

**Tender ID:** KOL-MKS-2023-12-001



**STATE BANK OF INDIA**

PREMISES & ESTATE DEPARTMENT  
LOCAL HEAD OFFICE, KOLKATA  
SAMRIDDI BHAVAN, BLOCK B, 9<sup>TH</sup> FLOOR,  
1, STRAND ROAD, KOLKATA – 700 001, WEST BENGAL

**SBI INVITES e-TENDERS**  
**FOR**

**SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ELEVATOR FOR SBI BUILDING AT AE 1/1,**  
**NEW TOWN, KOLKATA**

**Only following Lift manufacturing companies are eligible to participate in this tender.**

**1. Otis Elevator company India Ltd. 2. Kone Elevator India (P) Ltd . 3. Mitsubishi Elevator India (P) Ltd , 4. Schindler India (P) Ltd and Johnson Lift (P) Ltd**

Last Date & Time for submission of e-Tender: 22.12.2023 till 2:00 PM  
Opening of e-Tender: 3 PM on 22.12.2023

**Tender Submitted By:**

**Name of Contractor:**

.....

...

**Address:**.....

.....

.....

**GSTIN:**..... **Date:**.....

**Note:**

1. The bidders should possess valid Digital Signature Certificate (DSC) to participate in the e-Tendering
- 2.

**Bidders are requested to submit technical bid as well as price bid in online mode only. No hard copy is required to be submitted physically during tender submission. Only L1 bidder will be asked to submit the signed hard copy of all the pages of NIT in due course before issuing work order.**

Signature of Bidder with seal

**Tender ID: KOL-MKS-2023-12-001**



**PREMISES & ESTATE DEPARTMENT  
LOCAL HEAD OFFICE, KOLKATA  
SAMRIDDHI BHAVAN, BLOCK B, 9<sup>TH</sup> FLOOR,  
1, STRAND ROAD, KOLKATA – 700 001, WEST BENGAL**

**TENDER ID: KOL-MKS-2023-12-001**

**DATE : 04/12/2023**

SBI invites application cum sealed E-tender (**ON ITEM RATE BASIS** ) in single bid (Technical cum commercial bid) from The lift Manufacturers (**Otis, Kone, Mitsubishi, Schindler and Johnson** ) FOR **SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ELEVATOR FOR SBI BUILDING AT AE 1/1, NEW TOWN, KOLKATA** through online e-Tendering System Portal <https://www.tenderwizard.com/SBIETENDER>. Details of the e-Tender are as under.

Sl.	Description-1	Description-2
1	Name & Location of work	<b>SUPPLY, INSTALLATION, TESTING &amp; COMMISSIONING OF ELEVATOR FOR SBI BUILDING(G+3 FLOOR) AT AE 1/1, NEW TOWN, KOLKATA</b>
2	Tenders shall remain valid for	90 days from the date of opening of tenders.
3	<b>Time allowed for completion</b>	<b>120 days</b> (including Sundays and Holidays) from the Date of Issue of the Work Order or the Site Handover Date, whichever is later.
4	Last date and time of submission of tender	<b>2.00 PM</b> on or before <b>22.12.2023</b>
5	Date & Time of opening of Tender	<b>3 PM</b> on <b>22.12.2023</b> In case the tender opening date is declared as holiday / lock-down, the tender will be opened in the next working day at the same time.
6	Address for submission of Tender Document where tender will be opened	Office of, <b>The Assistant General Manager, (P&amp;E), State Bank of India, Local Head Office, Block-B, 9<sup>th</sup>Floor, Samriddhi Bhavan, Kolkata-700001</b>
7	Earnest Money Deposit (EMD)	<b>Rs 12600/- in form of DD or Banker's cheque in favour of the Assistant General Manager (Premises &amp;Estate), State Bank of India, Local Head Office, Kolkata drawn on any scheduled Bank in India..</b> <b>Bidders are requested to submit technical bid as well as price bid in online mode only. No hard copy is required to be submitted physically during tender submission except EMD . Hard copy of EMD is to be submitted by 22.12.2023 ( 2 pm) failing which Tender will be rejected.</b>
8	Defective liability period	<b>12 months</b> from the date of virtual completion of work
9	Liquated Damages	<b>0.5% per week</b> subject to a maximum of <b>5% of contract value</b>

10	Approximate Estimated cost of the project.	<b>Rs. 12,60,000.00 + GST As Applicable</b>
11	Initial Security Deposit (ISD)	2% of contract amount less EMD to be submitted by successful tenderer. By means of DD or BC in favour of AGM (P&E), SBI, LHO, Kolkata
12	Total Security Deposit (TSD) in the form of Retention Money (RM)	5% of the final bill amount including ISD. ISD will be retained with us for a defect liability period i.e, 12 months from the date of final bill. No interest will be paid for the said ISD.
13	Availability of Tender Documents	Tender documents are to be downloaded from the Bank's website ( <a href="http://www.sbi.co.in">www.sbi.co.in</a> ) or SBI e-Tender Portal <a href="http://www.tenderwizard.in/SBIETENDER">www.tenderwizard.in/SBIETENDER</a>
14	Pre Bid meeting	<b>12.12.2023 (12 NOON )</b>
15	For e-Tender related queries	<p><b><u>Service provider :</u></b></p> <p>M/s. Antares Systems Limited, Registered Office: #24, Sudha Complex, 3RD Stage, 3RD Block, Bangalore – 560079, Karnataka. Ph.: 080-49352000 / 40482000 Fax: 080-49352034</p> <p><b>Help Desk: 9073677150 / 9073677151 / 9073677152 / 033 4604 6611</b></p> <p><u>Contact Persons:</u> (On working days 9 AM to 6 PM)</p> <p><b>1. Mr.Kushal Bose</b> Mobile No.: +91 7686913157 e-Mail: <a href="mailto:kushal.b@antaressystems.com">kushal.b@antaressystems.com</a></p> <p><b>2. Mr. Subrata Sheet</b> Mobile No.: +91 9674758723 e-Mail: <a href="mailto:subrata.s@antaressystems.com">subrata.s@antaressystems.com</a></p>
16	Value of Interim Certificate	As mentioned in tender document
17	Deduction of Income Tax and GST	<p>A) TDS on Income Tax/GST will be deducted at source as per Govt. Guidelines.</p> <p>B) The contractor should comply with the following;</p> <p>i. Contractor should have GST Registration Number</p> <p>ii. Invoice should specifically/separately disclose the amount of GST levied at applicable rate as per GST provision</p> <p>iii. Contractor should timely file his GST return in accordance with GST provisions to enable the Bank to claim the credit of GST paid to the contractor.</p>

18	For any details, please contact	<b>The Assistant General Manager (P&amp;E)</b> State Bank of India Premises & Estate Department, Local Head Office, Kolkata, "Samridhi Bhavan", Block B, 9 <sup>th</sup> Floor, 1, Strand Road, Kolkata – 700 001. <b>Contact No.:</b> 033 – 2243 6677 <b>e-Mail ID:</b> <a href="mailto:agmpre.lhokol@sbi.co.in">agmpre.lhokol@sbi.co.in</a>
19	Documents Required to be signed , scanned and uploaded in the e-Tendering website during submission of Tender	<ol style="list-style-type: none"> <li>1. Copy of Bank Draft pertaining to EMD</li> <li>2. Process Compliance statement as per Annexure-I of NIT</li> <li>3. Signed &amp; Stamped copy of page no. 01 to 05 of Technical bid i.e NIT.</li> <li>4. Declaration copy related reading , understanding and acceptance of all the pages of NIT</li> </ol> <p>Note- 1. No Hard copy of technical bid as well as price bid have to be submitted physically. <b>Technical Bid</b> as well as <b>Price bid is to be submitted in online mode only.</b>            2. Only successful L1 vendor has to submit the hard copy of tender document duly signed.</p>
20	Corrigendum	Corrigenda, if any, is to be followed as published in <a href="http://www.tenderwizard.in/SBIETENDER">www.tenderwizard.in/SBIETENDER</a> portal only.
21	Any additional Information	The estimated rates as per the Break-up Of Quantities (BOQ) uploaded in this tender are inclusive of materials, labour, wages, fixtures, transportation , Loading and unloading , installation and commissioning all taxes & charges, cost of the insurances as specified in the tender, cost towards testing of materials supplied, wastages, Octroi, machinery, temporary works such as scaffolding, cleaning, overheads, profit, statutory expenses, incidental charges and all related expenses to complete the work. <b>However, GST on work value will be paid extra as applicable.</b> Co-ordinate and compliance for obtaining NOC from CEA

We strongly recommend the contractor to study the site condition & scope of work before submitting the tender. The work shall be strictly executed as per the Bank's approved policy. Materials to be used for execution of the said work are to be approved by the bank prior to use. **State Bank of India, Kolkata LHO has the right to accept / reject any / all tenders without assigning any reason.**

Sd/-  
**Assistant General Manager (P&E.)**  
 SBI, P&E Deptt., LHO Kolkata

<b>IMPORTANT NOTES</b>	
(a)	The lift Manufacturers such as <b>Otis, Kone, Mitsubishi, Schindler and Johnson</b> are only eligible for the above-mentioned work.
(b)	Any abnormal increase from the quoted price / cost will not be accepted.
(c)	The Bank reserves the right to reject any or all the tenders without assigning any reason whatsoever.
(d)	<p>Sealed Tenders are invited from the <b>lift Manufacturers (Otis, Kone, Mitsubishi, Schindler and Johnson) for Elevator Works only</b> in one part, i.e., <b>Part – I [Technical Bid + Singed Copy of DD pertaining to EMD]</b>, <b>Part – II [Price Bid]</b>, to be submitted online through the following portal: <a href="http://www.tenderwizard.in/SBIETENDER">www.tenderwizard.in/SBIETENDER</a></p> <p style="text-align: center;"><b>** Price Bid and technical bid shall not be accepted offline. Price Bid and technical bid can be submitted through online mode only *</b></p> <p><b>Part – I (Technical Bid + “Singed Copy of DD pertaining to EMD”):</b> Technical Bid will be available online for downloading of documents in the portal as stated above and is to be submitted offline the address as mentioned above.</p> <p><b>and</b></p> <p><b>Online Price Bid:</b> This shall contain the Electronic format of Price Bid. <b>The contractors can view the Tender Opening Details through their respective log-in IDs on the above-mentioned e-Tendering Portal (Website).</b></p>
(e)	The Bidder is expected to examine all instructions, forms, terms and specifications in the bid documents. Failure to furnish all information required as per the Bid Documents or submission of bids not substantially responsive to the Bid Documents in every respect will be at the bidder's risk and shall result in rejection of the bid.
(f)	In case the date of opening of tenders is declared as a holiday / lock-down, the tenders will be opened on the next working day at the same time. <b>Again, corrigenda, if any, are to be followed from <a href="https://www.tenderwizard.com/SBIETENDER">https://www.tenderwizard.com/SBIETENDER</a>.</b>
(g)	No conditions other than mentioned in the tender will be considered, and if given they will have to be withdrawn before opening of the Price Bid.
(h)	Tenders received without <b>EMD</b> shall be summarily rejected, and such tenders shall not be allowed to participate in the online price bidding process.
(i)	SBI has the right to accept / reject any / all tenders without assigning any reasons and no correspondence shall be entertained in this regard.
(k)	The intending bidders are to quote their offers item wise in all the items of price bid. If vendor fails to quote their price in any of the items of price bid, the price quoted by the vendor will be assumed as “Zero”. Vendor will be bound to execute the work of the item & the work value of that item will be zero.
(l)	Contractors shall provide all labour and materials, tool and tackles including necessary scaffolding for proper execution of the work including curing etc.
(m)	5% of the value of the executed work will be retained as Security Deposit and will be refunded on satisfactory completion of Defect Liability Period period, i.e., 12 (twelve) months from the date of completion of work. No interest shall be payable on Security Deposit.

(n)	Rates quoted shall be inclusive of providing necessary arrangements for satisfactory protection of furniture / flooring / electrical fittings / Bank's any other property during execution of the work.
(o)	Rates shall be inclusive of cost for disposing debris and any other unserviceable materials as per direction and inconformity with the Local or any other govt. authorities rules.
(p)	Rates shall be inclusive of cleaning of floors, making good to damaged floor, ceiling, walls, etc., after completion of work.
(q)	In case of any poor quality of work or substandard materials used for the purpose, shall be replaced as per instructions without any extra cost.
(r)	<b>Any scaffolding work required for installation of lift is in scope of contractor. No extra payment will be made in this regard.</b>

**Notes:-**

- **Conditional tenders shall be summarily rejected.**
- **SBI reserve their rights to accept or reject any or all the tenders, either in part or whole without assigning any reason(s) for doing so and no claim/correspondence shall be entertained in this regard.**
- **Quantities are tentative and can increase or decrease the quantities of any item and contractor have to execute the same at the quoted rates.**
- The application forms must be submitted in a prescribed format as laid down in the enclosed Annexures.

**The Price bid should be submitted in online mode only as prescribed format given in our Service Provider's portal [www.tenderwizard.in/SBIETENDER](http://www.tenderwizard.in/SBIETENDER).**

Yours Faithfully,

**Sd/-**

**Assistant General Manager (P&E.)**  
SBI, P&E Deptt., LHO Kolkata

**PROCESS COMPLIANCE STATEMENT (ANNEXURE I)**

*(The bidders are required to print this on their company's letter head and sign, stamp and submit with technical Bid)*

To,  
**M/s. Antares Systems Limited**

**AGREEMENT TO THE PROCESS RELATED TERMS AND CONDITIONS FOR THE e-TENDER OF SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ELEVATOR FOR SBI BUILDING AT AE 1/1, NEW TOWN, KOLKATA** This has reference to the Terms & Conditions for the E-tendering mentioned in the Tender document

This letter is to confirm that:

- 1) The undersigned is authorized representative of the company.
- 2) We have studied the Commercial Terms and the Business rules governing the E-tendering as mentioned in RFP of SBI as well as this document and confirm our agreement to them.
- 3) We also confirm that we have taken the training on the E-tendering tool and have understood the functionality of the same thoroughly.
- 4) We confirm that **SBI and M/s. Antares Systems Limited,** shall not be liable & responsible in any manner whatsoever for my/our failure to access & bid on the E-tendering platform due to loss of internet connectivity, electricity failure, virus attack, problems with the PC, any other unforeseen circumstances etc. before or during the E-tendering event.
- 5) We confirm that we have a valid digital signature certificate issued by a valid Certifying Authority.
- 6) We, here by confirm that we will honor the Bids placed by us during the E-tendering process.

With regards,

Date:

Signature with company seal Name:  
Company / Organization:  
Designation within Company /  
Organization:  
Address of Company/Organization :

**INSTRUCTIONS TO THE TENDERERS**

Sealed Tenders are invited by SBI for the **SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ELEVATOR FOR SBI BUILDING AT AE 1/1, NEW TOWN, KOLKATA**

**Site and its location**

The above mentioned work is to be carried out **at SBI BUILDING AT AE 1/1, NEW TOWN, KOLKATA,**

**Tender documents**

The work has to be carried out strictly according to the conditions stipulated in the tender consisting of the following documents and the most workmen like manner. \*) **Instructions to tenderers, \*) General conditions of Contract, \*) Special conditions of Contract, \*) Additional Specifications, Drawings, \*) Price bid**

<b>***** IMPORTANT NOTE:</b>
<b>The above documents shall be taken as complementary and mutually explanatory of one another but in case of ambiguities or discrepancies, shall take precedence in the order given below;</b>
a) Price Bid
b) General Terms & conditions of contract
c) Instructions to Tenderers
d) Drawings
e) Special conditions of contract
f) Technical specification

**The tender documents are not transferable.**

**Site Visit:**

The tenderer must obtain himself on his own responsibility and his own expenses all information and data that may be required for the purpose of filling this tender document and enter into a contract for the satisfactory performance of the work. The tenderer is requested satisfy himself regarding the availability of water, power, transport and communication facilities, the character quality and quantity of the materials, labour, the law and order situation, climatic conditions local authorities requirement, traffic regulations etc; The tenderer will be fully responsible for considering the financial effect of any or all the factors while submitting his tender.

**Earnest Money:**

As mentioned in NIT

**5.0 Initial/ Security Deposit :**

The successful tenderer will have to submit a sum equivalent to **2%** of accepted tender value including EMD by means of **DD drawn** in favour of **SBI Payable at Kolkata** within a period of 15 days of acceptance of tender.



**Total Security Deposit:**

Total security deposit shall be 5% of contract value. Out of this 2% of contract value is in the form of Initial Security Deposit (ISD). Balance 3% shall be deducted from the running account bill of the work at the rate of 10% of the respective running account bill i.e., deduction from each running bill account will be @10% till Total Security Deposit (TSD) including ISD reaches to 5% of contract value. The 50% of the Total Security Deposit shall be paid to the contract on the basis of architect's certifying the virtual completion. The balance 50% would be paid to the contractors after the defects liability period as specified in the contract.

**Additional Security Deposit: N/A**

**7.0 Signing of contract Documents:**

The successful tenderer shall be bound to implement the contract by signing an agreement and conditions of contract attached herewith within 15 days from the receipt of intimation of acceptance of the tender by the Bank. However, the written acceptance of the tenders by the Bank will constitute a binding agreement between the Bank and successful tenderer whether such formal agreement is subsequently entered in to or not.

**8.0 Completion Period:**

Time is essence of the contract. The work should be completed in all respect accordance with the terms of contract within a period of **120 days** from the date of award of work.

**9.0 Validity of tender:**

Tenders shall remain valid and open for acceptance for a period of **120 days** from the date of **e-Tender** . If the tenderer withdraws his/her offer during the value period or makes modifications in his/her original offer which are not accurate, **SBI / Competent Authority has the right to accept/reject any/all tenders without assigning any reasons whatsoever.**

**DECLARATION**

I/We have understood all the above conditions. If I/We fail to start/ or execute work within the stipulated period of time, our Security deposit will be forfeited.

Place:

Date:

Signature of Contractor

**FORM OF TENDER**

To ,

**Assistant General Manager (P&E)**

SBI, P&E Deptt., LHO Kolkata

Dear Sir,

**SUB: SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ELEVATOR FOR SBI BUILDING AT AE 1/1, NEW TOWN, KOLKATA**

**Site and its location**

**SBI BRANCH BUILDING AT AE 1/1, NEW TOWN, KOLKATA**

1. I/We refer to the tender notice issued by the bank for above work. In connection with the above.

2. I/We do hereby offer to perform, provide, execute, complete and maintain the works in conformity with the drawings, conditions of contract, specifications, and bill of quantities at the respective rates quoted in the bill of quantities.

