall be mounted on such boxes as would be approved. The metal box shall be efficiently earthed with conduit by an approved means of earth attachment.
- (b) Surface mounting type - If surface mounting type outlet box is specified, it shall be of any type through flexible conduits of the same size as the rigid conduit.
- 25.3 Conduit Wiring System with Rigid Non-Metallic Conduits:
Rigid Non-Metallic conduits are used for surface recessed and concealed conduit wiring.
- 25.3.1 Type and size - All non-metallic conduits used shall conform to IS: 2509-1963 and shall be used with the corresponding accessories (See IS: 3419-1965) specification for Fittings for Rigid Non - Metallic Conduits).
- 25.3.2 Bunching of cables - Conductors of AC supply and DC supply shall be bunched in separate conduits. The number of insulated cables that may be drawn into the conduits are given in Table III. In this table space factor does not exceed 40 percent.
- 25.3.3 Conduit joints - shall be joined by means of screwed or plain couplers depending on whether the conduits are screwed or plain. Where there are long runs of straight conduit. Inspection type couplers shall be provided at intervals. For conduit fittings and accessories reference may be made to IS: 3419-1965.
- 25.3.4 Fixing of Conduits - The provision of 25.1.6 shall apply except that the septum between saddles or supports is recommended to be 60 cms for rigid non-metallic conduits.
- 25.3.5 Bends in Conduit - wherever necessary, bends or diversions may be achieved by bending the conduits (See 6.5.3.9) or by employing normal bends, inspection bends, inspection boxes elbows or similar fittings.
- 25.3.6 Conduit fittings shall be avoided, as far as possible on outdoor system.
- 25.3.7 Outlets - All the outlets or fittings, switches, etc. shall be boxes of substantial construction. In order to minimum condensation or sweating inside in side the conduit, all outlets of conduit system shall be properly drained and ventilated, but in such a manner as to prevent the entry of insects, etc. as far as possible.
- 25.3.8 For use with recessed conduit wiring system the provisions of 6.5.2.1 to 6.5.2.4 shall apply.
- 25.3.9 Heat may be used to soften conduit for bending and forming joints in case of plastic conduits. As the material softens when heated fitting of conduit in close proximity to hot surfaces should be avoided. Caution should be exercised in the use of the conduit in locations where the ambient temperature is 50°C or above. Use of such conduits in place where ambient temperature is 60°C or above is prohibited.

PVC INSULATED AND P.V.C. sheathed or T.R.S wiring SYSTEM

26.0 GENERAL

This system of wiring is suitable for low pressure installation and shall not be used in places exposed to sun and rain nor in damp places. Provided they are sheathed in the special approved protective covering and well protected to

withstand dampness.

26.1.0 Attachment to walls and ceiling:

26.1.1 All cables on brick walls, stone or plastered walls and ceiling shall be run on well seasoned perfectly straight and well seasoned, perfectly straight and well varnished on four sides, teak wood or any approved hard wood battens not less than 10 mm thick, width of which shall be such as to suit total width of cables laid on the batten, prior to election, these shall be painted with one coat of varnish or approved paint of colour to match with surrounding. These battens shall be secured to wall and ceilings by flat head wood screws to raws plug or Phil plug at an interval not exceeding 75 cm. Wood plug can be used only with special approval of the Engineer in charge. The flat head wood screws shall be counter sunk within wood batten and smoothed down

26.1.2 Where wiring is to be carried out along the face of the rolled steel joints a wooden batten adequate width shall first be laid on the same and dipped to it as inconspicuously as possible. The wiring should then be fixed to this batten shall be suitably bushed to prevent the abrasion of the cables.

26.1.3 Attachment to false ceiling: In no case, the open wiring shall be run above the false ceiling without the approval of Engineer-in-charge

26.2.0 Link clips: Only aluminium alloy clips/joint clips shall be used. The thickness shall be 0.32 mm (30 SWG) for lengths of 50 mm to 80 mm. The width shall not be less than 8 mm in all these cases. Link clips/joint clips shall be so arranged that one single clip shall not hold more than two core or three single core Tiffs of PVC insulated and PVC sheathed upto 2.5 sq. mm above while a single clip shall hold a single twin core or two single core cables. The clips shall be fixed on varnished wood batten with iron pins and space at interval of 15 cm bet in the case of horizontal and vertical runs.

26.3.0 Bends in wiring: The wiring shall not in circumscribes be bent so as to form an abrupt right angle but must be rounded off at the corners to a radius not less than six times the overall diameter of the cable.

26.4.0 Protection of wiring from Mechanical Damage:

26.4.1 In cases where there are chances of any damage to wiring such wiring shall be drawn complying with all the requirements of conduit wiring system.

26.4.2 Such protective covering shall in all cases be fitted on all down drops within 1.5m from the floor. or from floor level upto the switch board whichever is less.

26.5.0 Passing through floors: All cables taken through floor shall be enclosed in heavy gauge steel conduit extending 1.5m above the floor or upto the switch board whenever is less and flush conduits or pipes shall be neatly bushed with porcelain wood or other approved material. The conduit pipes shall be security earthed.

26.6.0 Passing through walls: When conductors pass through walls, any one of the following methods shall be employed. Care should be taken to see that Wires pass very freely through protective pipe or box and that wires pass through in a straight line without any twist or cross in wires on their ends of such holders.

(a) A box of teak wood or approved hard wood extended through the hole thickness of the wall shall be buried in the wall and casings or conductors and casing or conductors shall be carried so as to allow 1.3 cm air space on the three sides of the casing of the conductor.

(b) The conductors shall be carried in an approved heavy gauge solid drawn or lap weld conduit or in porcelain of such a size that it permits easy drawing in, the end of conduit shall be neatly bushed with porcelain, wood or other approved material.

26.6.1 Where a wall tube passed outside a building so as to be exposed to weather, the outer end shall be mounted and turned downwards and properly bushed or the open end, the conduit shall be neatly arranged so that the cables enter them without bending.

26.7.0 Buried cables: The PVC sheathed cable shall not normally be buried directly in plaster. Where so specified in the special in the specification they may be taken in task wood channeling of ample capacity or conduit pipe bonded in the wall.

26.8.0 Stripping of outer covering: While cutting and stripping of the outer covering of the, care shall be taken that the sharp edge of the cutting instrument does not touch the inner insulation of the conductors. The protective outer covering of the cables shall be stripped off near connecting terminals as far as practicable. Care shall be taken to avoid hammering on link clips with any metal instrument after the cables are laid. Where junction boxes are provided they shall be made moisture proof with a plastic compound.

27.0 PAINTING WORK IN GENERAL:

27.1 Paints: paints, oils varnishes etc. of approved make in original to the satisfaction of the Engineer-in-charge shall only be used.

27.2 Preparation of surface: The surface shall be thoroughly cleaned and dusted before painting is started. The proposed surface shall be inspected by Engineer-in-charge or his authorized agent and shall have received the approval before painting is commenced.

27.3 Application: Paint shall be applied with brush. The paint shall be spread as smooth & even as possible particular care shall be paid to rivets, nuts bolts and cover lapping before drawing cut, it shall be continuously stirred, in the smaller containers with a smooth stick while it is being applied.
Each coat shall be allowed to dry out sufficiently before a subsequent coat is applied

27.4 Scope: painting on old surface in in/door Situations will not include primer coat except where specially motioned in the schedule of work or special specification. However, where rust has formed on iron and steel surfaces the spots will be painted with one anti-rust primer coat.

27.6 Painting of conduit and accessories: After installation surface of conduit pipes, fittings switch and regulator boxes, etc. shall be painted with two coats of approved enamel paint or aluminium paint as required to match the finish of surrounding wall, trusses, etc.

28. Link clip:

The clip for batten wiring shall be of Aluminium conforming to I.S. specification No. 2415-1975.

SPECIFICATIONS

All Specification standard publication etc. specified mean the latest standards, publication etc. pertaining to electrical and should conform to the following wherever applicable.

- 1) Indian Electricity Act 2003 with its amendments.
- 2) Indian Electricity Rules 1956 and its amendments.
- 3) Indian Electricity supply Act 1948.
- 4) Regulation for Electricity Equipment in building by I. E. F. Landon.
- 5) The Factory Act, 1948 and its amendments.
- 6) I.S. 732* 1982 Part -1, II & 1.11 code of practice for Electrical wiring and filings in buildings for low and medium voltages
- 7) I.S. 4064-1976 H.D. Air break switches and fuses for-Voltages not exceeding 1100 volts.
- 8) I.S. 3043 - Earthing code of practice for
- 9) I.S. - 1554 Part-11970 PVC insulated (Heavy duty) Electrical Cables for working voltages upto and unfading 110 volts
- 10) I.S. 694-1964 Part-11 - PVC insulated cable with Alluminium conduits (revised) for voltages upto 110 volts.
- 11) I.S.: 5908 -1970 - Electrical installations in buildings method of measurements of.
- 12) I.S.: 4237 -1967 - General requirement for switchgear and control gear for voltage not exceeding 1000 volts.
- 13) I.S.: 1653 -1964 - rigid steel conduits for electrical wiring (revised)
- 14) I.S.: 2509 -1973 - Rigid steel conduits for electrical installation (First revision)
- 15) I.S.: 1248 -1967 - Bayonet landholders (First revision)
- 16) I.S.: 418 1957 - Tungsten - Filament General service-electric lamps (Third revision)
- 17) I.S.: 374 -1966 - Fans and Regulators, ceiling type, electric (second revision)
- 18) I.S.: 2667 -1964 - Filings for rigid steel conduits for electrical wiring.
- 19) I.S.: 3419-1976 - Fining for rigid non-metallic conduits (First revision)
- 20) National Electric Code, 1986.

SWICHES AND BREAKERS CIRCUIT

(See clause II of Specifications)

- 17) Switches and Circuits Breakers: Switches and circuit breakers (rules 2b. 36 and 37) whether fixed separately or combined with lamps, holders of fittings, must comply with the following requirements:
- (a) Over threading must not take place at the point of contact or elsewhere, when the full current flows continuously.
 - (b) They must be so constructed or arranged that the contacts cannot accidentally close when left open.
 - (c) The basis must be of incombustible, nonconductor and moisture proof material.
 - (d) Circuit breaker as must be so arranged and placed that no combustible material is endangered by their action.
 - (e) Unless placed in an engine room or in a compartment arranged for the purpose, they must have their live parts covered. The covers must be of incombustible material and, must be either non-conducting or of rigid metal and clear of all internal machinery. For more than 6 amperes, at pressures exceeding 125 volts metal covers must be lined with insulating material.
 - (f) In positions where they are liable to injure or come into contact with goods, they must be further protected by an open fronted box or other suitable guard.
 - (g) Handles must be insulated so arranged that the hand cannot touch live metal, or be injured through an adjacent face blowing.
 - (h) Switches having a handle projecting through an opening in the cover, must not be used.

SECTION F- 1A GENERAL REQUIREMENTS

1.1 Scope of works:

The work covered by electrical specification consists of supplying and installing, electrical wiring system complete in strict accordance with this specification and the applicable drawing and subject to the terms and conditions of the contract. / It includes.

