



बैंक ऑफ बड़ौदा आंचलिक कार्यालय, एर्नाकुलम चौथी मंजिल, एम जी रोड, मेट्रो स्टेशन कॉम्प्लेक्स, एम जी रोड एर्नाकुलम-682035

**BANK OF BARODA**

**Zonal Office, Ernakulam  
4<sup>th</sup> Floor, M G Road, Metro Station Complex,  
M G Road Ernakulam-682035**

सर्वे क्र. 521/7,8 करिकामुरी क्रॉस रोड जंक्शन, एर्नाकुलम के पास स्थित भूखंड पर बैंक के अपने भवन की छत पर 30.00 किलोवाॅपी एसआरटीपीवी पावर प्लांट की आपूर्ति, स्थापना, परीक्षण, कमीशन और एएमसी के लिए निविदा - 682011

**TENDER FOR DESIGNING,SUPPLYING, INSTALLATION, TESTING, COMMISSIONING  
& AMC OF 30.00KWp SRTPV POWER PLANT AT ROOF TOP OF BANK'S OWN  
BUILDING ON PLOT WITH SURVEY NO. 521/7, 8 NEAR KARIKAMURI CROSS ROAD  
JUNCTION, ERNAKULAM - 682011**

**तकनीकी बोली  
TECHNICAL BID**

निविदा अवधि 19.03.2024 से 11.04.2024 अपराह्न 3:00 बजे तक

बोली पूर्व बैठक की तिथि: 26.03.2024 पूर्वाह्न 11:00 बजे

तकनीकी बोली क खोलना 11.04.2024 को अपराह्न 3:30 बजे

**TENDER PERIOD FROM 19.03.2024 TO 11.04.2024 UPTO 3:00 PM**

**DATE OF PRE-BID MEETING: 26.03.2024 AT 11:00 AM**

**OPENING OF TECHNICAL BID ON 11.04.2024 AT 3:30 PM**

## NOTICE INVITING TENDER

**Name of the work:** Design ,Supply, Installation, Testing, Commissioning & Comprehensive AMC of 30.00 KWp On – Grid Net Metering type Roof Top Solar Photo Voltaic Power Plant at roof top of bank's own building on plot with survey no. 521/7,8 located near Karikamuri Cross Road Junction, Ernakulam-682011.

BANK OF BARODA is a corporate body constituted under the banking companies (Acquisition and Transfer of Undertakings) Act 1970 and having its Head Office at Mandvi, Baroda and the Corporate Office at C-26, G Block Bandra Kurla Complex, Bandra (E) Mumbai - 400 051.

Bank Of Baroda ,Zonal Office, Ernakulam invites sealed tenders from eligible/reputed Indian firms/bidders for Supply, Installation, Testing, Commissioning and Maintenance of 30.00 K.Wp On – Grid Net Metering type Roof Top Solar Photo Voltaic Power Plant at bank's own building located on plot with survey no. 521/7,8near Karikamuri Cross Road Junction, Ernakulam-682011.

| Name of the Project  | Tentative cost including tax (Rs.) |
|--|------------------------------------|
| Design ,Supply, Installation, Testing, Commissioning & Comprehensive AMC of 30.00 K.Wp On – Grid Net Metering type Roof Top Solar Photo Voltaic Power Plant at roof top of bank's own building located on plot with survey no. 521/7,8 near Karikamuri Cross Road Junction, Ernakulam-682011 | 20.40 Lakhs                        |

### DOWN LOADING TENDER DOCUMENT

Downloaded application from Bank's website ([www.bankofbaroda.com/tenders.asp](http://www.bankofbaroda.com/tenders.asp)) needs to be used by the Bidders/applicant/tenderer alone. All the information should be furnished in the space provided and documentary evidences / copies of certificates duly certified alone need to be attached. Please note that any changes in the prequalification / other criteria mentioned in this Tender Document shall be inserted as addendum in the tender section of Bank's Website, if found necessary. No newspaper notification in this regard shall be issued. Hence bidders are requested to regularly check Bank's website till the last date of submission of tender. Offers received without incorporating modifications suggested by Bank (if any) shall liable for rejection.