3. I/We have satisfied myself/ourselves as to the site conditions, examined the drawings and all aspects of the tender conditions.

Subject to above, I/We do hereby agree, should this tender be accepted in whole or in part, to

a) Abide by and fulfil all the terms and provisions of the said conditions annexed hereto.

b) Complete the works within **120 days** from issuance of work order.

4. We have submitted our DD pertaining to **EMD as per NIT** .

5. We also declare that SBI may take any official actions ,

i) If our offer is withdrawn within the validity period of acceptance.

Or

ii) If the Contract is not executed within 10 days from the date of receipt

Or

iii) If the work is not commenced within 15 days after issue of work order or handing over of site whichever is later.

5. I/We understand that you are not bound to accept the lowest or any tender you receive.

6. Name of Partners/Directors of our Firm :

i)

ii)

iii)

Yours faithfully

Signature:

Designation:

Name of Partner/Director of the firm authorized to Sign or Name of person having power of attorney to sign the contract

(Certified true copy of Power of Attorney should be attached)

Signature and address of witness

a) Signature:

Name:

Address:

b) Signature:

Name:

Address:

**ARTICLES OF AGREEMENT**

ARTICLES OF AGREEMENT made the \_\_\_\_\_ day of \_\_\_\_\_ 2023

between \_\_\_\_\_

\_\_\_\_\_

of \_\_\_\_\_

\_\_\_\_\_

(hereinafter called the "Employer") of the one part and \_\_\_\_\_

of \_\_\_\_\_ (hereinafter called "The Contractor") of the other

part, where as the Employer is desirous of getting the work of

" \_\_\_\_\_ " executed and has

caused drawings, conditions of contract, specifications and schedule of quantities etc.,

describing the works prepared by Bank.

AND WHEREAS the SAID DRAWINGS numbered as per list attached inclusive of and the conditions of contract, specifications and schedule of quantities etc., have been signed by or on behalf of the parties hereto.

AND WHEREAS THE CONTRACTOR has agreed to execute upon and subject to the conditions set forth in the Schedule hereto (hereinafter referred to as "Said Conditions") the works shown upon the said drawings and described in the same specifications and included in the said schedule of quantities for such sum as may be ascertained to be payable in terms of the Bills of Quantities, and which sum is estimated to be Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ (hereinafter referred to as "Said Contract Amount").

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the said sum to be paid at the times and in the manner set forth in the said conditions, the contractor shall upon and subject to the said conditions, execute and complete the work shown in the said drawings and described in the said specifications.
2. The Employer shall pay the contractor the said sum or such sums as shall become payable hereunder at the times and in the manner specified in the said conditions.
3. Tender documents containing work order Notice to the Contractor, Conditions of Contract, Appendix thereto, Special Conditions of Contract, Specifications and Schedule of Quantities with the rates entered therein, shall be read and studied as forming part of this agreement and the parties hereto shall respectively abide by and submit themselves to the



conditions and stipulations and perform the agreement on their part respectively in such conditions contained.

- 4. The contract is neither a fixed lumpsum contract or a piece work contract, but is a contract to carry out work in respect of the entire works to be paid for according to actual measured quantities, including variations from BOQ at the rates contained in the Schedule of rates and Probable bill of quantities or as provided in the said conditions.
- 5. The Employer reserves to himself the right of altering the drawings and natures of the work, of adding/substitution to or omitting any items of work or having portions of the same carried out through alternate agencies without prejudice to this contract.
- 6. Time shall be considered a the essence of this agreement and the contractor hereby agrees to commence the work soon after the site is handed over to him but within 10 days reckoned from the date of issue of work order to execute the work, as provided for in the said conditions and complete the entire work in **120 days** subject to nevertheless to the provisions for extension of time.
- 7. This agreement and contract shall be deemed to have been made in Kolkata and any questions or dispute rising out of or in any way connected with this Agreement and Contract shall be deemed to have arisen in Kolkata and only the courts in Kolkata shall have jurisdiction to determine the same. The limitation period will be 90 days from the date of dispute having arisen.

AS WITNESS our hand this \_\_\_\_\_ day of \_\_\_\_\_ 2023

Signed by the said in the presence of:

WITNESS : SIGNATURE

NAME :

ADDRESS : EMPLOYER

WITNESS : SIGNATURE

NAME :

ADDRESS :

**GENERAL CONDITIONS OF CONTRACT**

Except where provided for in the description of the individual items in the schedule of quantities

and in the specifications and conditions laid down hereinafter and, in the drawings, the work shall be carried out as per standard specifications and under the direction of SBI / Consultant.

### 1. INTERPRETATION :

In constructing 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:

- i) *Client*: The term Client shall denote **STATE BANK OF INDIA** with their **Corporate Centre** at "State Bank Bhavan", Madam Cama Road, Mumbai – 400 021, Maharashtra and **Local Head Office** at "Samriddhi Bhavan", Block B, 9<sup>th</sup> Floor, 1, Strand Road, Kolkata – 700 001, West Bengal and includes Client's representative, successors & assigns.
- ii) *Consultant*: NA
- iii) *Contractor*: The term Contractor shall mean the successful bidder in the e-Tendering vide this office NIT No. **KOL-MKS-2023-12-001** dated **04/12/2023**, and his / their heirs, legal representatives, assigns and successors.

**Site : SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ELEVATOR FOR SBI BUILDING AT AE 1/1, NEW TOWN, KOLKATA.**

### Site and its location

where the work is to be executed as per the lay-out plans and drawings including any other building (s) thereat allotted by the Bank for the Contractor's use.

- iv) *Site Engineer / Project Management Consultant (PMC)*: The Site Engineer / Project Management Consultant shall be the person / organization appointed by the Bank for administration of construction work.
- v) *Drawing*: The work is to be carried out in accordance with drawings, specifications, the schedule of quantities and any further drawings or any other instruction, which may be given by the Bank / Consultant, during the execution of the work.

All drawings relating to work given to the Contractor together with a copy of schedule of quantities are to be kept at site and the Bank / Consultant, shall be given access to such drawings or schedule of quantities whenever necessary. Detail fabrication drawings where required are to be prepared by the Contractor and have these approved by Consultants before taking up execution.

The Contractor shall ask in writing for all clarifications on matters occurring anywhere in drawings, specifications and schedule of quantities or to additional instructions at least 15 days ahead from the time when it is required for implementation so that the Bank / Consultant may be able to give decision thereon.

- "The Work" shall mean the work to be executed or done under this contract.
- "Act of Insolvency" shall mean any act 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 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.

**SCOPE: The Work Consists of SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ELEVATOR FOR SBI BUILDING AT AE 1/1, NEW TOWN, KOLKATA**

### Site and its location

**SBI BUILDING AT AE 1/1, NEW TOWN, KOLKATA**

in Accordance With The Drawings And "Schedule Of Works". It Includes Furnishing All Materials,

Labour, Tools And Equipment And Management Necessary For And Incidental To The Construction And Completion Of The Work In conformity with designs, drawings, specifications, bill of quantities, etc. Should any detail, essential for efficient completion of the work be omitted from the drawings / specification, it shall be the responsibility of the contractor to inform the Bank / Consultant and to furnish and install such detail with Bank's / Consultant's concurrence, so that

upon completion of the proposed work the same becomes acceptable.

Bank / Consultant may in their absolute discretion issue further drawings and / or written instructions, details, directions and explanations, which are here after collectively referred to as "The Bank's / Consultant's instructions" in regard to:

- a. The variation or modification of the design quality or quantity of work or the addition or omission or substitution of any work.
- b. Any discrepancy in the drawing or between the schedule of quantities and / or drawing and / or specification.
- 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 person employed thereupon.
- 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 Defect Liability period.

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

## **2. DETAILED DRAWINGS AND INSTRUCTIONS :**

The Bank through its consultant shall furnish with reasonable promptness additional instruction by means of drawings or otherwise necessary for proper execution of the work. All such drawings and instructions shall be consistent with contract documents, true documents thereof and reasonably inferable therefrom.

The work shall be executed in conformity therewith and the Contractor shall not work without proper drawings and instructions.

Immediately after receipt of the work order of the contract, the contractor shall prepare a progress schedule and submit the same to the Bank through the Consultant for approval which shall indicate the dates for the starting and completion of the various stages of constructions.

## **3. COPIES FURNISHED:**

The Contractor on the signing hereof of the Contract shall be furnished by the Bank through its Consultant free of charge with a copy of the priced schedule of quantities / rates, two copies of each of the said drawings and one copy of specification and two copies of all further drawings issued during the progress of the work. Any further copies of such drawings required by the contractor shall be supplied on payment by the contractor of the charges therefor.

## **5. OWNERSHIP OF DRAWING:**

All drawings, specification and copies thereof furnished by the Bank through its Consultant are the property of the Bank. They are not to be used on other work, and with the exception of the signed contract set, are to be returned to the Bank on request on completion of the work.

#### **6. FAILURE BY CONTRACTORS TO COMPLY WITH BANK'S / CONSULTANT'S INSTRUCTIONS :**

If the contractor after receipt of written notice from the Bank and / or the Consultant requiring compliance of any instructions within ten days fails to comply with such instructions, the Bank through the Consultant may employ other person, to carry out any such instructions whatsoever that may be necessary to give effect thereto and pay all cost in connection therewith. The contractor shall either pay the Bank the cost incurred by the Bank in connection therewith or the Bank may release the cost from any money due or to become due to the Contractor.

- **Owner's Right to Terminate the Contract:**

If the contractor being an individual or a firm commit any 'Act of Insolvency' or shall be adjusted an insolvent or being an incorporated company shall have an order for compulsory winding up voluntarily or subject to the supervision of Govt. and of the Official Assignee of the liquidator in such acts of insolvency or winding up shall be unable within 7 days after notice to him to do so to show to the reasonable satisfaction of the Architect / Consultant that he is able to carry out and fulfill the contract and to give security therefore if so required by the Architect / Consultant.

Or, if the contractor (whether an individual firm or incorporated Company) shall suffer execution to be issued or shall suffer any payment under this contract to be attached by or on behalf of any of the creditors of the contractor.

Or, shall assign or sublet his contract without the consent in writing of the SBI through the Architect / Consultant or shall charge or encumber this contract or any payment due to which may become due to the contractor there under:

- (a) has abandoned the contract, or,
- (b) has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works for 15 days after receiving from the SBI through the Architect / Consultant written notice to proceed, or,
- (c) has failed to proceed with the works with such diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or has failed to remove the materials from the site or to pull down and replace work within seven days after written notice from the SBI through the Architect / Consultant that the said materials were condemned and rejected by the Architect / Consultant under these conditions, or,
- (d) has neglected or failed persistently to observe and perform all or any of the acts, matters or things by this contract to be observed and performed by the contractor for seven days after written notice shall have been given to the contractor to observe or perform the same or has to the detriment of good workmanship or in defiance of the SBI's or Architect's / Consultant's instructions to the contrary subject any part of the contract.

Then and in any of said cases the SBI and or the Architect / Consultant, may not withstanding any previous waiver, after giving seven days' notice in writing to the contractor, determine the contract, but without thereby affecting the powers of the SBI or the Architect / Consultant or the obligation 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 works subsequently had been executed by or on behalf of the contractor.

And further the SBI through the Architect / Consultant their agents or employees may enter upon and take possession of the work and all plants, tools, scaffoldings, materials, sheds, machineries lying upon the premises or on the adjoining lands or Roads use the same by means of

their own employees or workmen in carrying on and completing the work or by engaging any other contractors or persons to complete the work and the contractor shall not in any way interrupt or do any act, matter or thing to prevent or hinder such other contractor or other persons employed for completing and finishing or using the materials and plant for the works.

When the works shall be completed or as soon thereafter as convenient the SBI or the Architect / Consultant shall give a notice in writing to the contractor to remove his surplus materials and plants and should the contractor fail to do so within 15 days after receipt thereof by him the SBI sell the same by public auction after due publication, and shall adjust the amount realized by such auction. The contractor shall have no right to question any of the act of the SBI incidental to the same of the materials etc.

#### **7. VISIT TO THE SITE:**

Intending tenderer shall visit the site and make him thoroughly acquainted with the local site condition, nature and requirements of the work, facilities of transport condition, availability of labour and materials, access and storage for materials and removal of rubbish. The tenderer shall provide in the 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 drawings. The successful tenderer will not be entitled to any claim or compensation for difficulties faced or losses incurred on account of any site condition which existed before the commencement of the work or which in the opinion of the Bank / Consultant, might be deemed to have reasonably been inferred as so existing before commencement of work.

#### **8. TENDERS:**

The entire tendering process will be conducted on an electronic platform through **M/s. Antares Systems Limited**, the Bank's authorized e-Procurement Agency.

The Bank reserves the right to reject the lowest or any tender and also to discharge any or all of the tenders for each section or to split up and distribute any item of work to any firm or firms, without assigning any reason.

The tenderers should 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 should be correct, workable and self-supporting. If called upon by the Bank / Consultant, detailed analysis of any or all the rates shall be submitted. The Bank / Consultant shall not be bound to accept the Contractor's rate analysis.

The work will be paid for as "measured work" on the basis of actual work done and not as "lump sum" contract.

All items of work described in the schedule of quantities are to be deemed and paid as complete work in all respects and details including preparatory and finishing work 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 Bank has power to add to / omit from any work as shown in drawings or described in specifications 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 Bank. No variation shall vitiate the contract.

The tenderer shall note that his tender shall remain valid for consideration for a period of 90 (ninety) days from the date of opening of tender.

#### **9. TENDER DOCUMENTS:**

The work has to be carried out strictly according to the conditions stipulated in tender consisting of the documents as NIT, Instructions to the Tenderers, General Conditions of Contract, Special Conditions of Contract, Technical Specifications, Price Bid, Drawings, etc.

The above documents shall be taken as complementary and mutually explanatory of one another but in case of ambiguities or discrepancies shall take precedence in the order as Price Bid, Additional specification, Technical specification, Drawings, Special conditions of contract, GCC, instructions to Tenderers.



**10. AGREEMENT:**

The successful tenderer shall sign the agreement as per draft agreement annexed herewith (Annexure I) within 10 days (If instructed by the bank) from the date of issue of formal work order and he shall pay for all stamps and legal expenses, incidental thereto. However, the written acceptance of the tender by the Bank / Consultant will constitute a binding contract between the Bank and the person so tendering whether such formal agreement is or is not subsequently executed.

**11. PERMITS AND LICENSES:**

Permits and licenses for release of materials which are under Government control shall be arranged by the contractor on behalf of the Bank. The Bank will sign any form or application that may be necessary for the purpose.

It may be clearly understood that no compensation or additional charges can be claimed by the contractor for non-receipt of any such controlled material in due time.

The contractor will, however, be eligible to a proportionate extension of time on this account which in the opinion of the Bank / Consultant is reasonable. The Contractor shall at his own cost arrange for storage shed adequate for taking delivery and storing of the materials including any incidentals cost for obtaining permits and licenses etc. The costs for storing, transporting, handling etc. are to be included by the contractor in his quoted rate.

**12. GOVERNMENT AND LOCAL RULES:**

The Contractor shall conform to the provisions of all local By-laws and Act relating to the work and to the Regulations, etc., of the Government and Local Authorities and of any Bank with whose system the premises is proposed to be connected. The Contractor shall give all notices required by the said Act, Rules, Regulations and By laws etc. and pay all fees payable to such authority / authorities for execution of the work involved. The cost, if any, shall be deemed to have been included in his quoted rates, taking into account all liabilities for licenses, fees for footpath encroachment and restorations etc. 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, excise, sales tax, work contract tax or any other taxes or local charges, as applicable. No extra claim on this account will in any case be entertained. However, GST as per GST act will be paid on production of GST Registration Certificate and on claim.

**14. WATER & ELECTRICITY:**

The contractor shall make his own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions:

- i) That the water used by the contractor shall be fit for construction purposes to the satisfaction of the Bank or the Architect / Consultant.
- ii) The contractor shall make alternative arrangements for the supply of water if the arrangement made by the contractor for procurement of water in the opinion of the Bank or the Architect / Consultant is unsatisfactory.
- iii) The contractor shall construct temporary well / tube well in SBI land for taking water for construction purposes only after obtaining permission in writing from the SBI. The contractor has to make his own arrangement for drawing and distributing the water at his own cost. He has to make necessary arrangements. To avoid any accidents or damages caused due to construction and subsequent maintenance of the wells. He has to obtain necessary approvals from local authorities, if required, at his own cost. He shall restore the ground to its

original condition after wells are dismantled on completion of work or hand over the well to the SBI without any compensation as directed by the Bank or the Architect / Consultant.

- iv) The contractor shall make his own arrangements for **power and supply / distribution system** for driving plant or machinery for the work and for lighting purposes at his own cost. The cost of running and maintenance of the plants are to include in his tender prices. He shall pay all fees and hold the owner free from all such costs. He has to obtain necessary approval from the appropriate authorities, if required.

#### **15. PROVISIONAL SUMS (P. S.):**

All provisional sum described in the schedule of quantities as P.S. shall be exclusively allotted to the purchase of materials and not for any handling / fixing to be done by the contractor. Such costs of handling and fixing with profit (including transport charge if required) shall be separately included in the contract price as described in the schedule of quantities. The disposal of the amounts covered under this head will be absolutely at the discretion of the Bank. Contractor is to make payments for these materials to the suppliers on certificate or orders issued by the Bank / Consultant and realize the payment from the Employee thus made through his bills for work done.

#### **16. QUANTITY OF WORK TO BE EXECUTED:**

The quantities shown in the Schedule of quantities are intended to cover the entire new structure indicated in the drawing but the Bank reserves the right to execute only a part or the whole or any excess thereof without assigning any reason therefore. If at any time after the commencement of the work, the Bank / Consultant shall, for any reason whatsoever, not require the whole work thereof as specified in the tender to be carried out the Consultant / Bank shall give notice in writing of the fact to the contractor who shall have no claim to any payment as compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the 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, designs and instructions which shall involve any curtailment of the work as originally contemplated.

#### **17. OTHER PERSONS ENGAGED BY THE BANK:**

The Bank 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 the Contractor shall allow all reasonable facilities and use of any scaffolding etc. for the execution of such work. All the agencies employed by the Bank on the work shall act in close co-ordination extend mutual assistance to enable completion of the work satisfactorily.