- (a) Conduit and wiring system for fans, lighting points, bells, clocks sockets, etc. including fixing of lighting fixtures and fans etc. and miscellaneous points.
- (b) Conduit and wiring system for exhaust fans, power sockets etc.
- (c) Panel boards, distribution boards, switch fuse units.
- (d) Complete power and lighting cable systems.
- (e) Grounding system.
- (f) Conduits system.
- (g) Other miscellaneous electrical work.

1.2 Completeness of Contract;

Any work fittings accessories or apparatus which may not have been specifically mentioned in the specification but which are necessary in the equipment for efficient working of the plant should be deemed to be included in the contract and should be executed and provided by the contractors. All plant and apparatus should be complete in all the details, where such details, are mentioned in the specifications or not.

Three prints and one permanent negative of each of the finally approved drawings incorporating all the modifications proposed by the Department should be submitted. No modifications should be made in a drawing already approved by the Engineer-in-charge without his prior consent.

Approval of the contractor's drawing will not relieve the contractor of any part of his obligation to meet all the requirements of the contract.

1.3 Guarantee:

The performance of all the equipments and the installation should be guaranteed at least a minimum period of one year from the date of taking over the installation by the Department. All equipments must comply with the relevancy

IS-BS specifications.

1.4 Interchangeability:

All corresponding parts of similar plant and equipment should be interchangeable in every way.

1.5 Tools;

All special tools required for dismantling and assembly of the equipment covered by the contract shall be supplied as obligation under the contract.

A list of to be supplied by the Contractor should be submitted along with the tender.

Signature of Contractors

SECTION F-2A

Specifications for Electrical Installation in Buildings

1. GENERAL:

1.1 These specifications relate to the electrical installations in the buildings of P.W.D. Electrical. The specifications cover general requirements to be fulfilled. These general specifications are supplemented by the specifications for the particular buildings separately attached.

1.2 These specifications are governed by the General conditions of the contract attached hereto.

1.3 APPLICABLE RULES AND REGULATIONS:

1.3.1 Installation shall be carried out conformity with regulations for electrical equipments of buildings, published by the Institute of Electrical Engineers London (14th Edition 1966 and as amended upto date) herein after referred to as the I E. E. wiring regulations Where these specifications, or the special specifications for the particular building attached hereto are at variance with the I.E.E. regulation shall also comply with the requirements of the Indian Electricity Act, 1910 as amended upto date rules issued there under and also the regulations for the Electrical Association of India Where not specified otherwise, the installation should generally follow the Indian standard codes of practice and in their absence the relevant British Standard of practices. All the materials shall comply with the relevant Indian Standard of British Standard specifications

1.4 DEFINITIONS:

1.4.1. The definitions of terms in the I.E.E. Regulations shall apply in general.

1.5 DRAWINGS:

1.5.1. The preliminary drawings only indicate the general scheme of requirement. The exact position of all points, control switch boxes, runs of wiring and/or conduits joint boxes, inspection boxes, mains, and sub-distribution boards, mains etc shall be got approved Engineer-in-charge. All circuits shall be clearly numbered in wiring diagrams and building plans. The detailed design of a switch-board, special fixture or any other part of the electric installation as may be called for by the engineer-in-charge shall also be supplied by the Contractor and should be got approved by the Engineer-in-charge. Three sets of completion drawings and wiring diagrams showing the instillations as executed shall be supplied by the contractor along with the completion certificate.

1.6 MATERIALS:

All materials shall be new and of the best quality conforming to the relevant I.S.B.S. specifications. They must be the products of reliable manufacturers of many years or standings. All like parts of materials shall be interchangeable. In case of equipments such as circuit breakers; switch fuses etc. a descriptive and illustrated literature shall accompany the tender. The names of manufacturers' of various materials shall be furnished in proforma in Appendix-1. Samples of materials wherever required should be deposited with the Engineer-in-charge. All materials shall be rust-proof or rendered rust proof by application of suitable paints. The supply of all equipments, switchgears etc. shall be complete with accessories, fittings and mountings as may be required for their proper performance, and as specified in the relevant IS-BS Code of Practice and standards.

1.7 WORKMANSHIP:

17.1. Good workmanship and neat finished appearance are the prerequisites for complying with the clauses. of these specifications. With a view to ensure fine workmanship the Tenderer shall employ licensed wiremen with an experience of not less than 5 years in the type of work they are engaged. The work should be done under supervisions of licensed Electrical Supervisors with good educational qualifications and considerable experience.

1.7.2 Tenderer shall furnish the names of Supervisor and their wiremen who will be engaged in this work, with details of their experience.

1.8 CO-OPERATIVE WITH CIVIL AND OTHER WORKS CONTRACTORS:

1.8.1 The Tenderer after the award of the contract, shall co-operate with the civil and other contractors and shall coordinate his work of the other contractors with the least amount of dislocation and interference to the other works. Tenderer shall go through the drawings carefully and shall furnish the Engineer-in-charge with all the details of openings in the walls etc they may be required for concealing any of the electrical equipments or accessories. Where the contractor fails to furnish such information as may be required for the purpose of concealing the equipments etc. they shall be made at his (Contractor) cost and expense. Any alteration to parts of the building shall be made good at the contractor's expense and brought to the original shape finish and colour.

1.9 TESTING

The electrical contractor shall be completely responsible of the testing and commissioning of those installations covered by these specifications in compliance with the standard procedure, in obtaining permission of the Government Electrical Inspector. Any modification which is demanded by Government Electrical Inspector shall have to be carried out within the scope of the contract. The contractor shall submit four copies of drawings of installations as per regulations for shall be provided by the contractor for carrying out the installation work. All tests shall be carried out in the presence of the Engineer-in-charge or his authorized representative and his approval obtained for the test results.

1.10. COMPLETION CERTIFICATE AND MAINTENANCE GUARANTEE:

1.10.1. After the completion of the installation and contractor should furnish a certificate in the proforma in Appendix-III, at the time of taking over the installation by the Department. The installation shall be guaranteed for period of 24 months from the date of taking over by the Department. During the period of guarantee all defects in material or workmanship shall be rectified or rectified or replaced free of cost to the Department.

1.11 TENDERER'S ABILITY

1.11.1. In order to enable the Department to asses the ability of the Tenderer to execute the work, the Tenderer shall furnish evidence of his experience and capacity to carry out the magnitude and nature.

1.12 RATES:

1.12.1. The rates of items shall include all traces, transport, loading and unloading charge and all such charges that may be required to be incurred for the supply and installation of the materials at site. The rates shall be firm and variations in the market are not entertained Break up figure as required in the schedule of work shall also be furnished, As far as possible indigenous materials only shall be included for supply. Where it is unavoidable, imported items may be included and Tenderer should clearly indicate materials, quantity, rate and amount of these items.

1.13 STORAGE SPACE:

No covered storage space will be provided-by the Department. The contractor has to make his own arrangement. However, the Department may give an open space near the place of execution where the contractor can build his own stores for executing the work.

1.14 DEPARTURE FROM SPECIFICATIONS:

The Tenderer should clearly indicate departure, if any from the specifications with reasons for the same.

1.15 EXTRA ITEMS:

Rates for extra items shall generally be derived from the rates already available in the schedule. Where it is not possible, the rates shall be mutually agreed upon and contractor shall furnish a detailed analysis of the rates claimed by him.

2. TECHNICAL SPECIFICATION:

2.1 Supply System:

The wiring installation shall be suitable for 3 Phase 4 Wire, 400-440 V 50 cycles system of supply Colour code of different phase shall be followed as per standard.

2.2 Wiring for Light and Fans:

2.2.1 Looping system to wiring shall be adopted. No joints shall be made at intermediate runs of cables and where they are unavoidable; such joints shall be through approved mechanical connections.

2.2.2 Point wiring:

Point wiring shall consist to the branch wiring from the board together with the controlling switch or push as far as and including the ceiling rose or any other approved connector or socket, outlets. In case of more than one light being controlled by one switch, the wiring upto the ceiling rose of the first light including the switch shall be considered as a Primary point. Loop wiring from light shall be considered as a ' Secondary' point and rates shall be

quoted separately, including final connections to fixtures and plugs.

2.2.3 Conductors:

No conductor for final sub circuit wiring for light and socket outlets shall across-section less than that of 2.5 sq.m (aluminium)

2.2.4 Loading:

No final sub-circuit radiating from the fuse board of a sub-distribution board and wires with 25 sq. m. (Al) cable shall carry more than 10 lights, fans or socket outlets or a connected load of 800 watts whichever is greater. The following wattages may be assumed for estimating the load on each sub-circuit unless otherwise known or specified.

Incandescent lamps	100 watts
Ceiling fans	60 watts
5-A Socket Outlets (lighting)	100 watts
4. ft. fluorescent tube	50 watts
5. ft. fluorescent tubes	100 watts

In each sub-distribution board at least-one way preferably two ways shall be left spare for future requirement. A wiring diagram giving the exact Utilization of the ways shall be prepared and fixed in the sub-distribution board itself or any other easily accessible place. The ways of sub distribution boards shall be accordingly numbered.

2.2.5 Local Control Switches (General):

Local control switches for circuit carrying net less than 5-5 shall be piano type and shall conform to relevant I.S. Standards. The switch shall be "ON" when the knob is in the down position. All local control switches shall be connected in the phase or live conductor only and in the natural conductor, switches shall be fixed in iron clad box and shall is so placed that the centre of the switch box is 1.3 Mtr. from the finished floor level unless otherwise stated. All switch boxes shall be provided with 1 /8" thick Perspex cover fixed to the switch box with chromium plated counter sunk screws (brass).

2.2.5.A Switches (Two Way):

- (a) Two way swatches shall be piano type single pole, double throw, 250V, suitable for flush mounting and of 5A capacity as per the drawings. All switches shall be recessed in an embedded metal box.
- (b) Each box shall have suitable outlet for fixing conduits directly.
- (c) Each box shall have Perspex cover painted inside with the wall colour, if required.
- (d) Each switch shall have suitable for the position in a stairway wiring.

2.2.5.B Switch Boxes (General): Electrical circuits shall be written suitable on the cover of all switched boxes, as approved by the Engineer-in charge (Elect) whenever different phase are terminated in a switch box bakelite partition shall be provided. Each cash shall be provided with a G.I. Earth stud nut and washers for earth connectors.

2.2.6 Ceiling Rose:

Ceiling rose shall be used on circuits having a normally exceeding 200V. Only one flexible cord shall be attached to a ceiling rose. Only 3-pin 5A socket outlet shall be provided in lighting circuits. All socket outlets be provided with a control switch and they shall be mounted in switch boxes in an approved manner.

2.2.7 Fittings:

These shall be of approved type as specified in the tender schedule. The subscripts leads should terminate in a ceiling rose or conductor in the fitting and internal connection made there from. Wherever these fitting are suspended they shall be done so through the conduits and ball and socket joint. All fittings shall be grounded by a G.I. conductor not less than 16 S.W.G.