*\*Bidders/applicant/tenderer stands for the agency applying/participating in this tender exercise*

### **BRIEF DESCRIPTION OF WORK**

The Bank has proposed to set up residential cum commercial building at its own plot of land admeasuring 28.19 Cents located at Karikamuri Cross Road Junction opposite to Spectrum Softtech Solutions. The proposed building will have -16- nos of staff quarters along with parking space and a small space for commercial purposes accommodated in Basement+Ground+5 Floors. The Building is proposed to obtain IGBC Platinum/Gold rating.

Location (Survey No.) - Survey No. 521/7 & 521/8  
Kanyannur Taluk,Near Karikamuri  
Junction, Ernakulam

**Address/ Location of the said premises is on Karikamuri Junction , Opp. Spectrum Softtech Solutions, Ernakulam South, Kochi, Kerala**

**Present Situation: The construction work of building framed structure is completed, B/w, plaster, flooring work, plumbing, electrical works are in progress. Bidders are advised to visit the site physically before submitting their quote.**

## MEMORANDUM

|  |   |
|--|---|
| <b>Name of Work</b>                            | <b>DESIGN,SUPPLYING, INSTALLATION, TESTING, COMMISSIONING &amp; AMC OF 30.00KWp SRTPV POWER PLANT AT ROOF TOP OF BANK'S OWN BUILDING ON PLOT WITH SURVEY NO. 521/7,8 NEAR KARIKAMURI CROSS ROAD JUNCTION, ERNAKULAM - 682011</b>  |
| <b>Period of Tender</b>                        | 19.03.2024 TO 11.04.2024 UPTO 3:00 PM   |
| <b>Date ,Time and Place of Pre Bid Meeting</b> | 26.03.2024 AT 11:00 AM at Bank of Baroda, Zonal Office,Ernakulam,4 <sup>th</sup> Floor, M.G. Road Metro Station Complex, M.G. Road, Ernakulam-682035,Kerala,India   |
| <b>Date of Technical Bid Opening</b>           | 11.04.2024 AT 3:30 PM at Bank of Baroda, Zonal Office,Ernakulam,4 <sup>th</sup> Floor, M.G. Road Metro Station Complex, M.G. Road, Ernakulam-682035,Kerala,India.<br><br>All the bidders/their representatives are requested to be present for Technical Bid(T.B.) opening. No separate information will be given for T.B. opening. |
| <b>Venue of Submission of tender</b>           | Bank of Baroda, Zonal Office,Ernakulam,4 <sup>th</sup> Floor, M.G. Road Metro Station Complex, M.G. Road, Ernakulam-682035,Kerala,India   |
| <b>Address for Communication</b>               | The General Manager, Ernakulam Zone<br>Bank of Baroda, Baroda Zonal Office,Ernakulam,4 <sup>th</sup> Floor, M.G. Road Metro Station Complex, M.G. Road, Ernakulam-682035,Keral,India  |
| <b>Date of Price Bid Opening</b>               | Shall be conveyed separately to the technically qualified bidders only  |

(ii)

|                               |   |  |
|-------------------------------|---|--|
| (a) Description of works      | : | Design, Supply, Installation, Testing, Commissioning & Comprehensive AMC OF 30.00KWp SRTPV Power Plant at Roof Top of Bank's own building on plot with survey no. 521/7,8 near Karikamuri Cross Road Junction ,Ernakulam-682011  |
| (b) Tentative cot of the work |   | Rs.20.40 Lakhs including GST   |
| (c) Validity of tender        |   | -3- months from the date of prize bid opening  |
| (d) Earnest Money Deposit     | : | Rs. 21000 (Rupees Twenty One Thousand Only) in the form of Demand Draft/Bankers Cheque ,favoring "Baroda Zonal Office, Ernakulam" payable at Ernakulam issued on or during live tender period, will only be accepted. EMD must be kept along with Technical Bid envelope only not in Financial Bid |