#### **18. EARNEST MONEY, TENDER APPLICATION FEE AND SECURITY DEPOSIT / RETENTION MONEY:**

**Value of EMD:** As mentioned in NIT

**Value of ISD:** As mentioned in NIT

**Retention Money** shall be deducted from progressive running bills at the rate of **10 %** of the gross value of work done by the contractor and claimed in each bill, provided the total security deposit, i.e., retention money shall not exceed 5% of the contract value.

The retention money will not be deducted if adequate Bank Guarantee on a Nationalized Bank is submitted by the contractor.

50% of the total security deposit will be refunded to the Contractor subject to the issue of virtual completion certificate by the Bank / Consultant and Contractor removing his materials, equipment, labour force, temporary shed / stores etc. from the site. The Balance 50% will be

refunded to the contractor 30 (Thirty) days after end of "Defect Liability Period" provided he has satisfactorily carried out all the work, submitted all documents contractually called for and attended to all defects during defect liability period in accordance with the conditions of contract. No interest is allowed on retention money and earnest money deposit.

Further, if some dues to the Bank from the Contractor (s) have still to be recovered, the Bank reserves the right to withhold payment of so much of the retention money as in his opinion, represents the cost of the same.

#### **19. 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 drawing, schedule of quantities and specifications 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 Bank / Consultant whose decision shall be final and binding. The Contractor shall provide himself for ground and fresh water for carrying out the work at his own cost. The Bank shall on no account be responsible for the expenses incurred by the Contractor for hired ground or fresh water obtained from elsewhere.

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 except for specific items, if any stipulated in the tender documents.

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. on occasions as required or when ordered so to do and shall fully reinstate and make good all matters and things disturbed during the execution of work to the satisfaction of the Bank / Consultant.

The Contractor, if required, shall also provide such road on site as may be necessary for the proper performance of the contract and for his own convenience but not otherwise. Upon completion, such road shall be broken up and leveled where so required unless the Bank shall otherwise direct.

The Contractor shall at all times give access to workers employed by the Bank or any men employed on the building 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 Bank / Consultant as may be required to enable such workman to lay or fix pipes, Air-conditioning wiring, special fittings etc. The quoted rate of the tenderers shall accordingly include all these above mentioned contingent work.

#### **20. TIME OF COMPLETION / EXTENSION OF TIME AND PROGRESS CHARTS:**

##### **a) Time of Completion:**

The entire work is to be completed in all respects within the stipulated period of **120 days** (including Sundays and Holidays) from the Date of Issue of the Work Order or the Site Handover Date, whichever is later. The work shall be deemed to be commenced within 7 (seven) days from the issue of formal work order or the date on which the Contractor is instructed to take possession of the site, whichever is later. 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 Bank / Consultant have 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 Bank / Consultant, the work be delayed for –

- delayed handing over of site
- by reason of any exceptionally inclement weather
  
- by reason of instructions from the Bank / Consultant in consequence of proceedings taken or threatened by or disputes, with adjoining or neighboring owners
- by the work, or delay of other contractors or tradesmen engaged or nominated by the Bank / Consultant and not referred to in the specification
- by reason of authorized extra and additions
- by reason of any combination of workman or strikes or lockout affecting any of the building trades
- from other causes which the Bank / Consultant may consider are beyond the control of the contractor, the Bank / Consultant at the completion of the time allowed for the contract shall make fair and reasonable extension of time for completion in respect therefor.

In case of such strikes or lock-outs, as are referred to above, the contractor shall immediately give the Bank / Consultant written notice thereof. Nevertheless, the contractor shall use his best endeavors to prevent delay, and shall do all that as may be reasonably required, to the satisfaction of the Bank / Consultant to proceed with the work and on his so doing it will be ground of consideration by the Bank / Consultant for an extension of time as above provided. The decision of the Bank 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 Bank shall then, in the event of extension being granted, determine and declare the final completion date. The provision in clause 19 with respect to payment of liquidated damages shall, in such case be read and construed as if the extended date fixed by the Bank / Consultant were substituted for and the damage shall be deducted accordingly.

**c) Progress of work / work programme:**

During the period of construction the contractor shall maintain proportionate progress on the basis of a programme chart submitted by the Contractor immediately before commencement of work and agreed to by the Bank / Consultant. Contractor should also include planning for procurement of scarce material well in advance and reflect the same in the programme chart so that there is no delay in completion of the project.

**21. LIQUIDATED DAMAGES:**

Should the work be not completed to the satisfaction of the Bank / Consultant within the stipulated period, the contractor shall be bound to pay to the Bank a sum calculated @ **0.5 %** of the accepted Contract Price per week of delay, subject to a maximum of **5%** of the Contract Price or Certified Bill Value, whichever is higher, by way of liquidated damages and not as penalty during which the work remains uncompleted or unfinished after the expiry of the completion date.

• **Addendum to Liquidated Damages Clause:**

The parties hereby agree that due to negligence or act of the Contractor, if the employer suffers losses, damages, the quantification of which may be difficult, and hence the

amount specified hereunder shall be construed as reasonable estimate of the damages and the Contractor agree to pay such liquidated damages, as defined hereunder as per the provisions of this Contract.

The amount of liquidated damages under this Contract shall not exceed 5% of the Contract Price or Certified Bill Value, whichever is higher. The liquidated damages shall be applicable under following circumstances:

- (i) If the deliverables are not submitted as per schedule and time, the Contractor shall be liable to pay 1% of the total cost of the services for delay of each week or part thereof.
- (ii) If the deliverables are not acceptable to the Employer, and defects are not rectified to the satisfaction of the Employer within 30 days of the receipt of the notice, the Contractor shall be liable for Liquidated Damages for an amount equal to 0.5% of total cost of the services for every week or part thereof for the delay.

Any delay beyond this, STATE BANK OF INDIA shall be free to terminate the contract and get the work done from an alternate source at the risk of the contractor, besides forfeiting ISD. The decision of the Bank as to the period of delay on the part of the contractor and the quantum of compensation for such delay shall be final and binding on the contractor. If the contractor is unavoidably hindered in carrying out the work on account of delayed decision or the approval by the Bank, which are necessary to carry out further work, he shall be allowed suitable extension of time by concerned authority of the Project, whose decision shall be final and binding on the contractor. No claim of the contractor shall be entertained against the Bank for such delayed approvals / decisions by the Corporation, excepting suitable extension of time.

## **22. ACTION WHEN WHOLE OF SECURITY DEPOSIT IS FORFEITED:**

In any case in which under any clause or clauses of this contract, the contractor shall have rendered himself liable to pay liquidated damages amounting to the whole of his security deposit (whether paid in one sum or deducted by installments) the Bank / Consultant shall have power to adopt any of the following courses as they may deem best suited to the interest of the Bank:

- a) To rescind the contract (of which rescission notice in writing to the contractor under hand of the Bank shall be conclusive evidence) and in which case the security deposit of the contractor shall stand forfeited and be absolutely at the disposal of the Bank.
- b) To employ labour paid by the Bank and supply materials to carry out the work, or any part of the work, debiting the contractor with the cost of the labour and price of material (of the amount of which cost and price of a certificate of the Consultant shall be final and conclusive against the Contractor) and crediting him with the value of the work done, in all respects in the same manner and at the same rates as if had been carried out by the contractor under the terms of this contract. The certificate of the Consultant as to the value of the work done shall be final and conclusive against the contractor.
- c) To measure up the work of the contractor, and to take such part thereof as shall be unexecuted, out of his hands, and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him (of the amount of which excess the certificates in writing of the Consultants shall be final and conclusive) shall be binding and paid by the original contractor and may be deducted from any money due to him by the Bank under the contract or otherwise or from his security deposit or the proceeds of sale thereof, or a sufficient part thereof.
- d) In the event of any the above courses being adopted by the Bank the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements, or make any

advances on account of or with a view to the execution of this work or the performance of the contract. And in case the contract shall be rescinded under the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereto actually performed under this contract, unless and until the Bank will have certified in writing the performance of such work and the value payable in respect thereof, and he shall only be entitled to be paid the value so certified.

### **23. TOOLS, STORAGE OF MATERIALS, PROTECTIVE WORKS AND SITE OFFICE REQUIREMENTS:**

The Contractor shall provide, fix up and maintain in an approved position proper office accommodation for the Contractor's representative and staff, which offices shall be open at all reasonable hours to receive instruction notices or communications and clear away on completion of the work and make good all work disturbed.

All drawing maintained on the site are to be carefully mounted on boards of appropriate size. They are to be protected from ravages of termites, ants and other insects.

The Contractor, if called for, shall provide at his own cost all artificial light required for work and to enable other contractors and sub-contractors to complete the work within the specified time.

The Contractor, if called for, shall provide a suitable temporary hut for the watchmen and clear away the same when no longer required and to provide all necessary attendance, lights etc. required.

The Contractor, if called for, shall arrange for temporary latrines for the use of workers and field staff and keep the same in a clean and sanitary condition to the satisfaction of the Public Health Authorities and shall cause such latrines and soil to be cleared away whenever necessary and shall make good all the work disturbed by these conveniences.

Every precaution shall be taken by the Contractor to prevent the breeding of mosquitoes on the work during the construction and all receptacles, cisterns, water tanks etc. used for storage of water must be suitably protected against, breeding of mosquitoes. The Contractor shall indemnify the Bank against any breach of rules in respect of anti-malarial measures. The Contractor shall not fix or place any placards or advertisement of any description or permit the same to be fixed or placed in or upon any boarding gantry, building structure other than those approved by the Bank.

#### **Protective Measures**

The contractor from the 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 Sunday and other holidays.

The Contractor shall indemnify the Bank against any possible damage to the building, roads or member of the public in courses 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 work and making good all work disturbed.

#### **Storage of Materials**

The Contractor shall provide and maintain proper sheds for the proper storage and adequate protection of the materials etc. and other work that may be executed on the site including the tools and materials of sub-contractors and remove the same on completion. Sheds for storage of cement are to have pucca floor raised above the ground. Cement godown shall be constructed for storing about six weeks requirements of cement and stored as per norms with a stack of 10 bags each, 2 ft. opening all around with 2 ft. passage between each stack.

Structure shall be waterproof from all the sides and top. Cement should be stored one ft. above the ground level and have pucca raised floor.

So also reinforcement bars are to be stored above the ground level to prevent the same from

getting rusted.

### **Tools**

All tools, equipment's and instruments as instructed by the Bank / Consultant and considered necessary for the work shall be provided by the Contractor for the due performance of this contract.

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

The workmen and the supervisors on the work shall carry with them always a steel tape, a spirit level,

a plumb bob and a square and shall check the work to see that the same is being done according to the drawing and specifications. The site Engineer will use any or all measuring instruments or tools belonging to the contractor as he chooses for checking the work executed or being executed on the contract.

The Contractor should cover in his rates for making provisions for all reasonable facilities for the use of his scaffolding, tools and plant etc. by sub-contractors for their work.

### **24. NOTICE AND PATENTS OF APPROPRIATE AUTHORITY AND OWNERS:**

The Contractor shall conform to the provisions of any Acts of the Legislature relating to the work and to the Regulations and Bylaws of any authorities, and / or any water, lighting and other companies, and / or authorities with whose system the structures were proposed to have connection and shall before making any variations from the drawings or specification that may be associated to so conform, give the Bank / Consultant written notices specifying the variations proposed to be made and the reasons for making them and apply for instruction thereon. The Bank / Consultant on receipt of such intimation shall give a decision within a reasonable time.

The contractor/s shall arrange to give all notices required for by the said Acts. Regulations or Bylaws to be given to any authority and to pay to such authority or to any public officer all fees that may be properly chargeable in respect of the work and lodge the receipts with the Bank.

The Contractor shall indemnify the Bank against all claims in respect of patent right, royalties, damages to buildings, roads or members of public in course of execution of work and shall defend all action arising from such claims and shall keep the Bank saved harmless and indemnified in all respects from such actions, costs and expenses.

### **25. CLEARING SITE AND SETTING OUT WORKS :**

The site shown on the plan shall be cleared of all obstruction, trees, bushes, shrubs, loose stone and rubbish materials of all kinds. All holes or hollows whether original, existing or produced by removal of loose stone or materials shall be carefully filled up with earth well rammed and leveled off as directed at his own cost.

The Contractor shall set out the work and shall be responsible for the true and perfect setting out of the work and for the correctness of the position, levels, dimensions and alignment of all parts thereof. If at any time, any error shall appear during the progress of any part of the work, the Contractor shall at his own expenses rectify such error, if called upon to the satisfaction of the Bank / Consultant. The Contractor shall further set out the work to the alternative positions at the site until one is finally approved and the rates quoted in his tender should include for this and no extra on this account will be entertained.

### **Safety Warnings at Site:**

The Contractor shall have to arrange necessary flex signages depicting statutory warnings viz. "RESTRICTED AREA : WORK IN PROGRESS", "MEN AT WORK", etc.

### **26. DATUM:**

The average ground level will be considered as the crown of the nearest road, which should be taken as "Datum" which is however, subject to final confirmation by the Bank / Consultant. All levels shown in the drawings are to be strictly adhered to.

**27. BENCHES :**

The Contractor is to construct and maintain proper benches of all the main walls, in order that the lines and levels may be accurately checked at all times.

These benches will consist of timber posts of adequate length and minimum diameter 75 mm to be

driven in the ground at suitable distance as directed encased with brick work. The wire nails will be driven on the top of timber posts on the centre lines of columns, walls, inside and outside face of foundation trenches. Centre line of walls, columns etc. may be clearly indicated and checked at any time if it is so required.

**28. 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 once be carted away by the Contractor to a safe place as per rules of the appropriate authorities. The Contractor shall keep the foundation and work free from water and shall provide and maintain at his own expenses electrically or other power driven pumps and other plant to the satisfaction of the Bank for the purpose, until the building is handed over to the Bank. The Contractor shall arrange for the disposal of the water so accumulated to the satisfaction of the Bank and the local authority and no claims will be entertained afterwards if he does not include in his rates for the purpose.

**29. ACCESS:**

Any authorized representative of the Bank / Consultant shall at all reasonable times have free access to the work 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 Bank or their representatives necessary for inspection and examination and test of the materials and workmanship. Except the representatives of the Bank and Consultant no person shall be allowed at any time without the written permission of the Bank.

**30. MATERIALS, WORKMANSHIP, SAMPLES, TESTING OF MATERIALS :**

All the work specified and provided for in the specification 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 workman like 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 Bank / Consultant during the execution of the work, and to his entire satisfaction.

If required by the Bank / Consultant, the Contractor shall have to carry out tests on materials and workmanship in approved materials testing laboratories or as prescribed by Bank / Consultant at his own cost to prove that the materials etc. under test conform to the relevant I.S. standards or as specified in the specification. No extra payment on this account should in any case be entertained.

A list of Mandatory Tests is given in Technical Specification which is only indicative and not exhaustive. Any other tests, special or routine, on any material or workmanship, advised to be done by the Bank / Consultant for any reason shall be done by the contractor for which no



additional payment will be made.

All the materials, stores & equipment's required for full performance of the work under the contract must be provided through normal channels and must include charge for sales tax, import duties and other charges as applicable and must be best of their kind available and the Contractor/s must be entirely responsible for the proper and efficient carrying out of the work. The work must be done in the best workmanship manner. Samples of all materials to be used shall be submitted to the Bank / Consultant and written approval from the Bank / Consultant shall be obtained prior to placement of order. A list of materials of approved make and brand is annexed. Materials mentioned in the said list shall be used. In case materials specified in the list are not available the Contractor/s may use the equivalent product with prior permission from the Bank / Consultant. As regards equivalent product / material the opinion of the Bank / Consultant shall be final and binding on the Contractor.

During the inclement weather the Contractor shall suspend concreting and plastering for such time as the Bank / Consultant may direct and shall protect from injury all work during its course of execution. Any damage (during construction) to any part of the work for any reasons 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, lock-outs or any other cause, the Contractor shall take all precaution 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 tradesman or sub-contractor and any damage caused must be made good by the contractor at his own expenses.

### **31. REMOVAL OF IMPROPER WORK:**

The Bank / Consultant shall during the progress of the work have power to order in writing from time to time the removal from the work within such reasonable time or times as may be specified in the order of any materials which in the opinion of the Bank / Consultant are not in accordance with specification or instruction, the substitutions or proper re-execution of any work executed with materials or workmanship not in accordance with the drawings and specifications or instruction. In case the Contractor refuses to comply with the order Bank / Consultant shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental thereto as certified by the Consultant shall be borne by the contractor or may be deducted from any money due to or that may become due to the contractor. No certificate which may be given by the Consultant shall relieve the Contractor from his liability in respect of unsound work or bad materials.

### **32. SITE ENGINEER / PROJECT MANAGEMENT CONSULTANT (P. M. C.):**

The term "Site Engineer" shall mean the person if, any, appointed and paid by the Bank to superintendent the work. The Contractor shall afford the Site Engineer 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 requirements of the Contract or to sanction any day work, additions, alterations, deviations or omission or any extra work whatever, except in so far as such authority may be specially conferred by a written order of the Bank / Consultant.

The Site Engineer shall have power to give notice to the Contractor or to 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 Bank / Consultant is obtained. The work will from time to time be examined by the Consultant / Bank or his authorized representative and the Site Engineer. But such examination shall not in any way exonerate the Contractor from the obligation to remedy any defects, which may be found to exist at any stage of work or after the same is

complete. Subject to the limitations of this clause the Contractor shall take instructions only from the Consultant / Bank.

**33. OFFICE ACCOMMODATION FOR THE SITE ENGINEER / P.M.C.:**

The Contractor shall provide erect and maintain at his cost a separate simple watertight office accommodation for the Site Engineer / PMC in case it is not already available at site. This accommodation shall be well lighted and ventilated and provided with windows, door with a lock. The Site Engineer's / PMC's office shall be minimum of 14 Sqm (150 Sq.ft.) and the Contractor shall provide a desk, chair, drawers for keeping drawings, a cupboard having proper lock and backboard for displaying drawings and lights and fans. The accommodation shall be demolished when directed.

**34. 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 instruction of the Bank / Consultant. The Contractor shall engage at least one experienced Technical representative as Site-in-Charge 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 possible. No labourer below the age of sixteen years and not an Indian National shall be employed on the work.

Any labour 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 Bank or his representative shall be deemed to be a person employed by the contractor.

The Contractor shall comply with the provisions of all labour legislation including the requirements of the following –

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

The Contractor shall keep the Bank saved harmless and indemnified against claims of any of the workmen and all costs and expenses as may be incurred by the Bank in connection with any claim that may be made by any workman are recoverable from the Contractor.