2.2.8 Flexible wiring:

Flexible cords of not less than .23/0076 size be shall be used. The weight of suspension road shall be governed by I.E.F. Regulations.

2.2.9. Ceiling Fans:

All ceiling fans shall be wired to ceiling rose and suspended from a hook shackle or clamp and insulated from the same. All joints in the suspension, road shall be screwed and means of split pins. The fan clamps supplied by the Contractor shall be suitable for the ceiling or proof member as the case may be For concrete roofs, fan hooks shall be buried in concrete during concrete during construction in an approved manner and secure bound to the reinforcement.

2.2.10 Conduits and Earthing:

All conduits feeding lighting and circuits shall be provided with earth continuity G.I. conductor as specified for power wiring. All conduits shall be as specified for power wiring.

2.3.1 Point wiring:

Point wiring power shall be as defined under section 2.2.2 and shall include the switches and sockets.

2.3.2. Loading:

All distribution board for power wiring shall be not less than 15 A per way. Loading per way shall not exceed normally 100 watts. The following loads may be assumed if exact figure are not known.

3-Pin 15A Outlets 1.000 Watts

3-Pin 5A Outlets 100 Watts

2.3.3 Wiring for Motors:

2.3.3.1 Final sub-circuits loop in motors shall be connected to separate ways of the Distribution board even if the current in the sub-circuit is less than 15A. No looping is permissible.

2.3.3.2 All wiring shall be carried in H.G. conduit as specified in I.S. specification for gauge for different sizes of conduit. When the motor is resiliently mounted fixable with approved adopters shall be used for the last few feet. Where cables are used sufficient loop shall be left.

2.3.3.3 All switch fuse units controlling circuits feeding motor shall be provided with H.R.C. fuses or as specified:

2.3.3.4 The frame of every motor and its association contra gear shall be earthed by two separate and distinct connections to earth connector shall be capable of earing 3 times the rating of fuse or 1.1/2 time the setting or the circuit breakers but in no case than NO.8 S.W.G. or 7064" or equivalent cross section of copper. Where practicable, the earth connections shall be visible for periodical inspection. Gas or water pipes shall not be used for earth connections.

2.3.3.5 Socket Outlets and Control Switches f A and 15A:

All socket outlets shall be of 3 pin type, the third pin being connected to the earth stud of nearest distribution board by separate earthing wire: The socket shall conform to I.S.: 1293/1938, single pole, piano type. Each socket outlets shall be provided with a control switch of appropriate rating and as specified. The switch and socket shall be mounted inside the iron clad box provided with 1/8" Perspex cover as directed by the Engineer-in-charge or as specified in schedule of quantities. Inside switch box ample space shall be available around switches for connection wires to switches. All socket outlets for power shall be mounted at the skirting level otherwise specified or as directed by the Engineer-in-charge.

The three phase plug receptacles shall have their earth terminals connected by independent earth wires to ring main strip on the building. In buildings where explosion proof fixtures are installed single phase plug receptacles as well as light points shall be connected to ring main ground bus installed in the building by separate earth wires of approved size.

Socket outlet shall have some provision not to receive the matching plug unless the grounding pin is in correct position. The grounding pin of the plug shall make the contact first and break the contact last at the time of inserting or removing the plug respectively.

The grounding terminal shall be connected to the enclosed metal body providing G.I. Stud, nut washers welded to the box.

Each unit shall be suitable for flush mounting as required and indicated in the applicable drawings.

Combination unit socket outlet and switch shall be complete with necessary internal wiring. The switch/socket shall be mounted on M.S. bracket enclosed in a box.

2.4 Conduit Wiring:

2.4.1 Where conduit wiring is adopted type and size of the conduit shall be as indicated in the drawing. The minimum of the conduit shall be 19 mm.

2.4.2 The contractor shall thoroughly study the structural of the buildings and wherever, necessary shall in consultation with Department's representatives at site, make suitable adjustments in the cable routings, earthing arrangements, and location boxes, fitting etc. with a view to avoid interference with any part of the building, structure, equipment or any other work in the building or to effect any improvement in the arrangement.

2.4.3 Protection of conduit against rust:

Conduit shall be given two coats of oxide paint before they are placed in position. All exposed conduit shall be planed

after installation with the colour as approved by the Engineer-in-charge. This does not apply to galvanized conduit.

2.4.3.A. Protection against insects arid damp:

In Order to minimize cocensation or sweating inside the conduit, system shall be properly drained any ventilated in such a manner as to prevent the entry of insects.

2.4.4. Conduit shall first be installed as a complete system without cables and shall be continuous from outlet to outlet from fitting to fitting and mechanically and electrically connected to all boxes and fittings.

2.5. SPECIFICATION FOR POWER CONTROL AND TELEPHONE CABLES:

I. SCOPE:

- i. The specifications cover the supply and medium voltage Power and control cables either in ground or trench depending on the conditions at sate including accessories for the same. The work in general, consists of supplying, laying jointing terminating and connecting at. 1.1. KV APLSTS PVC power and control cables.
- ii. The contractor shall supply all accessories including jointing and terminating materials, compound, tapes supporting materials, cleats cables lugs, concrete stable, bricks sand, cable-markers etc. as required to make the installation work including digging and filling of the trenches as required.

II. SPECIFICATION:

- i. All power cables to be supplied mentioned as 'APLSTS' in the Schedule should be mass impregnated, non draining, paper insulated lead sheathed, double steel tape armored and must comply with the latest IS1BS specifications.
- ii. All cabling materials such as cable compound, cable lugs, taped shall be of approved quality acceptable to the type recommended by the manufacture of the cable for which it is used and approved by the Department.
- iii. Installation of all equipment shall also conform to the applicable. Codes and practice as per the IS and shall be executed to comply with the lates Indian Electrical rules as regards the safely, payable of equipments and other essential provisions specified therein.
- iv. Only approved make of cable shall be used. ICC and CCI will be preferred,
- v. The cables shall generally be laid as per is Code of practice.

III. GENERAL RULES CABLE LAYING:

- i. Installation shall be carried out in a neat Workmen like manner by skilled experienced and competent workmen in accordance with the standard practices.
- ii. Cables shall be laid preferably in one length to avoid joins. If straight joints are found-necessary, these can be introduced with prior approval of the Engineer-in-charge. The cost of the straight joint however, shall not be borne by the Department. But in no case joint shall be within the conduit G.I. pipe and duct.
- iii. Proper care should be exercised in handling the cable to avoid formation of kind etc. and should it become necessary a cable be bent to a radius not less than 20 times the overall diameter of the cable.
- iv. Method of installation, routing of cable etc. shall in every case be subject to the Department's approval and the contractors shall modify and or certificate no extra cost to the Department's any portions of the installation which do not meet with the Department's approval. All damages to the civil and other works on this account shall be made good by the contractor at no extra cost to the Department.
The electrical contractor while notifying the building contractor for such work shall furnish the proper draws, dully explaining the work involved of indicate at suit actual work to be carried out as may be required by the building contractor. The electrical of any such work as the electrical work with this to the same has been completed.
- v. Where cables pass through hume pipes, contractor shall fix hard wood bushed round the cables at the ends of hume pipes. Where the cables pass through the floors or chambers and in such situation's the Engineer shall require, the contractor shall seal cable holes in a manner approved by Engineer-in-charge. Where cable pass through roads mullahs. etc. cables must be protected by class 'A' Hume pipe of diameters not less than 6. (15cms).
- vi. The cable routs shall be the shortest and these shall be minimum inference with built up areas, lawns etc.
- vii. Care shall be exercised for providing suitable props other service lines on earth at the time of excavation. Where cutting of a lawn inevitable it should be with the approval of the Engineers-in-charge.
- viii. Excavation of the trenches shall be executed with vertical sides and the trenches shall be kept as straight as possible. The exact location of each trench shall be settled by the Engineer-in-charge. On the site when the contract is in a position to commence each portion of the work.
The trench shall be not less than ½ meter wide and 90 cms deep. If more, cables are to be laid, .the width should be

suitably increased.

- ix. After the cables are laid, the trench shall be filled in layers, the each layer being weal rammed by spraying water and consolidated and sufficient allowance made for settlement. The extra earth over the trench should be removed from the place of trench to a place as decided by the Engineer-in-charge at site.
- x. Ends of cables shall be property sealed to prevent entry of moisture prior to installation.
- xi. Where it is as specified as 1/2 core cables the 1/2 core shall be a natural conductor having reduced section.
- xii. For all multi core cables each core and tails shall be brought not, marked and or colored in on approved manner.
- xiii. Cables termination shall be done with suitable compression brass glands in the case of PVC cables and cast iron trifurcating boxes in the case pf APLSTS cables. The Armour should be connected to the right main earth building with duplicate earth wires as per the relevant IS/BS specification.
The core insulation over each conductor shall however be retained through out the run of the conductor upto the end where lungs shall be fitted thereon for connections. The lungs shall by fitted by means of approved solder and the such as aleap and Eyer NO.7 liberally used. The joint shall be mechanically strong and pressure tested.

2.6 DISTRIBUTION BOARDS AND PANELS.

General Requirements:

- 2.6.1 All distribution panels shall comply with I. E. E. Rules 60-61. A clear distance of 0.91 b meter in front of the switch board shall be kept. Where bare connections of attachment are provided at the back of the switch board the space behind the panel shall begetter less than 0.299 meter or more than 0.762 main width there shall be a passage way from the further outstanding part of any attachment or conductor. If the space behind the switch board exceeds 0.70 main width there shall be a passage way from either end of the switch board clear to night of 1.928m width 0.299 m. All wiring connection shall be made neatly and securely.
- 2.6.2 For crocoites carrying more than 10 Amps, tinned cable sockets shall be used, all connections shall be so made as to form own diagram Circuit shall be clearly numbered to correspond-to wiring diagram. Names of the distribution boards shall be painted as directed by the Engineer-in-charge. All the switch fuse units and isolators D. Bs. shall be complete with earthing studs lugs neutral bar ink. H.R.C. fuses and of approved make.
- 2.6.3 Skeleton type panels shall have a rigid from work adequately braced and supporting frames adequately braced over which sheet metal shall be nearly secured. All switches distribution boards etc. shall be neatly arranged on the panels and all connections made from the back of switches. The panels shall be rendered dust and vermin-proof. The interior of the panels shall not be accessible to unauthorized persons.
- 2.6.4 All cubical type panels shall have rigid supporting frames adequately braced over which sheet metal shall be neatly secured. All switches, distribution boards etc. shall be neatly arranged on the panels and all connections made form the back of switches. The panels shall be rendered dust and vermin-proof. The interior of the panels shall not be accessible to unauthorized persons.
- 2.6.5 The recess type boards shall .be embedding wall in –a cupboard with a metal hinged door with locking arrangement. In all recessed conduit work all distribution boards shall be recessed. Where recessing is not possible, free standing panel may be provided as approved by the Engineer-in-charge.
- 2.6.6 All individual components the switch fuse units D. Bs. etc. shall be connected by earth connected by earth continuity wire of appropriate size with the main earth bus of the D. B. etc. The panel switches of D. Bs. shall be earthed by the less than 2 distinctive paths to earth. Earthing of metallic parts of exposed metal shall not be effected through any structural metal work which houses the installation. Where metallic parts are not required to be earthed and are liable to become alive should the installation of the contractor become defective such metallic parts shall be separated by durable non-conducting material from any structural work.
 - (a) Power panels shall be 3 phase, 4 wire, 400.230 volts for the distribution of 3 phase or single phase power loads. Lighting panels shall be 3 phase 4 wire 400/230 volts for single phase lighting load distribution on all 3 phase.
 - (b) All panels shall be done of protected front type with no mechanical or electrical defects.
 - (c) Bus bars shall be of electrolytic copper or alluminium as specified and the properly tinned sizes as indicated on applicable drawings as required.
 - (d) All knock outs for branch circuits entries shall be drilled and filled as required, for lighting panels the top and bottom cover plates shall be removable type.
 - (e) Main disconnect device for all panel boards shall be of switches of disconnect type and of the size as indicated shall be mounted directly below the panel or through a short thread conduit of required size.
 - (f) The main disconnect for all panel boards shall have an entry suitable for PVC Armored cable from bottom.

- (g) All panel boards shall be provided with an earthing terminal and lug for connection to the grounding system.
- (h) Temperature rise of all electrical parts shall not be more than 300° with full load amperes at room temperature.
- (i) All barriers and supports of current carrying parts shall be of moisture resistant insulating material and shall not be adversely affected by arcing.
- (k) The locations of panels shown in the drawings are only tentative; panels may be located at a place approved by the Engineer-in-charge.
- (l) All civil works connected, with fixing such as grouting chasing and making good shall be the Tenderer responsibility.
- (m) Wires adequate capacity with proper size of lugs shall be used for inter connections.
- (n) Panel should be self supported on angle channel iron frame work. It should be preferably of bolted construction in case bolted or grating rigidly after leveling and alignment.
- (o) The cupboard and D. B. should be of such size so to be accommodated in the existing room as per I.S. codes of practice for installations of Medium voltage switchgear.
- (p) Fabrication drawing showing the detailed dimensions and panels and its components indicating the frame work, earthing positioning of switches. 6 Bs. cable boxes, adopter chambers etc shall be furnished to the Engineer-in-charge for his approval. All material to be got approved by the Engineer-in-charge. Panel should be guaranteed for satisfactory operations for a period of one year after handing over.
- (q) The panel should be painted with anticorrosive paint suitable for humid and salty atmosphere on two coats of primer.

Switch Gears, power panels D. B. and S.F. Us.

- 2.6.8 The main busbar shall have continuous current rating as specified with neutral bar having half of full load rating of the phase busbar, The sizes of the bus bars shall be so selected that the current density in bar does not exceed 150 amps, per sq. m. for copper. The length of Bus-bar chamber should be as suitable length to fix all the switches etc. as per the prevailing standards, clear spacing of two adjacent buses shall be 1½" minimum bar should be treated all along with colour coated 11 KV grade PVC tape The maximum internal of support for each unsupported length shall exceed 600 mm.

The bus bar shall be of copper/aluminium and fabricated to the relevant standards specification. In case aluminium bus bar is used special with high conductivity aluminium bus bar alloy E 91 C frame conforming to E.S.S. 2898 shall be used. The current density shall not exceed 800A per sq. inch. Hylam barriers will be provided over the joints to prevent any short circuit.

The bus enclosing shall be made out not less than 16 gauge M. S. sheet construct on with angle iron support. All interconnections between bus bars S. F Us and O. Bs shall be of adequate size and details of such inter connection shall be furnished to the Engineer-in - charge for his approval.

The busbar shall be air insulated extensible type rectangular one. The bus bars chamber shall be dust tight by providing gaskets secured properly so as to tender it vermin proof.

The combination fuse switch unit should comply with IS 4064 BSS61 and BBS 2510 wherever applicable. It should be suitable to accommodate High Rupturing capacity cartridge Fuse links complying with IS 2208 or BS 88 and having a certified rupturing capacity of not less than 35 MVA at 440 volts (AC5 dully) The switch gear (panels D. Bs. etc.) shall be installed generally as per IS-Part -1 3072 and as specified and shown in drawings.

All fuse switch units shall be provided with, non-deteriorating HRC fuse links complying with IS 2208-1962 and having rupturing capacity of 35 MVA at 415 volts or as specified.

All switches above 60 amps, rating shall be provided with suitable size adapted boxes. All switches mounted-on the top of the busbars shall be provided with detachable type reverse entry adapter boxes. Suitably engraved tables shall be provided for each circuit as well as for the board.

A meters sector switches and LMH meter shall be provided where specifically mentioned. Small wiring for the inter-connecting shall be colour coded and provided with numbered fuses for easy identification of circuits.

- (a) The distribution boards should be totally enclosed metal clad complying with B. S. 214. The M. S. sheet steel enclosures for recessed D. Bs. shall be of not less than 14 gauge.
- (b) The D. B. shall be with hinged door and the locking arrangements as approved by the Engineer-in-charge.
- (c) All the components shall be enclosed in the enclosure. The mounting of D. B. shall be got approved by the Engineer-in-charge before carrying out the installation.

- (d) The D. Bs shall have proper side-cut outs for conduits entry or cable entry as required and these shall be made on site
- (e) Adequate spacing shall be provided inside the D Bs. for easy removal of the fuses and carry out the interconnection.
- (f) A set of insulating barriers have to be provided between incoming breakers switches and fuses.

Switch fuse Units:

- (a) All the D.P.T.P. and T. PN. Switch fuse units shall be totally enclosed iron a clad quick make, quick break type to best Indian make conforming to the I.S. or S. 3185 specifications. All the switch fuse units shall have mechanical Interlock with a door so that the door cannot be opened when the swatches are in ON position. The switch should be of double break solution type to ensure safely.
- (b) Each T.P & T.PN switch fuse unit shall be earthed with two distinct each connection.
- (c) Suitable insulator shall be provided between phases.
- (d) There shall be suitable natural link in the fuse box.
- (e) All T.P. and T.P.N. switch fuse units snail be rated for 500 volts and D.P, (required for single phase supply) and S.P.N. Switches for 250 volts.
- (f) The H.R.C. cartridge fuse shall conform to U.S. 88 (1952).
The O.C.Bs. ACB shall be suitable for 400/440 volts 3 phase escapable of interrupting a fault MVA of not less than 31. The circuit breaker shall conform to the BSS-936 1940. BSS 3659 with such tripping arrangement as may as required under special specification is for the building. Efficient and fool - proof mechanical interlocking shall be provided for the safe operation and maintenance. The rate be inclusive of the first filling of oil.

2.7 Instrumentation:

Tile instruments and meters wherever necessary shall be housed in special sheet steel box located between switch fuses units and bus bar chambers. The instruments etc. shall be mounted on the hinged cover with heir dial flushed. All instruments shall have protective H. R.C. fuse links. All interconnections and small wiring shall be neatly dressed arranged and duly coloured 10r easy identification of circuits.
Meters shall be provided as required in the Schedule, Meters shall be dead head and be suitable for 400/ 440 volt 3 phase 4 wire 50 cycle (in balanced load) supply.
Each section switch shall be 3 point and of minimum 250 volts grade with silver tipped contact suitable for metering circuits current transformers shall be of 5VA burden and commercial metering accuracy. Indication lamps shall be penal mounting type preferably of 250V grade. Every unit shall be pre-wired and interconnected to the system for its required indicating performance. Indicating lamps shall have independent circuit fuse.

2.8 FIXING OF LIGHTING FIXTURES:

1. Location of fixtures their manner of fixing mounting height etc. are indicated in relevant drawing. Actual location and levels shall however be arrived at site in co-ordination with other service etc. and prior approval of the Engineer-in-charge regarding the actual location Manner of fixing shall be obtained before the work is taken up in hand.
2. In all cases the contractor shall provide necessary interconnection wiring earthing painting etc. all necessary for complete installation. The contractor shall also test and commission the fixtures during completion of the work.
3. General arrangement of fixtures layout is indicated in drawings. Care shall be taken to see that all light fixtures are in a row in a room or particular area, are in absolute line and plump and are symmetrically disposed with respect to finished surfaces of walls, columns beams etc.
4. The inter-connections wiring from the light outlet point upto the fixture shall be carried out by means of flexible copper wire of section not less than 1.5 mm².
5. All fixtures suspended by means of conduits shall be done with all and socket joints or as per approved design.

2.9 Telephone system:

1. Empty conducting shall be done recessed or exposed to surface along with pulls boxes, junction boxes and telephone outlet boxes, in areas. and location as indicated in the relevant drawing as per materials and methods as described in regard to conducting under section "Wiring in conduits" except the G.I. pull wires of gauge not less than 20 SWG shall be dept pulled through conduits in all sections so that in future telephone wires can be pulled easily.
2. Location shown on the drawing are proximate and final location shall be decided in the field by the Engineer-in - charge.

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SPECIAL CONDITIONS OF CONTRACT FOR FIRE PREFVENTION SYSTEM

GENERAL:

These special conditions are meant to amplify the specifications and General Conditions of Contract. If any discrepancy is noticed between General Conditions of contract, specification, Bill of Quantity and Drawings, the most stringent of the above shall apply.

The scope of this section is to describe materials and systems for firefighting installations within the building which form together with the project documents, a complete volume of work and quality description.

All fire fighting installations shall be of high quality, safe, complete and fully operational including all necessary items and accessories whether or not specified in details. All fire fighting works shall be completed in accordance with the regulations and standard to the specification, the general provisions, special provisions and general requirements apply to all items of this specification.

The work shall be carried out simultaneously with Interior work, civil work, etc. and shall be continued till it is completed satisfactorily along with the completion of essential portions of the all services works. During the progress of work, completed portion of the area may be occupied and be put to use by authority but the contractor will remain fully responsible for the maintenance of Fire Protection System installations till the entire work covered by this contract is satisfactorily completed by him and handed over to authority.

ACCOMPANIMENT TO TENDER:

The tendered will attach to the Tender, at the time of submission, a statement containing information on the following points on separate pro forma.

List of all the confirmation of materials to be used as per specification along with manufacturer's name, catalogue and other technical details. Any deviation from the specifications shall be separately pointed out.

INTENT:

It is the intention of the specification and drawings to call for finished work, tested and ready for operation, whenever the words "Supply" or "Provide" are used. It shall mean delivery of material as specified in an assembled manner, ready for installation. Any apparatus, material or work not shown on drawings but mentioned in the specification or vice versa, or any incidental accessories necessary to make the work complete and perfect in all respects and ready for operation, even if not particularly specified, shall be furnished, delivered and installed by the contractor without additional expenses to AUTHORITY. Minor details not usually shown or specified, but necessary for the proper installation and operation, shall be included in the work and in the contract.