The Contractor shall comply at his cost with order of requirement of any Health Officer of the State or any local authority or of the Bank 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 time for the use of men engaged on the work and shall remove and clear away the same on completion of work. Adequate precaution shall be taken by the Contractor or prevent nuisance of any kind on the work or on the lands adjoining the same.

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

**35. DISMISSAL OF WORKMEN:**

The Contractor shall on the request of the Bank / Consultant immediately dismiss from work

any person employed thereon by him, who may in the opinion of the Bank / Consultant be unsuitable or incompetent or who may misconduct himself. Such discharge shall not be the basis of any claim for compensation or damages against the Bank / Consultant or any of their officer / employee.

**36. ASSIGNMENT:**

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

**37. NOMINATED SUB-CONTRACTOR:**

All specialists, Merchants, Tradesmen and others executing any work or supplying 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 Consultant / Bank 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 work against which contractor shall make reasonable objection or save where the Bank and Consultant shall otherwise agree who will not enter into a contract provided –

- a) That the nominated sub-contractor shall indemnify the Contractor against the same obligation 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 and property of the contractor or under any Workman's Compensation Act in force.
- c) Payment shall be made to the nominated sub-contractor within 14 days of his receipt of the Consultant's certificate provided that before any certificate is issued the contractor shall upon request furnish to the Consultant proof that all nominated sub-contractors accounts included in previous certification have been duly discharged, in default thereof the Bank may pay the same upon a certificate of the Consultant and deduct the amount thereof from any sums due to the contractor. The exercise of those powers shall not create probity of contract between the Bank and the Sub-contractor.

**38. DAMAGE TO PERSONS AND PROPERTY, INSURANCE, etc.:**

The Contractor shall be responsible for all injury to the work or workmen, to persons, animal 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 of 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 of his or a sub-contractor's employees, 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, footpaths or ways as well as damage caused to the buildings and the work forming the subject of this contract by rain, wind or other inclemency of the weather. The Contractor shall indemnify the Bank and hold harmless in respect of all and any expenses arising from any such injury or damages to persons or property as aforesaid and also in respect of any claim made in respect of injury or damage under any acts of compensation or damage consequent upon such claim.

The Contractor shall reinstate all damage of every sort mentioned in this clause, so as to deliver the whole of the contract work 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.

### **39. INSURANCE:**

**39.1** Without limiting his obligations and responsibilities under the contract, the contractor shall insure in the joint names of the State Bank of India and the contractor against all loss of damages from whatever cause arising other than the excepted risk, for which he is responsible under the terms of contract and in such a manner that the State Bank of India and contractor are covered for the period stipulated under **Clause 20** of GCC and are also covered during the period of maintenance for loss or damage arising from a cause, occurring prior to the commencement of the period of maintenance and for any loss or damage occasioned by the contract in the course of any operations carried out by him for the purpose of complying with his obligations under clause.

- a) The works for the time being executed to the estimated current Contract value thereof, or such additional sum as may be specified together with the materials for incorporation in the work at their replacement value.
- b) The constructional plant and other things brought on to the site by the contractor to the replacement value of such constructional plant and other things.
- c) Such insurance shall be in effect with an insurer and in terms approve by the State bank of India which approval shall not be unreasonably withheld and the contractor shall whenever required produce to the Architect / consultant the policy if insurance and he receipts for payment of the current premiums.

### **39.2 Damage to persons and property**

The contractor shall, except if and so far as the contract provides otherwise indemnify the State Bank of India against all losses and claims in respect of injuries or damages to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution and maintenance of the works and against all claims proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation of damages for or with respect to:

- a) The permanent use of occupation of land by or any part thereof.
- b) The rights of State Bank of India execute the works or any part thereof on, over, under, in or through any lands.
- c) Injuries or damages to persons or properties which are unavoidable result of the execution or maintenance of the works in accordance with the contract.
- d) Injuries or damage to persons or property resulting from any act or neglect of the State Bank of India their agents, employees or other contractors not being employed by the contractor or for or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the contractor, his servants or agents such part of the compensation as may be just and equitable having regard to the extent of the responsibility of the State Bank of India, their employees, or agents or other contractors for the damage or injury.

### **39.3 Contractor to indemnify State Bank of India**

The contractor shall indemnify the STATE BANK OF INDIA against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the provision mentioned in this NIT.

### 39.4 Contractor's superintendence

The contractor shall fully indemnify and keep indemnified the State Bank of India against any action, claim, or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable which may be payable in respect of any article or part thereof included in the contract. In the event of any claim made under or action brought against STATE BANK OF INDIA in respect of such matters as aforesaid the contractor shall be immediately notified thereof and the contractor shall be liberty, at his own expenses to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the STATE BANK OF INDIA if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Architect / Consultant in this behalf.

### 39.5 Third party insurance

**39.5.1** Before commencing the execution of the work the contractor but without limiting his obligations and responsibilities under **Clause 24** of GCC shall insure against his liability for any material or physical damage, loss or injury which may occur to any property including that of STATE BANK OF INDIA, or to any person, including any employee of the STATE BANK OF INDIA,

arising out of the execution of the works or in the carrying out of the contract, otherwise than due to the matters referred to in the provision to **Clause 37** thereof.

### 39.5.2 Minimum Amount of Third party Insurance

Such insurance shall be effected with an insurer and in terms approved by the State Bank of India which approval shall not be reasonably withheld and for at least the amount stated below. The contractor shall, whenever, produce to the Architect / Consultant the policy or policies of insurance cover and receipts for payment of the current premiums.

**39.6** The minimum insurance cover for physical property, injury, and death is Rs.5.00 Lakh per occurrence with the number of occurrence limited to four. After each occurrence contractor will pay premium to make insurance valid for four occurrences always.

### 39.7 ACCIDENT OR INJURY TO WORKMAN

**39.7.1** **The State Bank of India shall not be liable for or in respect of any damages or compensation payable** at law in respect or in consequence of any accident or injury to any workmen or other person in the employment of the contractor or any sub-contractor, save and except an accident or injury resulting from any act or default of the State Bank of India or their agents, or employees. The contractor shall indemnify and keep indemnify State Bank of India against all such damages and compensation, save and except as aforesaid, and against STATE BANK OF INDIA claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

### 39.7.2 Insurance against accident etc. to workmen

The contractor shall insure against such liability with an insurer approved by the State Bank of India during the whole of the time that any persons are employed by him on the works and shall, when required, produce to the architect / consultant such policy of insurance and receipt for payment of the current premium. Provided always that, in respect of any persons employed by an sub-contractor the contractor's obligation to insure as aforesaid under this sub-clause shall be satisfied if the sub-contractor shall have insured against the liability in respect of such person in such manner that State Bank of India is indemnified

under the policy but the contractor shall require such sub-contractor to produce to the Architect / Consultant when such policy of insurance and the receipt for the payment of the current premium.

### **39.7.3 Remedy on contractor's failure to insure**

If the contractor fails to effect and keep in force the insurance referred to above or any other insurance which he may be required to effect the terms of contract, then and in any such case the State Bank of India may effect and keep in force any such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the State Bank of India as aforesaid from any amount due or which may become due to the contractor, or recover the same as debt from the contractor. In addition, an amount of penalty of Rs. 1.00 lakh will be imposed and to be recovered from the proceedings of any bill due to be paid to the contractor.

**39.7.4** Without prejudice to the others rights of the State Bank of India against contractors. In respect of such default, the employer shall be entitled to deduct from any sums payable to the contractor the amount of any damages costs, charges, and other expenses paid by the State Bank of India and which are payable by the contractors under this clause. The contractor shall upon settlement by the Insurer of any claim made against the insurer pursuant to a policy taken under this clause, proceed with due diligence to rebuild or repair the works destroyed or damaged. In this event all the monies received from the Insurer in respect of such damage shall be paid to the contractor and the Contractor shall not be entitled to any further payment in respect of the expenditure incurred for rebuilding or repairing of the materials or goods destroyed or damaged.

## **40. ACCOUNT RECEIPTS AND VOUCHERS:**

The Contractor shall upon the request of the Bank / Consultant furnish them with all the invoices, accounts, receipts and other vouchers that they may require in connection with the work under this contract.

If the Contractor shall use materials less than 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 Bank shall be final and binding on the Contractor as to the amount of materials the Contractor is required to use for any work under this contract.

## **41. MEASUREMENT OF WORK :**

The Contractor will record and submit to the Project Management Consultant / Site Engineer / Consultant / Bank with the details of measurements for their scrutiny and signature. The Contractor should submit the bill with such endorsement of PMC / Site Engineer / Consultant / Bank.

On receipt of the bill, the Consultant shall intimate the contractor that he requires the work to be measured, and the contractor shall forthwith attend or send a qualified agent to assist the Consultant or the Consultant's representative in taking such measurements and calculations and to furnish all particulars or to give all assistance required by them.

The Contractor or his Agents may at the time of measurements take such notes and measurements as he may require. All authorized extra work, omissions and all variations made without the Consultants knowledge, if subsequently sanctioned by him in writing, with the approval of the Bank shall be included in such measurements. The final measurement should be done within one month from the date of completion of work jointly by the Consultant and / or his representative and if the contractor fails to comply, the measurements taken by the Consultant will be final and binding.

## **42. METHOD OF MEASUREMENT:**

Unless otherwise mentioned elsewhere in the tender, measurement will be on the net quantities of work produced in accordance with up-to-date rules laid down by the Indian Standard Institution. In the event of any dispute with regard to the measurement of the work excluded the decision of the Consultant / Bank shall be final and binding on the Contractor.

**43. ACTION WHERE NO SPECIFICATION:**

In the case of any 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 IS Specification, then in such case the work shall be carried out in all respects in accordance with the instructions and requirements of the Consultant / Bank.

**44. CONTRACTOR NOT TO DEPOSIT MATERIALS IN A MANNER THAT MAY CAUSE INCONVENIENCE TO THE PUBLIC :**

The Contractor (s) shall not deposit materials locations, which will cause inconvenience to the public. The Consultant may require the contractor to remove any materials, which are considered by him to be a danger or inconvenient to the public and cause them to be removed at the contractor's cost.

**45. PAYMENT TERMS:**

The following percentage of contract rates {rate for supply, installation, testing and commissioning of lift(s) minus dismantling and buy back rate of the same lift(s)} in the tender shall be payable at different stages of work:

- a. 60% after delivery of material at site with all required documentation, test certificates as may be required and its verification/ inspection. Payment can be made on per lift basis but only after all material except erection accessories for the lift is delivered.
- b. Balance 40% will be paid after all statutory clearances are obtained and lift(s) are handed over after required testing & commissioning.
- c. Retention money as detailed in Clause 18.0 above shall be deducted from each bill for payment.

**46. VARIATION / DEVIATION:**

The Contractor may when authorized and shall, when directed in writing by the Consultant / Bank, add and or omit or vary the work shown in the drawings or described in the specification or included in the priced schedule of quantities. The Contractor on his own accord shall make no addition, omission or variation without such authorization from Bank. A verbal authority or direction by the Consultant / Bank if confirmed by the Contractor in writing within 7 days shall be deemed to have been given in writing.

The price of all such additional / non-tendered items will be worked out on the basis of rates quoted for similar items in the contract wherever existing or an engineering rate analysis based on prevalent fair price of labour materials at site of work including wastage and other components as required plus 15% for overhead and profit etc. works contract sales Tax at prevailing rate will be payable extra over the stipulated OH / project percentage. The tender rates shall hold good for any increase or decrease in tender quantities.

No claim for an extra shall be allowed unless it has been executed by the authorization of Bank / Consultant. No variation shall vitiate the contract.

**47. SUBSTITUTION:**

Should the Contractor desire to substitute any materials and workmanship he / they must obtain the approval of the Bank / Consultant in writing for any such substitution well in advance. For materials designated in this specification by such term as "Equal" or "other approved", etc.

Specific approval of the Bank / Consultant shall be obtained in writing prior to execution.

**48. PREPARATION OF BUILDING WORK FOR OCCUPATION AND SUBSEQUENTLY USE ON COMPLETION:**

The whole of the work will be thoroughly inspected by the Contractor and deficiencies / defects put right, all windows and doors cleaned including cleaning and oiling, if necessary of all hardware. All floors, staircases and every part of the building both inside & outside shall be left neat and clean as to ensure immediate occupation to the satisfaction of the Bank.

On completion of above, the contractor shall inform the Bank that he has completed the work and it is ready for inspection.

**49. CLEARING SITE ON COMPLETION:**

On completion of the work the Contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary work of every kind and leave the whole of the site and the work clean and in workman like condition to the satisfaction of the Bank / Consultant.

**50. DEFECTS AFTER COMPLETION:**

The Contractor shall make good from time to time at his own cost and to the satisfaction of the Bank / Consultant all defects, shrinkage, settlements or other faults which may appear within 12 (twelve) months after completion of the work and considered as the "defect liability period". In default the Bank may employ and pay other persons to amend and make good such damages, losses and expenses consequent thereon or incidental there to shall be made good and borne by the Contractor and such damages, loss and expenses shall be recoverable from him by the Bank or may be deducted by the Bank, in lieu of such amending and making good by the Contractor deduct from any money due to the Contractor a sum equivalent to the cost of amending such work and in the event of the amount retained being insufficient recover the balance from the Contractor from the amount retained under these conditions together with any expenses the Bank may have incurred in connection therewith.

**51. GUARANTEE FOR SPECIALIZED WORKS:**

Wherever provision for submission of a 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. The guarantee shall be furnished on a non-judicial stamp paper of appropriate value. If the contractor is required to submit guarantee / guarantees for any item / items for a period of more than 12 months, the guarantee/guarantees in case of those items shall remain valid even after expiry of the defect liability period of 12 months as stipulated in the contract.

**52. CONCEALED WORK:**

The Contractor shall give due notice to the Bank / Consultant whenever any work is to be buried in the earth, concrete or in the bodies of walls or otherwise become 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 option of the Bank / Consultant, be either opened up for measurements at the Contractor's expense or no payments may be made for such materials. Should any differences or dispute arise after execution of any work as to measurements etc. or other matters which cannot be conveniently tested or checked the records of the Bank / Consultant shall be accepted as correct and binding on the Contractor.



- **Treasure Trove:** Any treasure trove, coin or object antique which may be found on the site shall be the property of SBI and shall be handed over to the Bank immediately.

**53. ESCALATION:**

The rates 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, sales tax, octroi etc. unless specifically provided for this document.

**54. IDLE LABOUR:**

Whatever the reasons may be, no claim for idle labour, additional establishment cost, hire and labour charges of tools and plants would be entertained under any circumstances.

**55. SUSPENSION:**

If the Contractor, except on account of any legal restraint upon the Bank preventing the continuance of the work or in the opinion of the Bank shall neglect or fail to proceed with the due diligence in the performance of his part of the contract or if he shall more than once make default, the Bank 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.

After such notice shall have been given, the Contractor shall not be at liberty to remove from site of the work or from any ground contiguous thereto, any plant or materials to subsist from the date of such notice being given until the notice shall have been complied with. If the Contractor shall fail for 15 days after such notice has been given to proceed with the work as therein prescribed, the Bank may proceed as provided in **Clause 56** (Termination of Contract by the Bank).

**56. TERMINATION OF CONTRACT BY BANK:**

If the Contractor being a Bank go into liquidation 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 compensation 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 shall be unable, within fourteen days after notice to him requiring him to do so, to show to the reasonable satisfaction of the bank that he is able to carry out and fulfill the contract and if so required by the Bank to give reasonable security there for, 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 which may become due to the Contractor, thereunder, 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 work, or shall in the opinion of the Bank not exercise such due diligence and made 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 Bank after three clear days' notice requiring the contractor to do so shall have been given to the contractor as hereinafter mentioned, or shall abandon the contract, then and in any of the said cases, the Bank may notwithstanding any previous waiver determine the contract by a notice in writing to the effect as hereinafter mentioned, but without thereby affecting the powers of the Bank of the obligations and liabilities of the contract 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 Bank or his agent or servants may enter upon and take possession of the work and all plants, tools, scaffolding, sheds, machinery, steam and other power, utensils and materials being lying upon premises or the adjoining lands or road 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 work or by employing any other contractors or other person to complete, and the contractor shall not in any way interrupt or do any act, matter or thing 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 work. When the work shall be completed or as soon as thereafter as conveniently may be, the Bank shall give notice in writing to the contractor to remove his surplus materials and plants and should the contractor fail to do so within a period of 14 days after receipt by him of the said notice, the Bank may sell the same by Public Auction and shall give credit to the contractor for the amount so realized. Any expenses or losses by the Bank in getting the work carried out by other contractors shall be adjusted against the amount payable to the contractor by way of selling his tools and plants or due on account of work carried out by the contractor prior to engaging other contractors or against the Security Deposit.

## **57. ARBITRATION**

- i) Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions orders or these conditions or otherwise concerning the work or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter.  
If the contractor considers that he is entitled to any extra payment or compensation in respect of the works over and above the amounts admitted as payable by the Architect or in case the contractor wants to dispute the validity of any deductions or recoveries made or proposed to be made from the contract or raise any dispute, the contractor shall forthwith give notice in writing of his claim, or dispute to the Assistant General manager (Premises & Estate) S.B.I. LHO, Kolkata and endorse a copy of the same to the Architect, within 30 days from the date of disallowance thereof or the date of deduction or recovery. The said notice shall give full particulars of the claim, grounds on which it is based and detailed calculations of the amount claimed and the contractor shall not be entitled to raise any claim nor shall the Bank be in any way liable in respect of any claim by the contractor unless notice of such claim shall have been given by the contractor to the Asst. General Manager (Premises & Estate) in the manner and within the time as aforesaid. The contractor shall be deemed to have waived and extinguished all his rights in respect of any claim not notified to the Asst. General Manager (Premises & Estate) in writing in the manner and within the time aforesaid.
- ii) The Asst. General Manager (Premises & Estate) shall give his decision in writing on the claims notified by the contractor. The contractor may within 30 days of the receipt of the decision of The Asst. General Manager (Premises & Estate) submit his claims to the conciliating authority namely the Circle Development Officer, S.B.I. L.H.O., Kolkata for conciliation along with all details and copies of correspondence exchanged between him and The Asst. General Manager (Premises & Estate).
- iii) If the conciliation proceedings are terminated without settlement of the disputes, the contractor shall, within a period of 30 days of termination thereof shall give a notice to the concerned Chief General Manager of the Bank for appointment of an arbitrator to adjudicate the notified claims failing which the claims of the contractor shall be deemed to have been considered absolutely barred and waived.