INTERPRETATION OF PROJECT DOCUMENTS:

The Specification, Drawings, and Bill of quantity shall be interpreted in accordance with good installation practice defined in the appropriate regulations and standards whether specifically referred to or not. If there is any discrepancy or shortfall in the application of the regulations to any aspect of this contract or the contractor considers there is anything detrimental to the standards or inconsistent with his obligations and guarantees, AUTHORITY shall be informed prior to signing the contract and shall thereafter inform the contractor in writing the course to be followed. Where the drawings are to a small scale or are expressed in symbolic terms or are in the form of a diagram, then exact location of items shall not be inferred and in all cases, the work shall be fully integrated with the work of other trades and with the fabric of the building. The contractor shall appraise

the duties of all plants and equipments taking account of any additions or variations and shall inform the AUTHORITY of any matters which may affect the design. In all cases the equipment installed shall be of appropriate rating for the duty it performs.

The Specifications and Bill of quantity shall be considered as part of this contract and any work or material shown on BOQ and not called for in the specification or vice versa, shall be executed as if specifically called for in both. The Drawings indicate the extent and general arrangement of the Fire Pumps, Fire Hydrants & Sprinkler system layout etc. and are essentially diagrammatic.

The work shall be installed as indicated on the drawings, however, any minor changes found essential to coordinate the installations of this work with other services shall be made without any additional cost to the Authority. The drawings are for the guidance of the contractor, exact locations, distances and levels will be governed by the building. The contractor shall examine all structural and Fire Protection system drawings before starting the work, and report to authority or its representative, any discrepancies which in his opinion appear on them, and get them clarified.

SCOPE OF WORK :

The work to be carried out under this contract comprises of the Fire Fighting work for the proposed project called for in the documents. The work covered under this contract comprises of supply (wherever called for), installation, connection, testing and commissioning the Fire Fighting work commencing from point of fire brigade inlet or fire water storage within the project/site as per specifications, relevant to TAC, NFPA, NBC, Indian standards, Local Fire Rules and Code of practice

The contractor shall carry out and complete the said work under this contract in every respect and in conformity with the current rules and regulations of the local Fire Authority, the Indian Standards and with the directions of and to the satisfaction of the Consultant and Authority. The Contractor shall furnish all labour and install all materials, appliances, equipment (except those items which will be supplied by the Authority to the contractor at site), necessary for complete provision and testing of the whole fire fighting installation as specified herein and shown on the drawings. This also includes any material, appliances, equipment not specifically mentioned herein or noted on the drawing as being furnished or installed but which are necessary and customary to make complete installation and to make the fire fighting system shown in the schedule or described herein, properly connected and in working order.

The work shall include all incidental jobs connected with Fire Fighting installation such as foundation block for pump-motor sets, excavation for pipe trenches and back filling, cutting/drilling holes through walls/floors and grouting, fixing of sprinklers with necessary civil work , supports & hangers for hydrant / pipes, etc.

In general, the work to be performed under this contract shall comprise of supply, installation, testing & commissioning of the following:-

External & Internal Hydrant system & Hose reel, Sprinkler System with Alarm Valve, System Pipes with all fittings & flanges, valves, hangers, supports, Isolation valves Portable Fire Extinguishers & Accessories

All qualities mentioned in the Bill of quantity are approximate and the contractor shall not be eligible for any claim due to any variation in / or omission of any item.

Any extra item shall be calculated on the rate analysis basis approved by bank. It is the responsibility of the contractor to co-ordinate with Local Fire Authority, Fire Officer and fulfils all the documents, drawings & any other requirement of them at no extra cost.

MODE OF MEASUREMENTS:

GI pipes shall be measured per linear meter of the finished length and shall include all fittings, welding, jointing, clamps for fixing to walls or hangers, anchor fasteners and testing.

Sluice valves with orifice flanges, check valves and full way valves shall be measured by numbers and shall include all items necessary and required for mixing and as given in the Specifications/Bill of Quantities.

Landing valves, hose cabinets, rubberized fabric linen fire hose pipes. First-aid fire hose reels (with gunmetal port way valves) and gunmetal branch pipes shall be measured by numbers and shall include all items necessary and required for fixing as given in the Specifications/Bill of Quantities.

Suction and delivery headers shall be measured per linear meter of finished length and shall include all items as given in the Bill of Quantities. Painting shall be included in the rate of headers. Painting of pipes shall be included in the rate for pipes and no separate payment shall be made.

No additional payment shall be admissible for cutting holes or chases in walls or floors, making connections to pumps, equipment and appliances.

FEES, PERMITS AND TESTS:

The Contractor shall pay for any and all fees and obtain permits required for the fire fighting work. On completion of the work the contractor shall obtain and deliver to the AUTHORITY, certificates of final inspection and approval by the local fire Authority and the Fire inspector.

UTILITY SUPPLY:

It is the responsibility of the contractor to co-ordinate with various utility agencies, the exact location of such Hook-Up Point and mode of connection. Further the contractor shall co-ordinate with such utility agencies to provide necessary drawings, documents, get their approval, make the necessary arrangement for the payments and arrange the utilities supply at no extra cost.

ACTUAL ROUTE OF PIPE:

The location of the hydrant pipe is only indicative, therefore, the actual route may differ from the plans according to the details of the building construction and the conditions of executions of the installations.

The contractor shall supply and install at his expense all secondary materials and special fittings found necessary to overcome the interference and to supply the modifications on the route of pipe and fittings that are found necessary during the work, to the complete satisfaction of the Authority's representative.

MATERIAL AND EQUIPMENT:

All material and equipment shall conform to the relevant standards and shall be of the approved make and design. The materials and equipment shall conform to relevant Indian Standards. The Contractor shall be responsible for the safe custody of all the materials and shall insure them against theft, damage by fire, earthquake etc. A list of items of materials and equipment, together with sample of each shall be submitted to the bank within 10 days of the award of the contract. Any item which is proposed as a substitute, shall be accompanied by all technical detail giving sizes, particulars of materials and the manufacturer's name and shall be submitted along with the tender or bid offer. At the time of the submission of proposed substitute the Contractor shall state the credit, if any due to the Authority. In the event the substitution is approved, all changes and substitutions shall be requested in writing and approvals obtained in writing from AUTHORITY. Authority's decision in the matter shall be final.

All materials of the same kind of service shall be identical and made by the same manufacturers. Any deviation to this rule shall be approved by the Consultant. Top priority shall be given to the products that have a permanent agent providing spare parts and maintenance facilities in the same city where the project is situated.

The make of fire equipments, components, accessories, etc. has been mentioned in the tender. In case if the make is not

given for the equipment / component / accessories, the contractor shall get approval for sample of that particular equipment / component / accessories from the Client / Consultants before any procurement.

MANUFACTURERS:

Where manufacturers have furnished specific instructions relating to the materials used in this job, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases.

Where manufacturer's names and/or catalogue numbers are given, this is an indication of the quality, standards and performance required.

When interfacing occurs, equipment shall be mutually compatible in all respects.

RATING:

Rating of all items shall be appropriate for the conditions on the particular site on which the items will be used. All the equipment shall be fit for continuous work under the worst conditions of site and shall be rated for the following ambient condition.

>Outdoor temperature 50° C.

> Corrosive and humid

INSPECTION AND TESTING:

Authority's representative reserves the right to request inspection and testing at manufacturer's works at all reasonable times during manufacture of items for this contract. Tests on site of completed works shall demonstrate, among other things:

That the equipment installed complies with specification in all particulars and is of the correct rating for the duty and site conditions.

That all items operate efficiently and quietly to meet the specified requirements. That all circuits are correctly fused and protected and that protective devices are properly coordinated.

That all non-current carrying metal work is properly and safely grounded in accordance with the specifications.

The contractor shall provide all necessary instruments and labour for testing, shall make adequate records of test procedures and readings, shall repeat any tests requested by the bank and shall provide test certificates signed by a properly authorized person. Such test certificates shall cover all works.

If tests fail to demonstrate the satisfactory nature of the installation or any part thereof then no claims for the extra cost of modifications, replacements or re testing will be considered. bank's decision as to what constitutes a satisfactory test shall be final.

The above general requirements as to testing shall be read in conjunction with any particular requirements specified elsewhere.

PRICE DETAILS:

At anytime and at the request of Authority, the contract shall provide details or breakdown of costs and prices of any part or parts of the works.

TEST CERTIFICATES:

The contractor shall submit test certificates for all the material/system installed. These shall be issued by a government recognized inspection office certifying that all equipment, materials, construction and functions are in agreement with the requirements of these specifications, ISI and when ISI is not applicable other approved certifying agencies.

INSTRUCTION MANUAL:

The contractor shall prepare and produce instruction, operation and maintenance manuals in English for the use, operation and maintenance of the supplied equipment and installations, and submit 3 sets to Authority, at the time of handing over.

SAMPLES AND CATALOGUES:

Before ordering the material necessary for this work, the contractor shall submit to Authority for approval, a sample along with the catalogues.

For big items such as Pump, Prime Mover, Valves, Hydrants, Pipe, the submission of catalogues shall be enough. Prior to ordering any firefighting equipment/material/system, the contractor shall submit to AUTHORITY, the catalogues, along with the samples, at least from three different manufacturers. After the selection of manufacturer by AUTHORITY, the contractor shall arrange inspection and testing at the manufacturer's factory or assembly shop for final approval. No material shall be procured prior to the approval of the Authority.

VENDOR AND SHOP DRAWINGS:

The contractor shall prepare and submit to Authority, for his approval, two sets of vendor detailed drawings of all distribution boards, switch boards, outlet boxes, special pull boxes, and other likewise material, equipment to be fabricated by the contractor, or other vendor within 15 days of signing of the contract.

Before starting the work, the contractor shall submit to Authority for his approval in the prescribed manner, the shop/execution drawings for the entire installation, specially the main connections and junctions, the route of conduits and cables, no. and size of wires drawn through the conduits, location of all the outlet points, and switch boards and distribution boards and any other information required by Authority. Authority reserves the right to alter or modify these drawings if they are found to be insufficient or not complying with the established technical standards or if they do not offer the most satisfactory performance or accessibility for maintenance.

AS BUILT DRAWINGS:

At the completion of work and before issuance of certificate of virtual completion the contractor shall submit to Authority, three sets of layout drawing drawn at appropriate scale indicating the complete Fire Protection system "as installed". These drawings must provide (in plan, elevation and section)

Location and details of Fire Pumps, Prime Movers and Panels, Location of Wet Risers, Internal Hydrants & hose details. Location of Fire Brigade inlets & fire storage tank.

GUARANTEE:

At the close of the work and before issuance of final certificate of virtual completion by Authority, the contractor shall furnish written guarantee indemnifying Authority against defective materials and workmanship for a period of one year after completion. The contractor shall hold himself fully responsible for reinstallation or replacement, free of cost to Authority, the following:

Any defective work or material supplied by the contractor.

Any material or equipment supplied by Authority which is damaged or destroyed as a result of defective workmanship by the contractor.