- iv) Except where the decision has become final, binding and conclusive in terms of the contract, all disputes or differences arising out of the notified, claims of the contractor as aforesaid and all claims of the Bank shall be referred for adjudication through arbitration by the Sole Arbitrator appointed by the Chief General Manager. It will also be no objection to any such appointment that the Arbitrator so appointed is a Bank Officer and that he had to deal with the matters to which the Contractor relates in the course of his duties as Bank Officer. 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 in the manner aforesaid by the said Chief General Manager. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each dispute along with the notice for appointment of arbitrator.

It is also a term of this contract that no person other than a person appointed by such Chief General Manager as aforesaid should act as arbitrator.

The conciliation and arbitration shall be conducted in accordance with the provisions of the Arbitration & Conciliation Act 1996 or any statutory modification or reenactment thereof and the rules made thereunder.

It is also a term of the contract that if any fees are payable to the arbitrator these shall be paid equally by both the parties. However, no fees will be payable to the arbitrator if he is a Bank Officer.

It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the 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) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof, shall be paid and fix or settle the amount of costs to be so paid.

**Bill Submission Format:** The bill shall be as per tender specification as detailed below along with Detail Measurement Sheet. Bill will not be accepted if detail calculation sheet of the quantity executed at site is not being attached. If required then the contractor may be ask to submit the Manufacturing certificate in due course of bill checking period

SN	Description	Unit	Tender Rate	Tender quantity	Actual quantity (L/B/D)	Tender amount	Actual amount

**Declaration**

I/We hereby declare that I/We have read the above terms and conditions /instructions carefully

and fully understood and will abide by the same.

Signature of the vendor with seal

Place :

Date:

### **3. Quantities & SoR:**

- All rates quoted in the schedule of quantities and rates and as accepted shall remain firm during the contractual period including extension if any and shall not be subjected to any escalation for a **variation limit of  $\pm 20\%$  of the Total Value of the Work as per Work Order**. They shall include for any overtime required to complete the Work according to programme and on schedule and completely to the Company's satisfaction.
- The Contract price includes rates for all items enumerated as per SoR, all wastage, all transportation costs, all costs relating to duties, royalties, Cess, taxes and other charges, all costs relating to operation and maintenance of construction equipment and also all services as applicable for execution of the work at your place except Service Tax, Education Cess and Worker's Welfare Cess.

The rates shall be deemed to include all direct costs, Land for Contractor's Workshop / Labour Camp and indirect cost such as those relating to access roads, establishment expenses etc

### **Cost of Non Tendered Item**

- In case any additional, altered, substituted or any new item of work includes subsequently as per site condition and requirement for which no rate is specified in the Contract, rate for such item will be determined by the Company from the rate for similar or near similar item of work in the Contract and shall be mutually discussed and agreed. In case any similar or near similar work does not exist in the Contract, the rate shall be decided by the Company based on the principle of actual cost of materials, wastage, taxes, transportation, equipment, running cost, labour, supervision, overheads etc towards actual direct cost plus 12.50% (Twelve and half percent) markup thereon.
- The intent of the Specifications and Schedule of Quantities is to have items finished and complete in all respects, unless specially stated otherwise in the Schedule. This shall be understood whether or not it is specifically mentioned in the description of the item.
- The schedule of quantities as given in the SoR is indicative only and may vary up or down as per actual requirement of site conditions for which item rate shall remain unchanged.
- The Schedule of Quantities issued by the Company with the tender documents shall be deemed to be approximate and no liability shall attach to them for inaccuracies or errors therein.
- **Schedule of Completion :**

Time is the essence of this Contract. The Contractor will have to commence the work at site within 7 days from the date of LOI and complete the entire work satisfactorily within **120 days** as per mutually agreed schedule. In case the contractor fails to mobilise the resources to site for commencing the work and complete the works as per mutually agreed time line for each phase; it is assumed that the contractor is not interested in executing the work and hence the said contract stands cancelled automatically. In such case, the Company is at the liberty to off load the work to other suitable agencies at your cost and risk.

#### **4. Liquidated Damage For Delay:**

In case of any delay in completion of work beyond the above schedule, LD @ ½ % (half percent) of the total contract value of the work for every week or part thereof for the first 4 weeks of delay and thereafter 1% (one percent) total contract value for every week, subject to a maximum of 5% (five percent) of the total Contract value on uninterrupted working condition.

#### **5. Obligations of the Bank**

##### **5.1 Electricity & Water**

Branch will provide electricity/water at the Site to Contractor for construction work at a single point (within 500 metres from place of work) free of cost. Necessary distribution shall be done by Contractor at their own cost. The location to be mutually agreed.

#### **3. Statutory and other Obligations:**

The Contractor shall and ensure that he and his sub-Contractor and nominated Contractor do strictly comply with all applicable statutory laws and orders of competent authorities and court and will specifically comply with the followings :

Labour Rules etc.

In respect of all labourers directly or indirectly employed in the works, the Contractor shall comply with all legislation and rules of State and/or Central Government or other local authority governing the protection of health, sanitary arrangements, wages, welfare and safety applicable for labour employed. The Minimum Wages Act, 1948, Workmen's Compensation Act, 1923, Contract Labour (Regulation and Abolition) Act 1970 and other obligations of applicable statutes with regard to fair wages, welfare amenities and safety measures. The Contractor shall furnish to the Company necessary license under the Contract Labour (Regulation and Abolition) Act, 1970. The Contractor shall be solely liable for any default or non-compliance of the same.

Reporting of Accidents to the Authorities

The Contractor shall be responsible for the safety of all employees and/or workmen employed or engaged by him including those of the Company and the sub-Contractor/nominated Contractor on and in connection with the Works and shall report to the Company and other local authorities concerned all cases of serious accident howsoever caused and wherever occurring and render immediately all possible help to the victims of the accidents.

Accident or Injury to Workmen

The Contractor shall be solely liable for any accident or injury that may happen to any of his personnel engaged in connection with the construction, erection & commissioning work according to his Contract. HIL shall not be liable for, or in respect of, any damage or compensation payable at all in respect of, or in consequence of, any accident or injury to any personnel in the employment of the Contractor and the Contractor shall indemnify and keep indemnified HIL against all such claims, damages, compensations and proceedings

**Unsatisfactory Work**

No work will be paid for unless found satisfactory and carried out strictly in accordance with the Specifications by the Company and certified by the Engineer to such effect. Should, through inadvertence, bad work be certified, the Engineer shall be competent to strike the same out of the account and recover the value at any time prior to or at the time of granting the final certificate by deduction from the final payment or otherwise.

Any work, executed not according to Specifications or with imperfect or unskilled workmanship shall be removed or reconstructed by the Contractor at his cost on receipt of instructions in writing from the Company's Engineer. Should the Contractor fail to take action within 7 days of receipt of such notice, the Engineer shall be entitled to remove or reconstruct such work at the risk and cost of the Contractor, and the Company shall recover the amount from any amount of money due to the Contractor/security deposit on account of such work.

Should the Engineer consider that the work although not executed in strict accordance with the Specifications may be allowed to stand, he may at his discretion certify payment against such work at such reduced rates as he may consider reasonable.

Examination of any covered work may on occasion be required by the Engineer and such work shall be uncovered by the Contractor. The Company shall not pay for covering such work again unless it is found that the work uncovered has been executed fully to the Company's satisfaction

## **26. Defective Liability / Warranty:**

The entire equipment shall be guaranteed to be free from defective workmanship or materials and any defects that may appear within 12 months from the date of issue of completion certificate for the entire work, which in the opinion of the Employer have arisen from bad workmanship or materials, shall upon intimation by the Employer, be made good by the Contractor at his own cost within the time specified. During the said period of 12 months, the contractor (successful tenderer) shall make periodical inspection of the working of the lifts free of charge at least once a month or earlier, if required, and attend to the lubrication of the various parts and such other service that may be required of him. All routine maintenance/service calls during the defects liability period will also have to be attended in a prompt manner. The warranty period shall be 12 months from the date of handing over of the last lift to the Bank.

### **Comprehensive Annual Maintenance Contract (AMC)**

As per item in Bill of Quantity in the Indicative Price Bid, tenderers have to quote rates in rupees after defects liability period. The rate should be for all inclusive Comprehensive Maintenance Contract inclusive of all material, labour and any other costs. The quoted AMC rate should be inclusive of all duties, levies, taxes, costs like transportation, handling, insurance etc. AMC will commence after the end of Defects Liability Period. AMC RATES ARE TO BE QUOTED EXCLUSIVE OF GST WHICH WILL BE ADMITTED ADDITIONALLY AT PREVALENT RATES AS ADMISSIBLE. The AMC amount shall be considered for determining L-1 bidder.

After the defects liability period, vendor will have to submit to the Bank a Bank Guarantee from a scheduled Bank equal to 2% of the cost of lift(s) as per work order in Bank approved format to cover the liability of the vendor to provide AMC services in an uninterrupted manner as per tender terms and conditions for at least 19 years after defects liability period. The Guarantee will have to be kept alive with timely renewals/re issue for a period starting

end of defects liability period and ending at the end of 19 years after defect liability period.

**Scope of works during AMC**

The scope of work shall include but not be limited to the following:

- (i) Routine servicing/ troubleshooting/ setting/ adjustments/ cleaning/ lubrication/ checking of safeties etc. to ensure smooth and trouble free working of the lifts.
- (ii) Repairs/ replacement to the lifts including re-loading software etc. in the event of any breakdown including replacement of spares/ components/ sub-system/ cards/ motors/ ropes/plates and any other component, part or whole, which may need replacement/ repairs.
- (iii) Import of spares and stocking them shall be responsibility of the tenderer. Non availability of spares/ components will not be accepted as a reason for waiving of penalty towards delay in rendering prompt service.
- (iv) All manufacturers preventive maintenance schedules/ replacement periodicity of components like ropes, electrical/electronics parts including checking of safety devices, protections like rope slip, load testing etc. shall be strictly followed as per the manufacturer's periodicity or as required in addition to the scope of maintenance indicated above.
- (v) The scope of maintenance in addition to periodic maintenance will also include attending to /any number of breakdown calls.
- (vi) During the currency of the Annual Maintenance Service Contract, all care shall be taken so that the downtime of any lift is kept minimum and the lift shall be attended within 3 hours of receiving the complaint. In case, the lift remains under breakdown for more than a day, then a penalty equivalent to 4 times the daily rate of service contract shall be recovered from the payment due to the contractor.

They shall also ensure that the required spares etc. for proper maintenance are readily available with them for the complete life span of the lift.

The payment towards AMC charges will be made on two equal half yearly installments after satisfactory completion of the service for the period installment becoming due after six months of service and the second after twelve months of service.

**SAFETY MEASURES AT SITE**

1. All personnel at site should be provided with Helmets and Safety Boots with some Identification Mark. Visitors also should be provided with Helmets. It should be ensured that these are used properly.
2. First Aid Box should be kept at site with all requisite materials.
3. No one should be allowed to inspect / work at a height without Safety Belt.
4. Suitable scaffolds should be provided for workmen for all Works that cannot safely be done from the ground, or from solid construction except such short period Work as can be done safely from ladders. When a ladder is used an extra Mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well as suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal and 1 vertical).
5. Scaffolding or staging more than 3.5 meters above the ground or floors, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 Meter high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
6. Working platforms, Gangways, and Stairways should be so constructed that they do not sag unduly or unequally, and if the height of the platform or the Gangway or the Stairway is more than 3-5 Meters above ground level or floor level they should be closely boarded, should have adequate width and should be suitably fenced, as described.
7. Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 metre.
8. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 Meters in length while the width between side rails in rung ladder shall in no case be less than 30cms for ladder up to and including Meters in length. For longer ladders this width should be increased at least 6mm for each additional 30 cm. Uniform step spacing shall not exceed 30 cm.
9. Adequate precautions shall be taken to prevent danger from electrical equipment. For electrical on line works gloves, rubber mats, and rubber shoes shall be used.
10. All trenches 1.2 Meters or more in depth shall at all times be supplied with at least one ladder for each 30 Meters length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 1 Meter above the surface of the ground. The sides of the trenches, which are 1.5 Meters or more in depth shall be stepped back to give suitable slope, or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 Meters of the edge of the trench or half of the depth of the trench whichever is more cuttings shall be done from top to bottom. Under no circumstances undermining or under cutting shall be done.
11. Before any demolition work is commenced and also during the process of the work :-
  - a) All roads and open areas adjacent to the Work Site shall either be closed or suitably protected;
  - b) No electrical cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.



- c) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so over-loaded with debris or materials as to render it unsafe.
  - d) All necessary personal safety equipment as considered adequate by the Site Engineer should be kept available for the use of the persons employed on the Site and maintained in a condition suitable for immediate use; and the Contractor should take adequate steps to ensure proper use of equipment by those concerned.
  - e) Workers employed on mixing Asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
  - f) Those engaged in white washing and mixing or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.
  - g) Those engaged in welding works shall be provided with Welder's protective eye-shields.
  - h) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
  - i) When workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that the manhole covers are opened and are ventilated at least for an hour before the workers are allowed to get into the manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals and boards to prevent accident to the Public.
12. Use of hoisting machines and tackle including their attachments, anchorage and support shall conform to the following standard or conditions:
- a) These shall be of good mechanical construction, sound material and adequate strength and free from patent defect and shall be kept in good repairs and in good working order.
  - b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.
  - c) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffold, winch or give signals to the operator.
  - d) In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or lowering or as means of suspension the safe working load shall be ascertained by adequate means.
  - e) Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of hoisting machine having a variable safe working load, each safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
  - f) Motor, Gearing, Transmission, Electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards, hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load, adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced.
  - g) When workers are employed on electrical installation, which are already energized, insulating mats, wearing apparel such as gloves, sleeves, and boots as may be necessary should be provided. The workers should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.
- All scaffolds, ladders and other safety devices, mentioned or described herein shall be

maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.

**Details of Insurance Policies**

Type of Policies	Name of Insurance	Amount (Rs.)	Policy No.	Validity
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CAR Policy including  
3<sup>rd</sup> Party Liability

Workmen's Compensation

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Remarks :

1. This is only on-account payment and is not to be interpreted either as approval of work materials brought or affixed at site or for that matter approval of any sort
2. The quantum of work done and materials delivered at site have been certified by .....
3. Should you wish to audit such work, kindly contract the undersigned and oblige.

Architects

**PROFORMA OF HINDRANCE REGISTER**

Name of Work : \_\_\_\_\_ Date of state of work : \_\_\_\_\_  
Name of Contractor : \_\_\_\_\_ Period of completion : \_\_\_\_\_  
Agreement No. : \_\_\_\_\_ Date of completion : \_\_\_\_\_

Sl. No.	Nature of hindrance	Date of occurrence of hindrance	Date of which hindrance was removed	Period or hindrance	Signature SE/PE	Remarks
1	2	3	4	5	6	7

SE = Site Engineer

PE = Project Engineer

Place : \_\_\_\_\_

Date : \_\_\_\_\_

**PROFORMA OF REGISTER OF MATERIAL AT SITE ACCOUNT**

Name of Work : Name of Article :

Name of Contractor : Estimated Requirement :

Agreement No. : Issue Rate :

Sl. No.	Date of Receipt	Received from / issued to (with)	Receipt	Issue	Balance	Initials of Contractor	Initials of Bank's / Architect's Representative	Remarks

**PROFORMA FOR APPLICATION BY CONTRACTOR FOR EXTENSION OF TIME**

1.	Name of the Contractor			
2.	Name of the works as given in the Agreement			
3.	Agreement WO			
4.	Tender Amount			
5.	Date of Commencement of Work			
6.	Period allowed for completion as per agreement			
7.	Date of completion as per agreement			
8.	Period for which extension of time has been given			
		<u>Date</u>	<u>Month</u>	<u>Year</u>
	(a) 1st extension vide Bank's Letter No.			
	(b) 2nd extension vide Bank's Letter No.			
	(c) 3rd extension vide Bank's Letter No.			
9.	Reasons for which extensions have been previously given ( copies of the previous applications should be attached )			
10.	Period for which extension is applied for and the reasons thereof including hindrances time for extra work assigned , if any etc.			

Signature of Contractor

**TECHNICAL SPECIFICATION****1.0 Scope**

This section deals with general technical requirements of lift installation, its components, safety devices various type of controls and methods of operation. The selection of a particular type of control and method of operation will be guided by the requirements in individual case such as nature of building, usage, occupancy, traffic pattern etc. and has to be decided in individual cases.

**2.0 Drive Machinery****2.1 Electric Supply**

Three phase, 50 c/s, 415 V electric supply shall be made available. The entire lift equipment should be suitable for operation at +10% to -20% of the rated supply voltage.

**2.2 Gearless machine**

The gearless machine shall consist of a motor, traction sheave and break-drum or brake disc completely aligned on a single shaft. Gearless machine shall be A.C. gearless with VVVF drive.

**2.3 Geared machine**

The lift machine shall be of worm gear reduction type with motor, brake, worm gearing and driving sheave and suitable for type of control specified.

**2.4 Sheaves**

Sheaves and pulleys shall be of hard alloy, cast iron, SG iron or steel and free from cracks, sand holes and other defects. They shall have machined rope grooves. The traction sheave shall be grooved to produce proper traction and shall be sufficient dimension to provide for wear in the groove. The deflector sheave shall be grooved so as to provide a smooth bed for the rope. The deflector or secondary sheave assemblies where used shall be mounted in proper alignment with the traction sheave. Such deflector sheaves shall have grooves larger than rope diameter as specified in clause 8 of IS 14665 (Part-4 Sec 3): 2000. The size of all the sheaves shall be in accordance with clause 8.4 of IS 14665 (Part-4 Sec3) : 2000. Wherever necessary suitable protective guards may be provided.

**2.5 Shaft Keys**

Shaft which supports sheaves, gears, coupling and other members which transmit torque shall be provided with tight fittings keys of sufficient strength and quality.

**2.6 Brake**

The lift drive machinery shall be provided with an electromagnetic brake or motor operated brake normally applied by means of springs in compression when the operating device is in off position. The brake shall be suitably curved over the brake drum or brake disc and provided with fire proof friction lining. The operation of brake shall be smooth, gradual and with minimum noise. The brake shall be designed to be of sufficient size and strength to stop and hold the car at rest with rated load. The brake should be capable of operation automatically by the various safety devices current failure and by the normal stopping of the car. The brake shall be released electrically. It shall also be possible to release the brake manually, such released requiring the permanent application of manual force so as to move the lift car in short stops. For this purpose suitable brake release equipment wherever necessary shall be supplied with each lift installation and the same shall be kept in safe custody to prevent misuse.