Any material or equipment damaged or destroyed as a result of defective workmanship by the contractor

SAFETY OF MATERIALS:

The contractor shall provide proper and adequate, storage facilities to protect all the materials and equipment including those issued by Authority against damage from any cause whatsoever.

COMPLETION CERTIFICATE:

On completion of the Fire Protection System installation (or an extension to an installation) a certificate shall be furnished by the contractor countersigned by the licensed supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local supply Authority. The contractor shall be responsible for getting the approval by the local concerned authorities.

DEFECTS LIABILITY:

Defects liability period shall mean 24 calendar months after Authority have issued certificate of completion of the whole work. The certificate of completion shall be issued after the necessary tests have been carried out to the satisfaction of Authority and the required drawings are submitted.

The contractor shall make good at his own cost and to the satisfaction of Authority, all defects or other faults arising in the opinion of Authority out of bad workmanship or faulty materials not in accordance with the drawings, NBC or TAC and the Rules and Regulations under which it may appear within twelve months after completion of the work.

STAFF:

The contractor shall employ a competent fully licensed qualified, full time erection engineer to direct the work of erection in accordance with the drawings and specifications. The engineer shall be available all times at site to receive instructions from Authority, in the day to day activities throughout the duration of contract. The engineer shall correlate the progress of the work in conjunction with all the relevant requirements of the supply Authority.

REINSTATING AND FINISHING OF CIVIL DAMAGES:

For erection of equipment / cables etc., if any civil structure is required to be broken, the same shall be done, restated and finished as original by the tendered without any extra cost.

TECHNICAL SPECIFICATIONS

Fire-fighting system work inclusive of water hydrant system, piping, sprinklers etc. including testing and commissioning of the system, but excluding fire detection and fire alarm system. The Contractor is required to completely furnish all the specialized services as described hereinafter and as specified in the schedule of quantities and/or shown on the drawings. Without restricting to the generality of the foregoing, the work shall include the following:

FIRE FIGHTING SERVICES

Work under this sub-head consists of furnishing all Labour, Materials, equipment and accessories necessary and required to completely install the Fire Fighting equipment etc., specified hereinafter and given in the Schedule of Quantities.

Without restricting to the generality of the foregoing the work of Fire Fighting System shall include the followings:

- a) Providing GI steel pressure pipe line main including Valves, Fire Hydrants, Excavation for Pipe, Laying of pipe, Painting of pipe and Making Connection to supply system.
- b) GI Pipe, Mains Laterals, Branches, Valves, Hangers and Appurtenances.
- c) Hose Reels, Rubberized fabric lined hose pipes, Hose cabinets, Sprinkler heads and Landing Valves.
- d) Portable Fire Extinguishers
- e) Fire Fighting Pumps, panels and all connected accessories including suction & delivery pipes.
- f) Testing Commissioning and giving live demonstrations to the various Inspection Authorities and Obtain their "No Objection Certificate" (NOC) for occupation of the building.

g) GENERAL REQUIREMENTS

All materials shall be of the best quality conforming to the Specifications and subject to the approval of the Engineer-in-Charge.

Pipes and Fittings shall be fixed truly Vertical, Horizontal or in slopes as required in a neat workman like manner.

Pipes shall be fixed in a manner so as to provide easy accessibility for repair and maintenance and shall not cause any obstruction in shaft, passage etc.

Pipes shall be securely fixed to walls and ceiling by suitable clamps at intervals specified. Only approved type of anchor fasteners shall be used for RCC ceilings.

Valves and other appurtenance shall be so located that they are easily accessible for operation, repairs and maintenance.

GENERAL SPECIFICATIONS:-

Entire installation shall be carried-out as per latest relevant regulations both statutory and those specified by Bureau of Indian Standards related to the works covered by the Specifications. In particular the equipment and installation shall comply with the following:-

1.04

- a) NFPA Standards (Latest Edition)
- b) Fire Protection Manual issued by TAC
- c) Rules of TAC for Automatic Sprinkler Installations
- d) Regulations under Indian Electricity ACT 1910
- e) Fire Insurance Regulations
- f) National Building Code of India, 2005
- g) Indian Standard Specifications
- h) Workman's Compensation Act
- i) Explosive and Smoke
- j) C.P.W.D. Specifications, for electrical works
- k) Any other applicable rules

CONTRACTOR'S DRAWINGS:-

Drawings provided to the CONTRACTOR:-

The CONTRACTOR will receive from the ENGINEER-IN-CHARGE / CONSULTANT the documents and drawings listed together with any further drawings issued under conditions of contract and other relevant documents.

Workshop Drawings:-

The CONTRACTOR and any SUB-CONTRACTORS, shall provide workshop drawings for his own trades, where applicable, or when requested by the ENGINEER-IN-CHARGE / CONSULTANT. The workshop drawings shall clearly show all dimensions, details, specifications, connections, or joints to other trades, incorporation of the work of other trades, etc.

Builder's Work Drawings:-

The CONTRACTOR shall provide drawings showing the exact dimensions and locations of all holes, ducts, recesses, access points, etc. These drawings shall also specify all necessary Builder's Work in connection with movement precaution, sound and thermal protection etc.

Manufacturers' Drawings:-

The CONTRACTOR shall provide manufacturer's drawings of his own trades, where applicable, or when requested by the CONSULTANT / ENGINEER-IN-CHARGE. The manufacturer's drawings shall clearly, show all dimensions, details, specifications,

connections or joints to other trades, incorporation of the work of other trades etc. During the currency of the Contract the CONTRACTOR shall arrange for manufacturers to prepare and submit for approval by the CONSULTANT two copies of manufacturer's drawings of major items of equipment such as Distribution Boards, switchgear, starter panels, etc. In addition they shall also provide workshop drawings of any portions of the work which the CONSULTANT may require to be shown in greater detail than that indicated on the manufacturer's drawings.

As Built Drawings and Working and Maintenance Instruction Manuals:-

The CONTRACTOR shall provide to the ENGINEER-IN-CHARGE / CONSULTANT prior to the time of completion of the works as defined in the Conditions of Contract. As Built Drawings and Working and Maintenance Instruction Manuals for all elements within the scope of work. Immediately on completion of any relevant works the CONTRACTOR shall prepare six sets of "As Built" drawings of such works for their approval by ENGINEER-IN-CHARGE. These drawings shall be a complete record of the works showing the positions and dimensions of all elements executed within the CONTRACTOR'S scope of work with soft copy.

The CONTRACTOR shall provide the ENGINEER-IN-CHARGE / CONSULTANT for approval six bound sets of Working and Maintenance Instruction Manual for all services, installations and equipment installed. The Working and Maintenance Instruction Manuals shall contain all manufacturer's operating and maintenance instructions, and detailed drawings of all equipment supplied. The detailed drawings do not require to be specially prepared, and can comprise copies of the Manufacturer's workshop drawings with suitable titles and reference numbers added. The exact scope and details of the Operating Instructions shall be agreed with the ENGINEER-IN-CHARGE / CONSULTANT.

After approval by the ENGINEER-IN-CHARGE / CONSULTANT the CONTRACTOR shall forward to the CONSULTANT four copies of the approved "AS BUILT DRAWINGS" & Working and Maintenance Instructions Manuals and four prints and one reproducible copy of each drawing. Drawing files on computer disk shall also be forwarded.

Submission & Approval of Drawings:-

All drawings prepared by the CONTRACTOR shall be submitted within two weeks time to the AUTHORITY / CONSULTANT by the CONTRACTOR and this will be the only accepted and contractual method. The AUTHORITY / CONSULTANT shall check and approve these drawings in a reasonable time and issue them to the CONTRACTOR as "Approved for Construction". Such approval shall not relieve the CONTRACTOR of responsibility for any discrepancies, errors or omissions in their submittals.

If the AUTHORITY / CONSULTANT instruct the re-drawing, alteration or amending of any of the submitted drawings which, in his sole opinion, do not properly interpret the intent of the Contract or for any reason do not comply with good Engineering practice, then the CONTRACTOR shall ensure the carrying out of the AUTHORITY'S / CONSULTANT's instructions and no claim for extra payment shall be allowed for any reason in this respect.

Should the AUTHORITY / CONSULTANT instruct the alteration or amending of any drawing prepared by CONTRACTOR / Manufacturer, then the CONTRACTOR shall ensure that this is done immediately in order to avoid any delay to the construction programme and no claim for extra payment or extension of time for completion of the works shall be allowed for any reason in this respect.

The CONTRACTOR shall prepare a detailed programme for the production of the drawings and information required immediately upon receipt of the AUTHORITY / CONSULTANT'S order to commence the works. The programme, which will be subject to the scrutiny of the AUTHORITY / CONSULTANT who may alter or amend it as he sees fit, shall be compatible with the programme for the construction works. The programme shall show the following in detail:

Dates on which the CONTRACTOR shall commence the drawings/material supply to site/manpower deployment date wise.

Dates on which the CONTRACTOR shall submit the drawings to the AUTHORITY / CONSULTANT.

Reasonable period for the AUTHORITY / CONSULTANT to check and approve the submitted drawings.

Date of commencement of the relevant work on site. All trades and / or elements as appropriate in their proper sequence.

Key approval dates for long delivery items. Any other information the AUTHORITY / CONSULTANT may request.

No related manufacture or installation shall be taken-up in hand until & unless co-ordination drawings, together with any explanatory literature, are approved in writing by the CONSULTANT / AUTHORITY.

The detailed programme shall reflect the requirements for production of information to permit timely co- ordination with all trades and other agencies working at site.

NOTE:- The CONTRACTOR's failure to comply with the provisions of this clause shall be deemed to constitute a default of his obligations under the contract.

Others: -

All drawings shall be produced using AUTOCAD and a disk file copy shall be submitted in addition to any prints specified at each stage of approval. Drawings by the CONTRACTOR shall be prepared in a clear and proper manner, with adequate size so that the drawings will be easily legible even when reproduced on a reduced scale. They shall be drawn in black ink on a white background to facilitate printing bearing at the bottom right corner the approval, Contract reference, Scale; title block and number etc.

All drawings by the CONTRACTOR shall be orientated to match the design drawings and shall have a key plan identifying the location or area of the Works to which they apply. They shall also bear indication and make reference to the geographical co-ordinates of the Site.

When a drawing is revised, the particulars of the current revision shall be clearly marked or circled, to facilitate checking. All prior revision numbers and references of drawings possibly superseded by the current issue shall also be clearly shown.

When drawings are submitted for approval without complying with these requirements, they may be rejected.

The CONTRACTOR shall submit to the AUTHORITY / CONSULTANT a disk copy and two prints of each drawing or document. If the drawing or document is approved, one print will be returned to the CONTRACTOR bearing the "Approved for Construction" Mark which may also bear the provision^[1.9] "Subject to ... " The CONTRACTOR shall then submit a further disk copy, four prints and onereproducible copy of the approved drawing or document to the AUTHORITY / CONSULTANT. If the drawing is not approved, one copy will be returned to the CONTRACTOR, bearing the "Not Approved" mark for re- submission.

Re-submission of drawings not approved shall be made using the same procedures as in the original submission.