**2.6.1 Hand winding wheel or handle:**

At times of lift stoppage due to any reasons, it shall be possible to move the lift car to the nearest landing manually. The manual operation shall be by means of winding wheel or handle mounted on the end of the motor shaft. The up or down direction of the movement of the car should be clearly marked on the motor or at suitable location. A wearing plate written in bold signal red colour advising the maintenance staff to switch off the mains supply before releasing the brake and operating the wheel is to be prominently displayed.

**2.7 Bearings**

Bearings shall be either of anti-friction metal sleeve type with oil reservoirs, self, lubrication, oil gauges, capped filler openings and drains of the ball roller or sintered type subject to oil flood lubrication or grease lubrication.

Grease lubricated bearings shall have grease gun connections and drain plugs. The bearings and lubricant reservoirs shall be dust tight and shall incorporate effective seals to prevent leakage. The outer end of the bearings shall be closed with a removable oil tight plate. Thrust bearings shall be of the ball or roller type and shall have two sets of balls or rollers arranged to minimize backlash for efficient working.

**3.0 Type of controls****3.1 Single speed alternating current control**

A control for a driving machine induction motor which is arranged to run at a single speed.

**3.2 Variable Voltage Variable Frequency**

Incoming mains AC power is first rectified to DC and then inverted to provide controlled AC current to the elevator drive. Precision monitoring of motor speed and car direction, position and load enable the pulse width of the AC power supplied to the motor to be adjusted to ensure that elevator speed is maintained very accurately to an ideal profile.

Thus in VVVF controls pulse width modulation control of AC motors has following advantages compared with the older servo controlled elevators :-

- a) Total control at all stages of the motion cycle.
- b) A consistent fully adjustable smooth ride.
- c) Better levelling accuracy under all conditions.
- d) A higher power factor
- e) Lower starting current.
- f) Energy saving through reduced power consumption.

**4.0 Installation aspects:**

**4.1 Installation in Machine Room**—Lift Machine Room to accommodate the drive machinery, controller, etc., shall as far as possible be located on top of the lift shaft. The layout of equipment there should be such as to allow free movement of maintenance personnel inside. Machine room shall not be used for storage purpose.

**4.1.1 Air Conditioning of Machine Rooms**- Machine Rooms shall either be Air- Conditioned or non air conditioned according to the requirement. Heat Load Details shall be furnished by the Elevator Contractor.

**4.1.2 Vibration, Isolation**— Vibration and isolation arrangement shall be provided to prevent transmission of vibration to the building and structure.

**4.2 General Illumination of Lift well**

Suitable light points shall be provided in the lift well at a spacing of not more than 10 meters in between, starting at the ground floor. All the points should be group controlled from the M/C room. The wiring shall be carried out in surface conduit as per CPWD General Specification. One socket outlet shall be provided in the shaft for use by maintenance

personnel at a level slightly above the ground floor landing.

## **5.0 Guide rails**

Guide rails shall be in accordance with clause 3 of IS 14665 (Part 4–Sec 2) 2000. Only machined guide rails shall be permitted for cars for passengers and hospital lifts. Formed sheet metal rails shall be used up to speeds of 1.75mps for counter weight applications. In the case of goods lifts, unmachined guides rails shall be permitted for the counterweight for all speeds and for the cars only up to a speed of 0.5m/sec.

The guide rails shall be continuous throughout the entire travel and shall withstand without any deformation the action of safety gear with a fully loaded car.

Generally the guide rails shall be supported by brackets secured to the hoist way frame at each floor. The rails shall be securely fastened to the brackets or other supports by approved heavy rail clamps. All necessary guide rails packing or additional supports shall be provided to prevent guide rail deflection and stresses exceeding the prescribed limits. The stresses on the guide rail due to the horizontal forces imposed on it during loading, unloading and running calculated without impact, shall not exceed 1100 kg/sq.cm based upon the class of loading and the deflection shall not exceed 5mm. the guide rail brackets, their fastenings and supports shall be capable of resisting the horizontal forces mentioned above, with the total deflection at the point of support not in excess of 3mm.

Guide rails shall extend from pit floor to the underside of concrete slabs or grouting at top of the lift well. They shall be erected in plumb and parallel with a maximum deviation of 3mm. All shimming required shall be of metal securely held in place. Jointing plates shall be so located as not to interfere with supporting clamps and brackets. The bolts shall be used with spring lock washers. The guide rail anchorage pit floor must be made without puncturing the water proofing. The expansion joints in the guide rails shall be so designed as to avoid jerks in the lift car. Machined guide rails shall have finished surfaces which shall be coated with corrosion preventive compound which shall be maintained till the commissioning of the installation. Before the car is placed in operation, the preventive coating shall be removed and the guide rails thoroughly cleaned and smoothed.

## **6.0 Lift Car**

### **6.1 Car Frame**

The car frame shall be in accordance with clause-4 of IS 14665 (Part 4-Sec 3) : 2001 made of sheet Steel of rigid construction to withstand without permanent deformation the operation of safety gear. The car shall be so mounted on the frame that vibration and noise transmitted to the passengers inside is minimized.

### **6.2 Car Platform**

6.2.1 The car platform shall be of framed construction and designed on the basis of rated load evenly distributed. The dimensions shall conform to IS:14665 (Part-1) 2000 unless otherwise specified. The flooring shall be smooth and of anti-skid surface. The flooring for goods lift shall be strong enough to take the rated load without any deformation or damage.

6.2.2 A load plate along with overload alarm, giving the rated load and permissible maximum number of passengers should be fitted in each lift car in a conspicuous position.

### **6.3 Car body**

The car shall be enclosed on all sides by a metallic enclosure. The enclosure including the door shall withstand without deformation a thrust of 35 Kg applied normally at any point and as per IS 14665 (Part 4/ Sec 3)-2001. Ventilation openings if specified shall be as per IS 14665 (Part4/Sec 3) - 2001.

6.3.1 Stretcher guards/ trolley guards made of PVC/Rubber extrusion housed in a stainless steel



beading shall be fitted at suitable level (s) to rear/ side panels for bed lifts/ goods lifts.

6.3.2 Lift Car door shall have a fire rating of one hour.

6.3.3 Grounding switch (es), at ground floor level, shall be provided on all the lifts to enable the fire service to ground the lifts.

**6.4 Car roof**

The roof of the car shall be capable of supporting a weight of at least 140 Kg and as per IS 14665 (Part-4 – Sec3) : 2001.

**6.5 Car Thresholds**

Car entrance shall be provided with metal thresholds having a grooved surface. Thresholds for lifts having horizontally sliding car doors or gates shall have machined or extruded guide grooves.

**6.6 Toe Guard Aprons**

The toe guard apron of gauge not less than 1.6mm of Galvanized sheet steel may be provided extending at least 15mm beyond entrance jambs at each side. The guards shall have a straight vertical face extending below the level of the finished car floor and not less than the depth of the leveling zone plus 7.5mm. The bottom of guard shall extend 700mm for lifts up to speed of 1.5 mps & 1000 mm for lifts above speed of 1.5 mps below vertical face and beveled at 15° angle from the vertical. It shall be seamed to car platform construction and be reinforced and braced.

**6.7 Clearance**

The clearance between the top of the car and the soffit of the lift shaft roof, bottom of the car and the pit floor, the buffers etc., and the clearance between the car and the lift well, between the car and the landing sill, between two lift cars in the same shaft etc. shall be provided as per IS 14665 (Part 1, 2 & 4) and relevant lift rules mentioned in Appendix-I.

**6.8 Car Apron, Landing thresholds and Sills**

An apron shall be fitted to the car platform such that no dangerous gap exist at any time when the landing door is opening, Thresholds and sill plates shall be provided at the landings also. The distance between landing sill and the sill on car platform shall not be more than 30mm.

**6.9 Inter-communication system**

6.9.1 Though para 8.4.3 of IS 14665 (Part 2/ sec 1) : 2000 recommends for provision of either an emergency signal or a telephone inside the car but as a general experience, it is seen that over a period of time these devices become inoperative due to one reasons or the other. Therefore, in order to have at least one device of communication functioning at all the times, an alternative arrangement in terms of provision of both i.e. telephone with minimum three connections - one at the operator's room and other at guard room and the emergency signal with re-chargeable batteries as source of supply shall be made in the lift cars.

6.9.2 The device used for emergency signals should incorporate a feature that gives immediate feed back to the car passengers that the device has worked properly and the signal has been passed on the intended agency. This shall be achieved by pressing of bottom from

control room which shall give audio signal to the passengers in the car.

6.9.3 Provision of group indicator panel in the control room shall be made to indicate working of lifts.

6.9.4 **Emergency Power Supply for Lift Car**

This shall include suitable secondary battery with trickle/ boost charge arrangement and inverter power pack with necessary contactors for supplying the light fixtures in the lift car. The same battery shall also feed the alarm bell and communication equipment.

6.10 **Ratings and Instructions**

Inside the lift car, the lift supplier shall also provide a stainless steel metallic plate indicating the rated load and detailed instructions for the passengers. This shall be mounted at a suitable place.

6.11 **Lift Car Interior Finish**

The side, rear and fascia panel shall be of scratch free stainless steel sheet. The flooring shall be with Granite Stone. The false ceiling in the lift car shall be crafted from mild steel powder coated to suitable colour with CFL lamps and fan diffuser (s) in different colour.

6.11.1 **Operating Panel Inside the car**

The car operating panel shall be of metal, flush mounted and duly finished to match the car interior décor and shall contain all the devices as may be specified depending upon the type of operation required. In addition separate illuminated panel for indicating the floor and direction may be provided on the top or the door way. All switches shall be fade proof and the devices shall be of suitable quality.

Each device and its operating position shall be legible fade proof and marked.

7.0 **Car and landing entrances**

The car and landing doors shall be flush type Vandal Resistant Stainless steel only for power operation. The flush type may further be of single sliding, centre opening. Power operated car and landing doors shall be so designed as not to injure any person during their closure by means of provision of a safety pressure switch which shall cause the doors to reopen on the slightest pressure. In case of power operated doors, it shall be possible on power failure, to open them from the car side. The door opening and closing shall be accomplished smoothly and quickly without undue noise, vibration and shock and their movements shall be cushioned and checked at both limits.

7.1 **Car doors**

7.1.1 The car door shall be hung from the top M.S. fabricated track and means shall be provided to prevent the door from jumping off the track. The doors shall be provided with two point suspension sheave type hangers suitable for the type of door operation specified. The hangers shall be securely fastened on bearings mounted on a malleable iron or steel bracket. Arrangement shall be provided for vertical and lateral adjustment of car doors. The sheaves shall move on M.S. fabricated track so shaped as to permit free movement of sheaves with regard to vertical adjustment of sheave bracket or housing.

The car door shall be centre opening horizontal sliding stainless steel scratch proof (moon rock finish) for office, residential & goods lift applications whereas telescopic horizontal sliding stainless scratch proof surface (moon rock finish).

7.1.2 A potential cause of accidents could be the attempts made to open the landing door lock of lower floor in case the car stops away from floor level due to power failure. Since the car door can be opened in case of power failure so as to improve the ventilation and avoid

claustrophobic situations etc. As outlined in IS 14665 (Part 2/Sec 1) : 2000 para 10.9.1, there is a tendency among trapped passengers to make attempts to open any accessible landing door. This attempt in panic may result in accidental fall into the lift pit. In order to ensure that the trapped passengers do not attempt landing door, the electromechanical latch should be so designed that it is inaccessible or invisible to the passenger in the car.

**7.1.3** In order to avoid accidental closure of doors while boarding or alighting the car, tamper proof infrared curtain covering almost the entire height of the door should be provided in the lift doors.

## **8.0 Levelling**

All lifts shall be incorporated with suitable floor levelling devices. In case of lifts with automatic power operated doors and with A.C. VVVF controller a separate level device for automatic levelling with levelling accuracy of + 5mm shall be incorporated.

## **9.0 Counter Weight**

The counter weight for lift cars shall be in accordance with clause 6 of IS 14665 (Part 4-Sec-3) : 2001 and shall be designed to balance the weight of empty lift car plus approximately 50 percent of the rated load. It shall consist of cast sections firmly secured in relative movement by at least two numbers steel tie rods having lock nuts/split pins at each end and passing through each section and Housed in a rigid steel frame work. Cracked and broken sub weights shall not be accepted.

### **9.1 Counter Weight Guards**

Stainless Steel Guards shall be provided in the lift pit to a suitable height above the pit floor to eliminate the possibility of injuries to the maintenance personnel.

## **10.0 Guide shoes**

Two numbers of guide shoes at the top and two numbers at the bottom shall be provided on the lift car and counter-weight.

### **10.1 Type of Shoes**

10.1.1 For passengers lift and freight -cum-passengers lifts

(a) For speed upto 1.5mps sliding guide shoes shall be used. Sliding guide shoes for car shall be always flexible and for counterweight solid guide shoes can be used upto 1.0mps.

(b) For speeds more than 1.5mps roller guide shoes shall be used for car and counterweight.

10.1.2 For Freight lifts solid shoes can be used.

### **10.2 Flexible type/solid type sliding guide shoes**

The car shall be provide with solid or spring loaded swiveling guide shoes with renewable liners, where the lift car speeds are upto and including 1 MPS. The cars with speeds beyond 1 MPS shall be provided with spring loaded guide shoes with renewable liners or the guide shoes shall be of roller type.

### **10.3 Roller type guide shoes**

Each roller type shoe shall be of an approved type consisting of rollers assembled on a substantial metal base and mounted as to provide continuous contact of all rollers with the corresponding guide rail surfaces under all conditions of load and operation. The rollers shall run on the three finished guide rail surfaces and shall operate quietly.

### 10.3.1 Mounting of guide shoes

Guide shoes shall be provided with adjustable mountings & shall be rigidly secured in accurate alignment at the top and bottom on each side of the car sling and counter weight frame construction. When oil buffers attached to the bottom of the counter weight are used, additional guide shoe shall be provided on each side of the buffer same. The design of guide shoes and car safety devices shall be coordinated so as to ensure the provision and installation of equipment with clearance specified in Clause 2.10 (VIII) of this Chapter.

### 11.0 Lift Ropes- IS 14665 (part 4/Sec 8)-2001/ Coated Steel Belt

Round strand steel wires ropes made from steel wire ropes having a tensile strength not less than 12.5 tonnes/cm<sup>2</sup> and of good flexibility shall be used for lift.

Lubrications between the strands shall be achieved by providing impregnated hemp core. The lift ropes shall conform to IS 14665-(Part-4-Sec. 8):2001. The minimum diameter of rope for cars and counter weight of passenger and goods lift shall be 8mm, and shall conform to IS 14665 (part 4/Sec.8) including all amendments. No. of Ropes Specially Manufactured for Elevator use shall be employed for suspension of Elevator Car & Counterweight as per IS 14665. At least three Steel Wire Ropes specifically manufactured for Elevator use, shall be employed for the suspension of Elevator car & counter weight. In place of hoist rope, coated steel belts, meeting required necessary specifications/standards, and nessary safety system like detection of any breakage/ deterioration of steel member is acceptable

Rope speed of Passenger & goods lifts (m/s)	Factor of safety
0.5 or less	8
exceeding 0.5 to 1.0	8.6
exceeding 1.0 to 2.0	10
exceeding 2.0 to 3.5	11
exceeding 3.5	12

### 11.1 Rope fastenings

The ends of lift ropes shall be properly secured to the car and counter weight hitch plates as the case may be with adjustable rope shackles having individual tapers babbitt sockets, or any other suitable arrangement. Each lift rope shackle shall be fitted with a suitable shackle spring, seat washer, shackle nut & lock & shackle nut split pin.

### 11.2 Guards for Lift Ropes

Where lift ropes run round a sheave or sheaves on the car and/ or counterweight of geared/ gearless machine suitable guards shall be provided to prevent injury to maintenance personnel.

### 11.3 Number & Size of Ropes

The contractor must indicate the number and size of lift ropes and governor ropes proposed to be used, their origin, type, ultimate Tensile strength and factor of safety. The contractor should furnish certificate or ropes from the rope manufacturers issued by competent authority.

11.4 Coated steel belts meeting required standards and safety requirements are also acceptable in place of ropes. Required diagnostic systems to detect faults in the belt will have to be provided with the lift system in case belts are being used.

### 12.0 Safety Equipments

Every lift installation shall necessarily be provided with the following safety features:

- 12.1 The safety gear shall be provided in accordance with IS 14665 (Part-4- Sec.4):2001, each type of car safety shall be actuated by a speed governor.
- 12.2 **Governor** – the car safety shall be operated by speed governor located overhead and driven by governor rope suitably connected to the car and mounted on its pulleys. The rope shall be maintained in tension by means of weighted or spring loaded tension sheaves located in the pit. Governor shall be provided for lifts with a travel of more than 5.5 meters. The governor rope shall be not less than 6mm in dia and shall be made of steel or phosphor bronze. These shall be in accordance with IS 14665 (Part4/sec-4):2001. Governor for car safety gears shall be adjusted to actuate the safety gear at the following speeds :-
  - (a) For rated speeds upto 1 m/s maximum governor tripping speed shall be either 140 percent of rated speed or 0.88 m/s, which ever is higher. For rated speed above 1 m/s maximum governor tripping speed shall be 115 percent of the rated speed plus 0.25 m/s.
  - (b) Minimum governor tripping speed shall be 115 percent of the rated speed.
- 12.2.1 The governor shall be of “V” groove wheel design and only wheel is stopped to actuate the car safety upon a pre-determined over speed downward without damaging the rope.
- 12.3. The governor, rope and sheave shall be so located so as to minimize danger of accidental injury to the equipment.
  - 12.3.1. The governor sheave and tension sheave shall be according to Clause 2.4 and the Sheave bearing shall be according to Clause 2.7 of this Chapter.
  - 12.3.2 The requirements for field test on car safety and governor and for drop tests to sliding type car safety shall be as specified in section IV of this specifications.
- 12.4 **Terminal limit switches**
  - 12.4.1 Terminal switches  
These shall stop the car automatically at terminal floors within the top and bottom Permissible over travel. They shall act independently of the operating devices, the Ultimate limits switches and the buffers. They shall be in accordance with clause 8 of IS: 14665 (Part 3-Sec 1) : 2000.
  - 12.4.2 Terminal stopping devices located in shaft or in the car and operated by cams shall be fitted with rollers having a rubber or other approved composition to provide silent operation when actuated by the cam. When the lift car cross head is 60cm from the nearest obstruction above it, no projection on the car shall strike any part of the overhead structure.
  - 12.4.3 Lifts with speeds over 1.25 meters/ second shall have the normal terminal stopping device located on the car or on the guide rails or in the machine room.
- 12.5 **Ultimate Terminal Switches**  
These shall be provided in accordance with the statutory requirements and standing practices. When provided these shall arrange to stop the car automatically within top and

bottom clearances independently of the normal terminal switches but with the buffer operative. These shall be in accordance with clause 8 of IS : 14665 (Part 3/Sec 1)-2000.

#### 12.6 **Buffers – (IS 14665 (Part 4/Sec 1) – 2001)**

Buffers shall be oil resistant rubber pad type for speeds upto 0.25 mps and spring/oil type for speeds upto 1.5 mps and only oil type for speeds higher than 1.5 mps.

Buffers shall be suitable for installation in the space available. Buffer anchorage at pit floors shall be installed avoiding puncturing of water proofing.

The partial compression of spring return oil buffers when the car is in level with terminal landing will not be acceptable.

All buffers shall be tested at manufacturers works and a copy of the test report shall be submitted.

When the lift car rests on fully compressed buffers there shall be at least 60 cms clearance between the lowest point in its car frame and any obstruction in the pit exclusive of buffers and their supports. Similarly when the lift car cross head is 60 cm from the nearest obstruction above it, no projection on the car shall strike any part of the overhead structure.

The contractor must indicate the name of buffer manufacturers, buffer stroke & certified maximum loads.

#### 12.7 **Door Locks**

Electro-mechanical door lock shall be provided for all the landing doors and they shall be such that the doors cannot open unless the car is at rest at the particular landing. It shall not be possible to move the car unless all the landing doors and the car door are closed and locked. This requirement however does not apply when the lift car is provided with automatic leveling devices and in such cases, it shall be permitted to move the car with both the doors open in the leveling zone for the purpose of leveling.

All the locks and contacts shall conform to IS : 14665 (Part 1/Sec 6)-2001 shall be Positive and pass the prescribed endurance and reliability test from a recognized testing laboratory. They shall be so located as to be inaccessible to un-authorized Personnel. The electromechanical latch should be so designed that it is inaccessible or invisible to the passengers in the car.

#### 12.8 **Other Safety Devices**

Besides these safety devices mentioned above, motor operated electro-mechanical brake (Clause 1.6) counter-weight guards ( Clause 8.1) alarm bell, emergency door lock release operating key and associated safety and other requirements shall also be included.

### 13.0 **Lift Operations**

#### 13.1 **Automatic- cum-attendant operation**

13.1.1 Single Automatic Push Button with/ without attendant – The operating devices for this operation shall incorporate in the car control panel, car buttons corresponding to the various landings served and single landing button at each landing, all electrically connected to controller governing floor selection, direction of travel, acceleration, retardation etc.

this system shall be so arranged that when the car is not in use, on pressing a landing call button the car shall start automatically provided all the doors are closed. During the movement of the car and also when car stops at floor landing, other landing call buttons are in-operative for a predetermined time. The pressing of a car button shall automatically start the car and send it to the desired landing. In all the cases, the starting of the car is contingent on the establishment of landing door and car inter-lock circuits. To indicate the availability, or 'in use' light shall be placed in the landing call button panel. When light shall

be 'OFF' the passenger shall be able to call the car. In case of manual operated door if the lift is standing at any landing with doors open (when not in use), the pressing of the landing call button shall ring a bell, fitted at the top of car to attract the attention of the people soliciting their help for closing the lift door if any one of the them happens to be near the lift.

In case of power operated doors, the landing and car doors shall be arranged to open automatically when the car is parked at landing after all the calls are served and the lift is parked at any landing. The doors can remain open or alternatively if desired, the car shall be arranged to close after a pre-determined time unless closing is prevented or interpreted by the car doors re-opening device or the door open button.

The lift shall be suitable for dual operation with or without attendant by the provision of key operated transfer switch indicating 'attendant' and 'automatic' positions. During 'attendant' operations the landing call shall be disconnected from the control system and shall be connected to an annunciator in the lift car. The attendant shall then operate the car to answer the registered calls. This operation is recommended for single speed control lift for low rising building having a single lift installation.

### 13.1.2 **Simplex Selective-Collective operative with/without attendant**

Automatic operation by means of one button in the car for each landing level served and by up and down buttons at the landings, wherein all stops registered by the momentary actuation of the car made as defined under non-selective Automatic Operation but where in the stops registered by the momentary actuation of the landing buttons are made in the order in which the landings are reached in each direction of travel (irrespective of the sequence in which the buttons have been actuated). With this type of operation, all 'up' landing calls are answered when the car is traveling in the up direction and all 'down' landing calls are answered when the car is traveling in the down direction, except in the case of the uppermost or lowermost calls which are answered as soon as they are reached in-respective of the direction of travel of the car.

### 13.1.3 **Collective selective operation with / without attendant**

The control system for this operation shall be similar to the one described under simplex selective collective operation except that in this system there shall be more than one lift cars with adjacent wells. It shall be arranged to coordinate all cars for efficient service and prevent them from answering the same calls by the provisions of two sets of landing call button fixtures one each between the two adjacent cars. It shall automatically assign each call to the car that will be in the best position to answer promptly. The system shall be so arranged that when the cars are idle, Normally two cars will be parked at the lower main landing with its doors closed or open and the other two cars shall be parked with the doors closed or open to the landing where it answered its last call, and one of it shall be the one to attend to the nearest call.

Each car shall always respond to calls registered by its own car call buttons. Besides the control system shall also be arranged for independent service from inside the car.

A by pass button (non-stop button) shall also be provided inside the car to enable the attendant to by pass any landing if the car is full or if otherwise so required.

The two lifts shall be arranged with or without attendant operation and shall function as described using single car selective collective operation. When the transfer switch is in the attendant position the operation of the cars shall be identical with that described for automatic operations except that:

- a) Closing of doors and starting of cars shall be initiated by the car buttons only
- b) Buzzers and directional lights in the car are operative and
- c) Landing by pass shall be effective.

The pressing of an up or down landing call shall illuminate appropriate direction indicator in the car panel, which is to answer that call and if the doors are open shall also sound

buzzers as a signal to the attendant. If both cars are parked at the lower landing the above signals shall be given to the car which has been at the floor for longest time.

### **Automatic group supervisory control**

#### 13.2.1 General operating principle

The calls registered inside the car as well as the landings are answered in the sequence in which the floors are reached irrespective of the sequence in which the buttons have been pressed. Only one car will stop in response to any one landing call and will be the nearest car travelling in the corresponding direction of the call. While this car is stopping at this landing, the call will be automatically cancelled to prevent other cars stopping against the same call.

#### 13.2.2 Automatic selection of traffic programme

The group supervisory control continuously examines traffic conditions in the building and automatically puts into operation the programme which can best cope with the demand at any particular time. This is fully automatic and requires no supervision or attendant. To suit the traffic demand in the building, suitable traffic programmes can be selected for inclusion in this control. The following are the traffic programmes available:

- (a) Up Peak Programme,
- (b) Down Peak Programme,
- (c) Up down Interfloor Programme, and
- (d) Night Programme,

(a) Up Peak Programme:- The group supervisory control responds to the increasing influx of passengers at the main landing in the morning hours, at the start of work, by automatically switching on the up peak programme. The cars are dispatched from the main landing automatically at a pre-determined interval after the previous dispatched car. The 'Leaves First' signal is transferred instantaneously from the car dispatched to another car at the main landing. The car answers the registered calls in the natural sequence of the floors and returns directly to the main landing after last passenger has been discharged. At the main landing they are kept for a predetermined time for taking new passengers. However, a car starts its up travel the moment it becomes fully loaded, without waiting for the dispatch interval to lapse.

(b) Down Peak Programme- An intense traffic flow from the upper floors towards main landing will automatically switch on the down peak programme. The cars, when fully loaded at upper floors, travel directly to the main landing and after discharging the passenger, immediately start up to answer further down landing calls. The down landing call which has been bypassed gets a priority over other down calls, which ensured equal service to all floors.

(c) UP-down Interfloor Programme:- A steady traffic between main floor and upper floor, and between floor to floor causes automatic switching on of the Interfloor Programme. Specific cars are assigned to answer specific calls by traffic analyzer so that the calls are handled most efficiently. The cars are so well distributed that every call gets equal service with short waiting intervals.

As soon as the numbers of calls drop to occasional calls only such as at night, the cars get automatically parked in their assigned zones to give personalized service with minimum lift travel. If no calls are registered for some time the motor generator sets are automatically switched off.

(d) Night Programme:- When the traffic ceases to occasional calls only, the supervisory control automatically switches over to Night Programme. All cars remain parked at the main landing with doors closed, but are at all times ready for operation. One of the lifts has



its 'Leave first' signal lighted. On pressing of call button at the main landing, the doors of this particular lift open and the passenger can travel with the lift. The same lift also responds to landing calls from above. The moment this car leaves the main landing the 'Leave First' signal is transferred to a second lift. Further passengers entering main lobby will take this second lift. This second lift also responds to landing calls from above if one lift can no longer cope with the demand. After these lifts have answered their calls, the one reaching the main landing last will retain the 'Leave First' signal. Thereby, the service is practically confined to one lift alone and motor generator sets of the remaining lifts remain switched off. If no calls are registered for sometime, the motor generator of the stand by lift also automatically be switched off. The motor generator will start up again, the moment the call is received. The number of lifts going into action is automatically regulated to just so many as are necessary to cope with the occasional traffic surge.

In case where more than 3 lifts installed in a bank, a better utilization of these lifts can be obtained by two additional programmes to deal with heavier traffic in each direction in difficult time. These are (i) Heavier 'Up' programme (ii) Heavier (DOWN' Programme).

(i) Heavier 'UP' Programme:- This shall require the cars to make more stops in the up direction, necessitating more time for the up travel. For this purpose the automatic traffic analyzer shall dispatch cars from both terminal at automatically adjusted time intervals so that the car are equally spaced, thus reducing passenger waiting interval (this programme caters for the traffic which is likely to be in both directions but predominantly in the up direction e.g. immediately after the morning peak or after lunch).

(ii) Heavier 'DOWN' Programme:- This shall require the cars to make more stops in the down direction and the dispatch times shall be adjusted accordingly by the traffic analyzer.

If any of the cars in the group develops any defect it shall be automatically disconnected from the group control until it is rectified.

In the event of failure of automatic dispatch system the lifts shall function by auxiliary means to avoid any disruption of service.

Audio visual indication shall be provided to bring such failures to notice.

The lifts shall be designed for attendant operation as described under single (simplex) selective collective operation car except as follow:-

- (a)** The indicating lights in car shall be operative to inform the attendant when to start loading a car at a terminal and when to leave the terminal.
- (b)** Landing call by pass switch and car reversal switch and switches shall be effective and load weighing devices shall be inoperative.
- (c)** Call above signal shall be illuminated when ever a call is registered at a landing above the car location indicating to attendant that car is to proceed upwards. When the highest call has been answered the light shall be extinguished indicating to the attendant that when the car is started it will proceed downward.

## **14.0 Controlling Equipment**

The movement of the car shall be electrically controlled by means of a controller located in the machine room.

### **14.1 Control Circuits**

The control circuit shall be designed to the type of lift specified for safety operation. It shall not be possible to start the car unless all the car and landing doors are fully closed and landing doors locked. The circuit shall have an independent fuse protection for fault and over loads and be arranged so that earth fault or an open circuit shall not create unsafe condition. The circuit shall be so arranged that for the stoppage of the car at specified landing or for actuation of a contactor by emergency switches or operation of safety gears the system shall not depend upto the completion or maintenance of an electrical circuit to cut off power supply and apply the breaks. This requirement is not applicable to dynamic braking and speed control devices.

**14.2 Terminal Boards**

All wiring for external control circuits shall be brought to a terminal board with means of identification of each wire. Metallic/ plastic identification tags shall invariably be provided. All connections of wires to terminal boards shall be adequately clamped or screwed.

**14.3 Auxiliary Switches****14.3.1 Emergency stop Switches:**

On top of the lift car an emergency stop switch shall be provided for use by maintenance personnel. Stop switch shall be provided in the machine room. Operation of these switches/ buttons shall cancel all the registered calls and landing calls for that particular lift.

**14.3.2 Maintenance Switch on top of the Car:**

For purpose of inspection and maintenance, maintenance switch shall be provided on top of the car. The control circuitry shall be so arranged that in the event of the operation of this switch :

- (a) The car speed shall be less than the rated speed not exceeding 0.85 metres/ sec.
- (b) The car movement shall be possible only on the application of the continuous pressure on a button. It shall be so mounted to prevent any inadvertent operation.

**14.3.3 Fireman Switch :**

Fireman switch with glass to break for access shall be provided at ground or main floor for all the lifts. The operation of this switch shall isolate/ or cancel all calls to all the lifts and the lifts will stop at the next nearest landing if travelling upward. The doors will not open at this landing and the lifts will start travelling to ground floor. If these were already travelling down, they will go straight to ground floor direct without stopping reroute.

**14.3.4 Inspection Facility :**

An Inspector's change over switch and set of test buttons shall be provided in the controller. Operation of the Inspector's changeover switch shall make both the car and landing buttons inoperative and permit the lift to be worked in either direction from machine room for test purposes by pressing corresponding test buttons in the controller. It shall not however interfere with the emergency stop switches inside the car or on the top of the car.

**14.3.5 Safety Line Indicators :**

If specified visual tell tele lights may be provided to monitor the conditions of faults in the safety line of the lift for easier fault finding. These indicators will remain lit when safety circuits are normal.

One indicator shall be provided for each safety on the controller. If any indicators fail to light up as the lift proceeds in its sequence of operation, there shall be visual indication of the safety line open circuit and also its location for easier fault finding.

**14.4 Control Wiring****14.4.1 Wiring in Machine Room :**

Power wiring between the controller and main board controller to various landings shall be done in heavy gauge conduit or metal duct & shall conform to I.E. Rules 1956 and CPWD. Specifications for electrical works. Following general principal shall be followed in wiring:

- (a) (i) – Control cables carrying DC and power cable carrying AC shall not be run in the same conduit or metal duct and they shall be laid as per I.E. rules.
- (ii) Metal duct with removable inspection cover shall be preferred.
- (iii) In case of control cables also the harness shall be separate as far as feasible for separate functions and laid separately in suitably dimensioned metal duct or in a

separate conduit such as the signaling, locking, lamp indication and safeties. Control cables for different voltages in the lift installation works should be laid as per I.E. Rules.

(b) At least 5 percent with a minimum of 5 unconnected spare wires shall be available out of all the lines to be provided in the wiring harness from the midway junction box to the machine room.

(c) There shall be a master isolating switch fuse associated with the controller heavy duty load break, quick make, quick break, quick break type TP&N preferably interlocked with controller cabinet door. Isolator handle shall have provision for external locking in off position.

All relays shall be suitable for lift service and shall incorporate adequate contact wipe for reliable operation. Relays shall operate satisfactorily between 80 percent to 110 percent of their voltage.

Main motor contactors shall be suitable for A.C. duty. Tenderer shall be required to furnish full details of make, type, applicable standard, voltage and current rating, duty class, type and routine tests done etc., on contactors and relays. Copies of type test certificates and other test certificates shall also be furnished by the successful tenderer.

All cables shall be with copper conductors and flame retardant or PVC insulated of appropriate size. The cables feeding motor and in heavy current flow paths shall be so selected that the size matches the protecting fuses and will not result in more than 2 percent voltage drop from the main board to the terminals of motor. Control cables shall not be less than 0.5 sq. mm. or equivalent if stranded; where installation of heavy gauge conduits present difficulties, short lengths of flexible conduits will be permitted but effective electrical continuity and earth bonding shall be ensured. Ferrules shall be slipped at the ends of all cables as per standard control wiring practice. All terminal blocks shall be suitably marked.

#### 14.4.2 **Trailing Cables :**

A single trailing cable for lighting control and signal circuit is permitted, if all the conductors of this trailing cables are insulated for maximum voltage running through any one conductor of this cable. The lengths of the cables shall be adequate to prevent any strain due to movement of the car. All cables shall be properly tagged by metallic / plastic tags for identification.

Trailing cables shall run from a junction box on the top of the car to a junction box located in the shaft bear mid point of travel and from these junction boxes conductors shall be run to the various locations.

Trailing cables exceeding 30 meters in length shall run so that the strain on individual cable conductors will be reduced to a minimum and the cables are free from contact with the car counterweight, shaft walls or other equipment.

Trailing cables exceeding 30 meters in length shall have steel supporting fillers and shall be suspended directly by them without rubbing over other supports.

Cables less than 30 meters in length shall have no – metallic fillers and shall be suspended by looping cables around supports of porcelain spools type or equivalent.

5 percent of the total capacity subject to a minimum of 5 wires shall be available unutilised in the trailing cable everywhere suitable distributed between various functions.

#### 14.4.3 **Earthing:**

Metal frames and all metal work of the lift controller frame etc., shall be earthed with double earth leads taken to the earth bar. Looping shall be permitted if such routing is feasible. All other individual metallic frame work of components etc., shall be loop earthed.

#### 14.5 **Miscellaneous:**

Principle of segregation function wise shall be accepted as far as possible in the general

arrangement of components. All terminal blocks shall be of 650 V grade.

#### 14.6 **Controller Casing:**

The controller unit comprising of the main circuit breaker adjustable overload and phase reversal and phase failure protection all the circuit elements transformer, rectifier for D.C. control supply, inverter power pack, terminal blocks etc., shall be enclosed in an insect proof, sheet steel floor or wall mounted cabinet with hinged doors at front or at both front and rear. Proper warning boards and danger plates shall be provided on both sides of the controller casing. CRCA Sheet steel used for controller cabinet shall not be less than 16 gauge and shall be properly braced where necessary. Suitable gland plate shall be provided for cable entry. The battery for the charger unit shall be suitably placed in the machine room.

All sheet steel work shall be painted with two coats of synthetic enamel paint of suitable shade both inside and outside over two coats of zinc primer.

#### 15.0 **Lift Rope Compensation**

The lift rope compensation for lift travel shall be provided for lift travels beyond 40m in all cases.

#### 16.0 **Automatic rescue Devices (ARD)**

The Automatic Rescue Devices (ARD) meant for the purpose of bringing the lift car to the nearest landing doors, are being used selectively and is generally restricted to commercial buildings having heavy traffic. However, frequent power failures being the common phenomenon, the provision of ARD shall be made in all the lifts in public building. The ARD shall have the following specifications.