The CONTRACTOR shall ensure that drawings etc., submitted for approval are forwarded in sufficient time to allow the AUTHORITY / CONSULTANT a reasonable time to examine them and to meet the approved drawing production programme.

The CONTRACTOR shall ensure that drawings are submitted at regular intervals, on an even flow basis, with sufficient and reasonable time prior to the date required for approval to permit amendments to be made.

If during the course of construction, revisions to approved details are required, the CONTRACTOR shall amend all Drawings affected and resubmit for approval, following the procedure described above, ensuring that the working drawings are at all times an accurate reflection of work on site.

Note: - The provision of the above Working and Maintenance Instruction Manuals shall form part of the Contract obligations, which shall not be deemed to be complete until they are received and approved by the AUTHORITY / CONSULTANT.

EXECUTION: - ^[1.7]_[SEP] The works shall be carried out in accordance with the Fire Fighting Drawings read along with Consultantural Drawings and Structural Drawings, to be issued by AUTHORITY / ENGINEER-IN-CHARGE as "GOOD FOR CONSTRUCTION". The Fire Fighting Drawings, Structural Drawings and Consultantural Drawings shall have to be properly Co-related before executing the works. In case of any difference noticed between Consultantural and Fire Fighting Drawings, the fact shall be immediately brought to the notice of ENGINEER-IN-CHARGE / CONSULTANT / AUTHORITY whose decision in writing shall be obtained by the CONTRACTOR. ^[1.8]_[SEP] CONTRACTOR's shall maintain a register of daily deployment of Electrician, Skilled / Unskilled Labour etc. on various activities and get it signed from ENGINEER-IN-CHARGE on daily basis and shall produce before the AUTHORITY as and when asked for.

QUALITY OF MATERIALS & GENERAL STANDARDS OF WORK: The CONTRACTOR under this contract commits himself to use first class materials and assumes full responsibility for the quality of all materials incorporated or brought for incorporation in the work. The work shall be executed in accordance with the best Engineering practice and as per directions of ENGINEER-IN-CHARGE. CONTRACTOR to obtain prior approval of make / model No. and Technical particulars of each item from the CONSULTANT before the material is supplied.

BAR CHART FOR EXECUTION OF WORK: The CONTRACTOR shall submit within one week of the acceptance of the tender, a BAR Chart to AUTHORITY, which shall indicate the planning for the execution of the entire work under the contract within the stipulated time given for completion. This shall be scrutinized by the AUTHORITY. The mutually agreed BAR-CHART shall be binding on the CONTRACTOR for progress of the work & for completion by the due date. The CONTRACTOR shall during the entire tenure of site work, provide accurate monthly reviews of BAR- CHART showing work targets & completed works for discussions with the CONSULTANT & AUTHORITY.

PARTICULAR SPECIFICATIONS

PIPES

PIPE FITTINGS.

Pipe fittings means tees, elbows, couplings, flanges, reducers etc. And all such connecting devices that are needed to complete the piping work in its totality.

Fabricated fittings shall not be permitted for pipe diameters 50 mm and below.

When used, they shall be fabricated, welded and inspected in workshops whose welding procedures have been approved by the TAC as per TAC rule 4102 for sprinkler system and applicable to hydrant and sprinkler system. The inspection shall be supervised by authorised representative of the AUTHORITY..

JOINTING

a) Screwed (50 mm dia. pipes and below): Joint for black steel pipes and fittings shall be metal-to-metal thread joints. A small amount of red lead may be used for lubrication and rust prevention. Joints shall not be welded or caulked. (With screwed VS forged fittings) with hole tight.

b) Welded (65 mm dia. and above): Joints between M.S. pipes and fittings shall be made with the pipes and fittings having "V" groove and welded with electrical resistance welding in an approved manner. All pipes will be subject to X- Ray test from an approved agency as per the TAC norms at the cost of contractor. (With welded M.S. fittings heavy class with V-Groove). The welding machine shall be 3 Phase of required current and capacity With approved welding rod along with DP Test.

c) Flanges: Flanged joints shall be provided on;

Straight runs not exceeding 30 m on pipelines 80 mm dia. and above

Both ends of any fabricated fittings e.g. bends, tees etc. of 65 mm dia. or larger diameter

For jointing all types of valves, appurtenances, pumps, connections with other type of pipes, to water tanks and other places necessary and required as good for engineering practice.

d) Flanges shall be as per I.S.6392-1971, Table 17/18 with appropriate number of G.I. nuts and bolts, half threaded of GKW make or equivalent with 3 mm insertion neoprene gasket complete.

e) Unions: Approved type of dismantable unions on pipes lines 65 mm and below in similar places as specified for flanges shall be provided.

PIPE PROTECTION

a) All pipes above ground and in exposed locations shall be painted with one coat of Zinc chromate primer and two or more coats of Synthetic Enamel Paint of approved shade.

b) All black steel pipes under floors or below ground shall be provided with protection against corrosion by application of 100/150 mm wide and 4mm thick layer of PYPKOTE/ MAKPOLYKOTE over the pipe, as per manufacturers specifications

with holiday testing machine.

PIPE SUPPORTS

- a) All pipes shall be adequately supported from ceiling or walls from existing/new inserts by Structural clamps fabricated from G.I Structural e.g. Rods, Channels, Angles and Flats as per details given in drawings and specifications. All clamps shall be painted with one coat of red lead and two coats of black/ approved shade Enamel paint of pre-approved brand.
- b) Where inserts are not provided, the Contractor shall provide anchor fasteners. Anchor fastener shall be fixed to walls and ceilings by drilling holes with Electrical drill in an approved manner as recommended by the manufacturer of the fasteners (HILTI/FISHER).

PIPE TESTING

All pipes in the system shall be tested to a hydraulic pressure of 1.5 times of the working pressure or minimum of 11 Kg/Cm² without drop in the pressure for at least 2 - 4 hours. Rectify all leakages, make adjustment and retest as required.

ANCHOR BLOCK Contractor shall provide suitable cement concrete, anchor blocks of ample dimensions at all bends, tee connection and other places required and necessary for overcoming pressure thrusts in pipes. Anchor blocks shall be of cement concrete 1:2:4 mix (1 cement: 2 coarse sand: 4 stone aggregate 20 mm nominal size).

VALVES

a) Valves, gauge and orifice plates

- i) Sluice Valves above 65 mm shall be of Cast Iron body and Bronze/Gunmetal seat. They shall conform to type PN 1.6 of IS:780-1980, valves up to 65mm shall be of Gunmetal Full way Valve with wheel tested to 20 Kg./cm class-II as per I.S: 778-1971. Valve wheels shall be of right hand type and have an arrow head engraved or cast thereon showing the direction for turning open and closing. All exposed or above ground valves of 65mm dia. & above shall be slim-seal butterfly valves marked IS: 13095 with matching flanges.
- ii) Non-return valves shall be of Cast Iron body and Bronze/Gunmetal seat. They shall conform to class of IS: 5312 and have flanged ends. They shall be swing check type in horizontal runs and lift check type in vertical runs of piping. They shall not be spring-loaded type.

EXTERNAL YARD HYDRANTS

The Contractor shall provide External Fire Hydrant in the Ring or on External Fire Line, as per specifications as specified in Schedule of Quantities and as shown in drawings. The spacing of the hydrants and the distance from the building shall be maintained as per relevant requirements of latest relevant codes, unless specified here with. The distance between two hydrant shall be 30-45mts.

Each External Fire Hydrant shall be provided with an External Fire Hose Cabinet as specified in Schedule of Quantities of size 76.8 x 61.44 x 25.80 cm, as approved by the Consultant to equip 2 nos. of 63 mm dia. controlled percolating hose and accessories as required. The cabinet shall be installed near the Hydrant as per details, approved by the Engineer-in-Charge/Consultant.

INTERNAL HYDRANTS

The Internal Hydrant outlet shall comprise "Single Headed Single Outlet SSLanding Valve" conforming to type 'A' of IS: 5290-1977. Separate valve on the head shall form part of the landing valve construction.

A cap with chain is provided on one head of the outlet. The hydrant will have an instantaneous pattern female coupling for connecting to Hose Pipe.

The Landing Valve shall be fitted to a Tee connection on the wet riser at the landing. With G.I. nut, bolt & double washer.

FIRST-AID HOSE REEL EQUIPMENT

First aid hose reel equipment shall comprise reel, hose guide fixing bracket hose tubing globe valve, stopcock and nozzle. This shall conform to IS: 884 - 1969. The hose tubing shall confirm to IS: 1532-1969.

The hose tubing shall be 20 mm dia. and 36.5m long. The G.M nozzle 5mm and globe valve shall be of 20 mm size.

The fixing bracket shall be of swinging type, with G.I. support. Operating instructions shall be engraved on the assembly. This heavy duty mild steel and cast iron brackets shall be conforming to IS: 884 - 1969. The first-aid hose reel shall be connected directly to the M.S. pipe riser taken independently from ring.

HOSE PIPES, BRANCH PIPES AND NOZZLES

Hose pipes
Two numbers Hose Pipes shall be rubber lined woven jacketed and 63mm in dia. 15m long. They shall conform to type A (Reinforced rubber lined) of IS: 636 - 1979. The hose shall be sufficiently flexible and capable of being rolled. Each run of hose shall be complete with necessary coupling at the ends to match with the landing valve or with another run of hose pipe or with branch pipe. The couplings shall be of instantaneous swinging type. This shall be conforming to IS: 903.

Branch pipes

Branch pipe shall be of Stainless Steel as given in BOQ 63 mm dia and be complete with male instantaneous spring lock type coupling for connection to the hose pipe. The branch pipe shall be externally threaded to receive the nozzle.

Nozzle

The nozzle shall be of Stainless Steel, as specified in BOQ 20 mm in (internal) diameter. The screw threads at the inlet connection shall match with the threading on the branch pipe. The inlet end shall have a hexagonal head to facilitate screwing of the nozzle on to the branch pipe with nozzle spanner.

End Couplings, Branch pipe, and Nozzles shall conform to IS: 903 - 1985.

Two rubberlined hoses of 15m length with couplings shall be provided with each External (Yard) Hydrant. Two RRL hoses of 15m length, as specified, with couplings shall be provided with each Internal Hydrant. One nozzle and one branch pipe with coupling shall be provided with each Yard Hydrant and Internal Hydrant.

HOSE CABINET

The internal hose cabinet shall accommodate the Hose Pipes, Branch Pipe, Nozzle First aid Hose Reel and Hydrant Outlets and shall be fabricated from 16 mm gauge M.S sheet as specified in Bill of Quantities. The overall size shall be 2100x900x715 mm, or as specified in the Consultantural details. This shall have lockable centre opening glazed doors as per the requirement and as per Consultantural details. Where the niche for wet riser is provided with shutters, separate hose cabinet as above may be dispensed with.

The hose cabinet shall be painted red and stove enamelled and words FIRE written in front glazed portion.