- 16.1 ARD should move the elevator to the nearest landing in case of power failure during normal operation of elevator.
- 16.2 ARD should monitor the normal power supply in the main controller and shall activate rescue operation within 10 second of normal power supply failure. It should bring the elevator to the nearest floor at a slower speed than the normal run. While proceeding to the nearest floor the elevator will detect the zone and stop. After the elevator has stopped, it automatically opens the doors and parks the door open. After the operation is completed by the ARD the elevator is automatically switched over to normal operation as soon as normal power supply resumes.
- 16.3 In case the normal supply resumes during ARD in operation, the elevator will continue to run in ARD mode until it reaches the nearest landing and the doors are fully opened. If normal power supply resumes when the elevator is at the landing, it will automatically be switched to normal power operation.
- 16.4 All the Lift Safety Devices shall remain active during the ARD mode of Operation.
- 16.5 The battery capacity should be adequate so as to operate the ARD at least seven times a day provided the duration between usage is at least **30 minutes**.

**TECHNICAL REQUIREMENT FOR SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ONE NO. ELEVATOR FOR SBI BUILDING AT NEW TOWN, KOLKATA**  
**( To be read in conjunction with the Bill Of Quantity)**

A	SITC of 6 Passenger elevator (for G+3) with Machine Room
1	<p>Number Of Lifts/Type Of Lift: One Passenger elevator            Load / Speed : 6 Persons / 1.0 Mtr. Per Second            Drive : MICRO PROCESSOR BASED VVF            Traction Media : Coated Steel Belt            Machine : Permanent Magnet Gearless            Travel / Head Room : As per Site Condition            Number Of Floors : 4 (G + 3 UPPER FLOORS)            Floor Display Chart : G,1,2,3            Non-Stop Floors : 4            Number Of Landing Entrances : 4 (G + 3 UPPER FLOORS)            Number and Position of Car Entrances : 1 (ONE), IN FRONT ONLY            Position Of Machinery : In the Lift Shaft            Size of Lift Well : As per Site Condition . Tenderer is advised to visit site and take measurements for themselves as lift design will have to suit site conditions.            Lift Car Inside Size : As per Site Condition            Type or Design of Lift Car : Stainless Steel(1.5mm)-Hairline Finish &amp; Rear Panel in Glass            Car Ceiling - Sleek(Medium Circular Lights)-Stainless Mirror Finish            Car Floor : 25 mm Recess.            Car Fittings : LED Light &amp; Axial Flow Fan.            Type Of Landing Entrance Protection : Power Operated Centre Opening Sliding Door            Type Of Car Entrance Protection : Power Operated Centre Opening Sliding Door            Type Of Landing Door Frame : Stainless Steel-Hairline Finish            Clear opening of Gates / Doors : 800 mm (W) X 2100 mm ( H)            Type Of Control System : Micro Processor based selective collective control with/without Attendant            Electric Supply : AC 400/440 VOLTS, 3 PHASE, 50 CYCLES            Elevator pit depth : As per Site Condition            Signals : Dot Matrix type, Floor position indicator at all landings and in car.            Special features :</p> <ol style="list-style-type: none"> <li>1. Automatic Rescue Device with UPS back-up.</li> <li>2. Battery operated Emergency Light and Alarm.</li> <li>3. Fireman's Emergency Operation.</li> <li>4. Anti-Nuisance Car Call Cancellation.</li> <li>5. Car Call Cancellation at Terminal Stop.</li> <li>6. Automatic Operation for Car Light and Fan.</li> <li>7. Close loop control for main and door drive.</li> <li>8. Repeated Door Closing in Case of Lock contact Failure.</li> <li>9. Voice Announcement System.</li> <li>10. Over Load Indicator.</li> <li>11. Phase Failure &amp; phase Reversal Protection.</li> <li>12. Self-Detection &amp; Indication of Faults.</li> <li>13. Door System by Light Curtain (81Beam).</li> <li>14. Car arrival chime</li> <li>15. Home Landing.</li> <li>16. VF Door Drive System.</li> </ol>

	<p>17. Decorative call buttons                  18. Braille System                  19. Intercom system                  20. Necessary fittings for the physically handicapped                  NOTE: Before procurement contractor should refer to the architectural and structural drawings. No deviation from the drawings will be acceptable.</p> <hr/> <p>Cost should include following:                  i) Builders work and scaffolding, pit ladder etc.                  ii) Cost for providing landing door sills                  iii) Cost of structurals to match shaft dimension, if any.                  iv) Arrangement for power and all other related electrical items to cater the demand of constructional load, testing and commissioning of the lift                  v) Lift pit / shaft lighting work all complete                  vi) Landing door frame for landing gate                  vii) Unloading at site                  viii) Lift Inspector and/or other Statutory Authority Certification as required by NKDA Rules                  **Tenderer is advised to visit site and take measurements for themselves as lift design will have to suit site conditions</p>
2	<p>Comprehensive AMC for 3 years after completion of defect liability period of 1 year                  Amount quoted for this item will be considered for determination of Lowest Tenderer. However, payment against this item will be paid during material period of implementation of this item.</p>

Note: Dimensions of lift car, doors etc. might have to suitably adapted to suit site conditions.

**TESTING OF LIFT INSTALLATION****1. Tests at site:****a. Leveling Test:**

Accuracy of the floor leveling shall be tested with the lift empty, fully loaded.

The lift shall be run to each floor while traveling both in upward and downward directions and the actual distance of car floor above/ below landing floor shall be measured. In each case there shall not be any appreciable difference in these measurements for leveling at the floors when the car is empty and when it is fully loaded. The tolerances for leveling shall be as specified .

**b. Safety Gear Tests:**

Instantaneous safety gear controlled by a governor, should be tested with contract load and a contract speed, the governor being operated by hand. Two tests should be made, however, with wedge clamp or flexible clamp safeties, one with contract load in the car and the other with 68 kg (equivalent to one person) in the car. The stopping distance obtained should be compared with the specified figures and the guides, car platform, and safety gear should be carefully examined afterwards for signs of permanent distortion.

Counterweight safety gear should be tripped by the counter weight governor and the stopping distance noted. In this case, however the governor tripping speed should exceed that of the car safety governor but by not more than 10 percent.

During the safety gear tests, car speed (from the governor or the main sheave) should be determined at the instant or tripping speed with that stated in I.S. The governor jaws and rope should be examined for any undue wear.

**c. Contract speed:**

This should be measured with contract load in the car, with half load with no load, and should not vary from the contract speed by more than 10 percent. The convenient method is by counting the number of revolutions, made by the sheave or drum in a known time, Chalk mark on the sheave or drum and a stop switch will facilitate timing but care must be exercised to ensure that no acceleration or retardation periods are included. If the roping is 2 to 1 the sheave speed is twice the car speed. Alternatively, the speed can be measured by a tachometer applied directly to shaft immediately below the sheave.

**d. Lift balance:**

After the above test, some of the weight shall be removed until the remaining weights represent the figures specified by the tenderer. With this condition car at half way travel the effort required to move the lift car in either direction with the help of winding wheel shall be as nearly as can be judged by the same.

**e. Car and landing doors interlocks:**

The lift shall not move with any door open. The car door relay contact and the retiring release can must be tested. The workings of the door operation and the safety edges and light equipment if any provided shall also be examined.

**F Controllers:**

The operation of the contractors and interlocks shall be examined and it shall be ascertained whether all the requirements laid down in the specifications have been met.

**G Normal terminal stopping switches:**

These shall be tested by letting the car run to each terminal landing in turn, first with no load and then with contract load and by taking measurements, top and bottom over travels can

be ascertained.

**H Final terminal stopping switches:**

The normal terminal stopping switches shall be disconnected for this test. It shall be ensured that these switches operate before the buffers are engaged.

**I Insulation Resistance:**

This shall be measured (after removing the electronic PCB's and their connection) between power and control lines and earth and shall not be less than 5 mega-ohms when measured with D.C. voltage of 500 volts. The test shall be carried out with contractors so connected together as to ensure that all parts of every circuit are simultaneously tested.

**J Earthing:**

All conduits, switches, casing and similar metal work shall have earthing continuity.

**K Ropes:**

The size, number construction and fastenings of the ropes should be carefully examined and recorded.

**L Buffers:**

The car should be run on to its buffers at contract speed and with contract load in the car to test whether there is any permanent distortion of the car or buffers. The counter weight buffers should be tested similarly.

**2. Tests at Manufacturer's works:****a. High voltage test:**

The dielectric or electrical apparatus (excluding motors, generators and instruments which are tested in accordance with the appropriate Indian Standards wherever they exist) shall be capable of withstanding a test voltage of ten times the working voltage with a maximum of 2000 volts when applied.

- (ii) between the live parts and case of frame with all circuits completed.
- (iii) Between main terminals or equivalent parts with all circuits open, and
- (iv) Between any live parts of independent circuits.

Note: Owing to the impracticability of applying tests (ii), (iii) mentioned above on controllers and similar apparatus after controller wiring has been completed, these tests may be made at convenient stages of manufacture.

**b. (i) Method of applying high voltage:**

The test shall be made with alternating voltage of any convenient frequency, preferably between 49 and 60 cycles per second. The test voltage shall be of approximately sine-wave form and during the application of voltage with peak value, as would be determined by spark gap by oscillograph or by any other approved method shall not be more than 1.45 times the rms value. The rms values of the applied voltage shall be measured by means of a volt meter used with a suitably calibrated potential transformer or by means of voltmeter used in connection with a special calibrated voltmeter winding or testing transformer by any other suitable voltmeter connected to the output side of the testing transformer.

**(ii) Duration of high voltage test:**

The test shall be commenced at a voltage of about one third of the test voltage which shall be increased to the full test voltage as rapidly as is consistent with the value being indicated by the measuring instruments. The full test voltage shall be maintained for one minute. At the end of this period, the test voltage shall be rapidly diminished to one third of its full value before switching off.



The oil buffers are examined after the above tests have been made to determine if there has been any oil leakage or distortion and to ensure that the buffers return to their normal positions.

**(c) Buffer test:**

A copy of the test report shall be intimated after testing at works.

**4. Performance Test:**

This test is meant for passenger lifts and is conducted to watch the performance of lift installation in terms of passenger handling capacity and waiting interval as obtained at site vis-à-vis design, data and conducted as below:

- (i) Waiting interval: (T)- This can be worked out by taking the average of several round trip times as observed physically and then dividing it by the number of lifts in the bank.
- (ii) Handling capacity  $H = \frac{300 \times Q \times 100}{T \times P}$

Where

H= Handling capacity as the percentage of the peak population handled during 5 minutes.  
P= Total population to be handled during peak morning period. (It is related to the area for which particular bank of lifts services).

Q= Average number of passenger carried in a car.

T= Waiting interval.

**(iii) Service temperature Test:**

A continuous run of one hour should be made with number of starts and stops to reproduce as nearly as practical the anticipated duty in service. (The standard duty cycle is for 90 to 180 start per hour). It is very difficult in practice to carry out this test with alternate starts at full load and no load and it is necessary therefore to simulate these cycles. A suitable test for all motors except squirrel cage motors is to run the car up from the bottom landing with contract load and stop at each floor. From the top floor a non stop run is made to the lowest floor and the upward journey with stop is then repeated. The time intervals between stops and starts at the floors should be uniform and such as to give about 150 starts in one hour. At the end of this run the temperatures of the armatures and fields of the motor and generator are recorded. The temperature rise should, not exceed 55 deg C or 75 deg C for classes A or B insulation respectively.

All factory test reports to be submitted to Bank prior to transportation to site.

**APPENDIX –VI  
FIRE SAFETY REQUIREMENTS**

General requirements of lifts shall be as follows:

2. Walls of lift enclosures shall have a fire rating of 2 hours; lifts shafts shall have a vent at the top, of area not less than 0.2 m<sup>2</sup>.
3. Lift motor room shall be located preferably on top of the shaft and separated from the shaft by the floor of the room.
4. Landing doors in lift enclosures shall have a fire resistance of not less than one hour.
5. The number of lifts in one lift bank shall not exceed 4. individual shafts in a bank shall be separated by a wall of 2 hours fire rating.
6. Lift car door shall have a fire resistance rating of one hour.
7. For building 15m in height or above, collapsible gates shall not be permitted for lifts and shall have solid doors with fire resistance of a least 1 hour. If the lift shaft and lobby is in the core of the building, a positive pressured between 25 and 30Pa shall be maintained in the lobby and a positive pressure of 50 Pa shall be maintained in the lift shaft. The mechanism for pressurization shall act automatically with the fire alarm; it shall be possible to operate this mechanically also.
8. Exit from the lift lobby, if located in the core of the building, shall be through a self-closing smoke stop door of half an hour fire resistance.
9. Lift shall not normally communicate with the basement. If, however, lifts are in communication, the lift lobby of the basements shall be pressurized as in (6), with self-closing door as in (7).
10. Grounding switch (es), at ground floor level, shall be provided on all the lifts to enable the fire service to ground the lifts.
11. Telephone or other communication facilities shall be provided in lift cars for building of 30m in height and above. Communication system for lifts shall be connected to fire control room for the building.
12. Suitable arrangements such as providing slope in the floor of lift lobby shall be made to prevent water used during fire fighting etc. at any landing from entering the lift shafts. A sign shall be posted and maintained on every floor at or near the lift indicating that in case of fire, occupants shall use the stairs unless instructed other wise. The sign shall also contain a plan for each floor showing the locations of the stairways. Alternate source of power supply shall be provided for all the lifts through a manually operated changeover switch.
13. Fire Lifts- All lifts shall be provided with fire man's switch and shall be termed as 'Fire Lifts'.
14. In case of fire, only fireman shall operate fire lifts. In normal course, it may be used by other persons.

**TECHNICAL PARTICULARS**

**TENDERER SHOULD FILL UP THESE PARTICULARS TO BE SUBMITTED AS PART OF THE TENDER IN COVER I**

(USE SEPARATE SHEET OF PAPER WITH SIGNATURE AND SEAL TO GIVE DETAILS , IF REQUIRED)

Sl. No.	Particulars of Details	
<b>A.</b>	<b>General:</b>	
1	Name of Manufacturer.	
2	Country of Manufacture.	
3	Capacities (Persons/ Weight).	
4	Service	
5	Speed of Travel	
6	Height of Travel	
7	No. of Floors served.	
8	No. of openings.	
9	Position of counterweight.	
10	Type of Leveling method.	
11	Traction Media	
<b>B.</b>	<b>Machine:</b>	
1	Position of Machine	
2	Motor (Type and make)	
3	Electric supply particulars for which it is suitable for operation	
<b>C</b>	<b>Brake</b>	
1	Type	
<b>D</b>	<b>Car and Doors:</b>	
1	Outside dimensions of car.	
2	Inside clear dimensions.	
3	Construction of car	
4	Design/ type of enclosure of car.	
5	Details of flooring	
6	Attachment and fitting inside the car	
7	Car Doors:	
	(a) Size	
	(b) Operation	
	(c) Construction, design & finish	
8	Landing Doors:	
	(a) Size	
	(b) Operation	
	(c) Construction, design & finish	
<b>E.</b>	<b>Safety Devices:</b>	
1	Car safety-type	
2	Counter weight safety-type	
3	Door inter locks in car-type	
4	Door locks in landing-type	
<b>F.</b>	List of makes of various equipment , material offered	
<b>G</b>	List of deviations from technical specifications given in the tender document.	

**E. SPECIAL CONDITION OF CONTRACT**

1. **Setting out the work:** a) The contractor shall set out the work and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions, and alignment of all parts thereof and get it approved by the consultant/ Bank's Engineer before proceeding with the work. If at any time any error in this respect shall appear during the progress of the works, irrespective of the fact that the layout had been approved by the consultant/ Bank's Engineer the contractor shall be responsible for the same and shall at his own expenses rectify such error, if so, required to satisfaction of the SBI.
  - a) The dimension provided in the schedule as well as in the drawing are likely to vary slightly according to the size & space available in the Premise Area where they are to be provided or placed, Bank have the right to slightly modified the dimensions of the items to suit the site & no claim therefore shall be made by the contractor.
2. **Protection of works and property:** The contractor shall continuously maintain adequate protection, of all his work from damage and shall protect the SBI's properties from injury or loss arising in connection with contract. He shall make good any such damage, injury, loss due to his fault or negligence except which are due to causes beyond his control.
3. **Inspection of Work:** The Bank's Engineer/Consultant or their representatives shall at all reasonable time have free access to the work site and/or to the workshop, factories or other places where materials are lying or from where they are obtained and the contractor shall give every facility for inspection and examination and test of the materials and workmanship.
4. **Quality of Materials, Workmanship & Test:** All materials and workmanship shall be best of the respective kinds described in the contract and in accordance with Bank's Engineer/Consultant instructions and shall be subject from time to time to such tests as the Bank's Engineer/Consultant may direct at the place of manufacture or fabrication or on the site or an approved testing laboratory. The contractor shall provide such assistance, instruments, machinery, labour and materials as are normally required for examining measuring sampling and testing any material or part of the work before/after incorporation in the work for testing as may be selected and required by the Architect/Consultant.
5. **Obtaining Information related to execution of work:** No claim by the contractor for additional payment shall be entertained which is consequent upon failure on his part to obtain correct information as to any matter affecting the execution of the work nor any misunderstanding or the obtaining incorrect information or the failure to obtain correct information relieve him from any risks or from the entire responsibility for the fulfillment of contract.

- 6. **Works to be measured:** The Bank's Engineer/Consultant may from time to time intimate to the contractor that he required the work to be measured and the contractor shall forthwith attend or send a qualified representative to assist the them in taking such measurements and calculation and to furnish all particulars or to give all assistance required by any of them. The contractor or his authorized representative shall sign all the pages of the measurement book in which the measurements have been recorded in token of his acceptance All authorized extra work, omissions and all variations made shall be included in such measurements.
- 7. **Bill Submission Format:** The bill shall be as per tender specification as detailed below along with Detail Measurement Sheet. Bill will not be accepted if detail calculation sheet of the quantity executed at site is not being attached. If required then the contractor may be ask to submit the Manufacturing certificate in due course of bill checking period

Sl. No	Descriptio n	Unit	Tender rate	Ten qty	Act qty (L/B/D)	Ted amount	Act amount
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**Declaration**

I/We hereby declare that I/We have read the above terms and conditions /instructions carefully and fully understood and will abide by the same.

Signature of the vendor with seal :

Place :

Date :