FIRE BRIGADE INLET CONNECTIONS

Fire Brigade Inlet connection shall be provided near the pump house and to the wet riser system as specified and as described in the BOQ, for the following purposes:

Fire Brigade suction connection for fire static tank with provision of foot valve Along with required pipe.

Fire brigade inlet connection to fire static tank.

Fire brigade inlet connection to the wet riser system. Each connection shall be provided with similar dia. of Sluice valve and Non return valve.

The locations of these Fire brigade connections shall be suitably decided with the approval of Consultant/Landscape Consultant and with a view that these are easily accessible to the fire brigade, without any possible Hindrance.

VALVE CHAMBERS

Contractor shall provide suitable Brick Masonry Chamber in cement mortar 1:5 (1 cement: 5 coarse sand) on cement concrete foundations 150 mm thick in 1:5:10 mix (1 cement: 5 fine sand: 10 graded stone aggregate 40 mm nominal size) 15 mm thick plaster inside and outside finished with a floating coat of neat cement inside with cast iron surface box approved by fire brigade including excavation, back filling complete.

Valve chambers shall be of size 90x90 cm for depths 100 cm and beyond.

PORTABLE FIRE EXTINGUISHER

Portable fire extinguishers shall be provided as per Bill of Quantities and shall conform to IS: 15683

Dry Chemical powder type - 6 Kg. Capacity as per I.S:15683

CO₂ type - 4.5 Kg. capacity as per I.S:15683.

Foam type - 9 Ltrs. capacity as per I.S:15683.

SPRINKLER HEADS

Sprinkler heads shall be provided at approximate spacing to cover 12 m² per Sprinkler head. The spacing shall however, be in conformity with the drawings and properly coordinated with Electrical Fixtures, Ventilation Ducts and Grills and other services along the ceiling.

Sprinkler heads shall be Chrome finished Brass/Gunmetal with quartz bulb with a temperature rating of 57°C. Sprinkler heads shall be of type and quality approved by the local fire brigade Authority. The inlet shall be screwed with Teflon tape. Sprinkler heads shall be pendent, recessed or special application side wall Sprinkler types as shown in drawings. All Sprinklers should have the Specifications, as far as maximum possible as per NFPA requirements and shall be UL/FM approved.

Contractor shall supply spare Sprinkler Heads of each type as per requirement and one Spanner for each type of sprinkler neatly installed in a steel box with glass shutters at locations approved by the Engineer- in-Charge.

FIRE FIGHTING PUMPS Fire and Booster Pumps

Motors for Electric Driven Pumps

Pumping sets shall be single/multi stage horizontal/vertical centrifugal single or multi outlet with cast iron body and bronze dynamically balanced impellers.

Connecting shaft shall be stainless steel with bronze sleeve and grease lubricated bearings.

Pumps shall be connected to the drive by means of spacer type love-joy coupling, which shall be individually balanced dynamically and statically.

The coupling joins the prime mover with the pump shall be provided with a sheet metal guard. Pumps shall be provided with approved type of mechanical seals.

Pumps shall be capable of delivering not less than 150% of the rated capacity of water at a head of not less than 65% of the rated head. The shut-off head shall not exceed 120% of the rated head.

The pump shall meet the requirements of the tariff advisory committee and unit shall be design proven in fire protection services.

Pump and Motor should assembled at factory/at source along with company complete all test certificate.

Electrically driven pumps shall be provided with totally enclosed fan cooled induction motors. For fire pumps, the motors should be rated not to draw starting current more than 3 times normal running current.

Motors for fire protection pumps shall be at least equivalent to the horse power required to drive the pump at 150% of its rated discharge and shall be designed for continuous full load duty and shall be design proven in similar service.

Motors for fire pumps shall meet all requirements and specifications of the tariff advisory committee.

Motors shall be suitable for 415 volts, 3 Phase, 50 cycles A.C supply and shall be designed for 33' C ambient temperature.

Insulation class F and Eff-1 motors shall conform to IS: 325.

Motors shall be designed for auto start system. Motors shall be capable of handling the required starting torque of the pumps. Contractor shall provide heating arrangements for the main fire pump motor to ensure that Motor windings shall remain dry.

CABLES

a) Contractor shall provide all power control cables from the motor control centre to various motors, level controllers and other control devices.

b) Cables shall conform to IS: 1554 and carry ISI mark.

- c) Wiring cables shall conform to IS 694.
- d) All power and wiring cables shall be copper conductor PVC insulated armoured and PVC sheathed of 1100 volts grade.
- e) All control cables shall be copper conductor PVC insulated armoured and PVC sheathed 1100 Volt grade.
- f) All cables shall have stranded conductors. The cables shall be in drums as far as possible and bear manufacturer's name.
- g) All cables joints shall be made in approved manner as per standard practice.
- h) The cable jointing shall be Crimping type.

CABLE TRAYS

- a) Contractor shall provide G.I. perforated cable trays at locations as shown on the drawings and of sizes as given in the bill of quantities, with G.I. sheet thickness of 1.5mm.
- b) Cable trays shall be supported from the bottom of the slab at intervals of 60cms at both ends by ort rods with insert plates OR Anchor fasteners.
- c) Cost of clips, bolts, nuts, support rods and any other materials required to fix the trays in proper manner shall be included in the rate for trays.

EARTHING

There shall be an independent earthing station. The earthing shall consist of an earth tape connected to an independent plate made of copper or G.I. having a conductivity of not less than 100% international standard. All electrical apparatus, cable boxes and sheath/armour clamps shall be connected to the main bar by means of branch earth connections of appropriate size. All joints in the main bar and between main bar and branch bars shall have the lapping surface properly tinned to prevent oxidation. The joints shall be riveted and sweated.

Earth plates shall be buried in a pit of 1.20x1.20M at minimum depth of 3M below ground. The connections between main bar shall be made by means of three 10mm brass studs and fixed at 100mm centres. The pit shall be filled with coke breeze, rock salt and loose soil. A G.I. pipe of 20mm dia. with perforations on the periphery shall be placed vertically over the plate to reach ground level for watering.

A brick masonry manhole 30x30x30xcm size shall be provided to surround the pipe for inspection. A bolted removable link connecting main bar outside the pit portion leading to the plates shall be accommodated, in this manhole for testing.

MOTOR CONTROL CENTRES

MCC shall be cubical type i.e. one motor feeder completely in one cubicle, and shall be fabricated from 14 gauge M.S. sheet with dust & vermin proof construction. It shall have Powder Coated finish and shall be fitted with suitable etched plastic identification plates for each motor. The cubicle shall comprise of the following: -

Incoming main MCCB of required capacity. One MPCB for each motor.

Fully automatic as specified starters suitable for motor H.P. with push buttons one for each motor and ON/OFF indicating LED type lamps.

Single phasing preventer of appropriate rating for each motor.

Rotary duty selector switch.

Panel type ampere meters one for each motor with ASS and CTS.

Panel type voltmeter on incoming main with rotary selector switch to read voltage between phase to neutral and phase-to-phase.

Indicating lamps for in incoming main and ON/OFF indicating lamps for each motor. Rotary switch for manual or auto operation for each pump (manual/auto/off).

The panel shall be pre-wired with colour-coded wiring.

All interconnecting wiring from incoming main to switch gear, meters and accessories within the switchboard panel.

Power wiring and Control wiring in MCC to be of Copper only and minimum size 4 & 1.5 Sq.mm respectively.

All switchgears and accessories shall be of approved make such as "Siemens, L & T, Allen Bredly" or equivalent.

Switchboard cubicles shall be floor or wall mounted type as recommended by manufacturers.

VIBRATION ELIMINATORS

All suction and delivery lines shall be provided with double flanged reinforced neoprene flexible pipe connectors. Connectors should be suitable for a working pressure of each pump. Length of the connector shall be as per manufacturer's details. Flexible connectors shall be as manufactured by Relay Corp., New Delhi.

PIPING FOR PUMPS

- a) Pipes for suction and delivery shall be galvanised (heavy duty) conforming to I.S:1239 up to 150mm dia. and as per I.S:3589 for dia. 200mm and above or as specified in bill of quantities. The flanges shall be G.I. or M.S.
- b) Full way and check valves 65mm dia. and below shall be gunmetal tested to 16 Kg/Sq.cm pressure certified and conforming to I.S:778.
- c) Suction strainer or foot valves shall be C.I., conforming to I.S:4038 - 1979, as specified in bill of quantities.
- d) Joints All pipes and fittings shall be provided with flanged joints, with flanges either screwed or welded complete and jointed with 3.0mm thick gasket complete with all G.I nuts, bolts and washers etc.
- e) Testing All G.I. pipes shall be tested to hydrostatically for a period of 2 hours to a pressure of 16 Kg/cm² without drop in pressure.

MEASUREMENTS

- a) Raw water pumps shall be measured by numbers and shall include all item as given in the bill of quantities.
- b) Motor control panel and level controllers shall be measured by numbers.
- c) Pipes for suction and delivery header and mains shall be measured per linear metre along the centre line of the pipe and shall be inclusive of all fittings.
- d) Cable trays and cables shall be measured per linear meter.
- e) G.I. Structural clamps including hangers shall be measured include in pipe rate No separate payment shall be admissible for supports, angel and channel bolts, anchor bolts, rawl plugs etc. which shall be deemed to be included in the respective items of BOQ. No separate payment shall be made for making connections of the existing service lines to the pumps. Vibration eliminator pads are included in the scope of all work/pump room work.

COMMISSIONING

After successful testing of the different items in parts, the Contractor shall provide all facilities including necessary piping, labours, tools and equipments etc. for carrying out testing and commissioning of the entire fire fighting system complete as per requirement in the presence of Client representative and during the visit of the Fire Officer whenever and as may be required. Generally, the following test/inspection has to be carried out:-

- (a) For the automatic operation of the main fire pump and pressurise pump as per the sequences required.
- (b) For checking the pressure available at the farthest and highest point in the fire ring and for the wet riser system.
- (c) For the automatic operation of the Sprinkler System either by a dummy fire below a sprinkler head by using the Inspection Test Valves. In this case, the annunciation panel indicating the particular zone and mechanical Gong valve should work.

GUARANTEE

- a) The contractor shall submit a warranty for all equipment, materials and accessories supplied by him against manufacturing defects, malfunctioning or under capacity functioning.
- b) The form of warranty shall be as approved by the Engineer-in-charge.
- c) The warranty shall be valid for a period of one year from the date of commissioning and handing over With virtual certificate.
- d) The warranty shall expressly include replacement of all defective or under capacity equipment. Engineer- in-charge may allow repair of certain equipment if the same is found to meet the requirement for efficient functioning of the system.
- e) The warranty shall include replacement of any equipment found to have capacity lesser than the rated capacity as accepted in the contract. The replacement equipment shall be approved by the Engineer-in- charge.
- f) The contractor shall include in his rates the operation of all mechanical equipment for a period of six months from the date of commissioning. No separate payment will be made on this account.
- g) Contractor has to complete all fire safety items, execution work according to tender specification and he has to take NOC from S.M.C. Fire Department and he should get final approval for fire safety system of this building.