|  |   |  |
|--|---|--|
|  |   | envelope or else tender/offer will be rejected   |
| (e) Initial Security Deposit                       |   | 2% of the value of the accepted tender value including the Earnest Money Deposit. To be deposited by successful bidder within -7- days from the date of work order acceptance. |
| (f) Retention Money                                |   | 8% (Eight percent) of Interim/Running Account bills. Account bill till accumulation of amount equal to 5% of Contract Value  |
| (g) Period of work completion                      | : | -60- Calendar days from the date of acceptance of work order or handing over of site by the Bank, whichever is later.  |
| (h) Liquidated damages for delay                   |   | The sum at the rate of 1.0 % of the Contract Value per week of delay subject to a maximum limit of 10 % of the Contract Value.   |
| (i) Defects Liability /Maintenance period          |   | 365 days from the date of actual work completion   |
| (j) Period of AMC                                  |   | -3- Years from the next day of date of completion of defect liability period.  |
| (k) Advance Payment                                |   | No advance payment e.g. Mobilization, advance at the work commencement against material, advance payment against material will be paid. Running/Interim Bills shall be paid.   |
| (l) Minimum Amount of Interim Running account bill |   | Rs. 5.00 Lakhs   |
| (m) Payment of Interim/running                     |   | Within -15-days from the date of joint verification/certification of bill with vendor  |

### Important Dates

**Last date of submission: UPTO 3:00 PM of 19.03.2024**

**Date of Technical bid opening: 3:30 PM of 11.04.2024**

**Pre Bid Meeting (at Zonal Office, Ernakulam): 11:00 AM of 26.03.2024**

## **Prequalification /Eligibility Criteria**

1. The firm shall be in the business of undertaking designing, supplying, installation, testing, commissioning and maintenance of On – Grid solar power systems for Banks/ large office buildings / commercial premises / Industrial houses/Residential Buildings for a minimum period of -7- years ending on the date of publishing/advertising the tender. (A copy of valid certificates, work order copies and satisfactory work completion certificates issued not later than the date of publishing /advertisement of tender should to be submitted)
2. The firm should have satisfactorily completed works, as stated below all executed during the last 7 years from the date of publish of tender.
  - a) Three similar works of costing not less than Rs. 8.16 Lakhs ( Rupees Eight Lakhs & Sixteen Thousand only)  
OR
  - b) Two similar works of costing not less than Rs 10.20 Lakhs ( Rupees Ten Lakhs & Twenty Thousand only)  
OR
  - c) One Similar work of costing not less than Rs 16.32 Lakhs ( Rupees Sixteen Lakhs & Thirty Two Thousand only)

*Similar work shall mean of “Design, Supply, installation, testing, commissioning of On- Grid Rooftop Solar Photo Voltaic Power Projects.*

A copy of the clients Work order in favour of Bidder and Commissioning certificate/ synchronization certificate of concerned electricity Supply Company issued by the competent authority is to be attached along with Tender for each work.

3. The Tenderer shall be financially sound and should have achieved an average annual financial turnover of Rs 6.00 Lakhs or more during last three financial years ( 2020 – 2021 to 2022 – 2023) . The financial capability of the Tenderer shall be supported by copies of the audited balance sheet and profit & loss a/c statements for the last -3- years.
4. Firm shall have a well-established local Office in the state of Kerala(address proof required) for providing after sales service during the warranty period and post warranty period/AMC period of solar power plant with necessary supporting staff. Details of the local office set up with necessary documents is to be submitted along with the Tender.
5. Should be having sufficient manpower i.e. Required technical staff, technicians etc. to carry out execution of such work in terms of nature and magnitude.
6. The firm should be in existence for a minimum period of last -5- years and rendering same. Work experience shall be counted in the name of firm/agency only which has participated in this exercise as bidder/tendered/applicant. The bidder should submit a valid document as a proof for registration of the firm/company etc.
7. The firm shall have valid PAN & GST Registration Certificate.

## **Scope of work**

It involves complete design, manufacture, testing at factory, supplying at site including loading, transportation, transit insurance, unloading, storage insurance till the handing over of the system,

positioning, assembling and installation of 30.00 KWp Roof Top Solar PV Power Plant with comprehensive on - site maintenance contract (AMC) of Solar System as per requirement for three years after expiry of defect liability period. Supplier has to prepare and submit necessary physical layout drawings, along with the technical details for installation of Solar System to the Bank within 14 days of work order.

### **General Instructions/information to bidder/tenderer/applicant**

*\*Bidders/applicant/tenderer stands for the agency/consultant applying/participating in this tender exercise*

- Location of the proposed work premises: The proposed location of installation is residential cum commercial building (under construction) near Karikamri Cross Road Junction, Ernakulam accommodating -16- residential units.
- Bidders/applicants has/have to seal and sign every page of the tender/application/bids as proprietor/partner/director of the company/firm, necessary documents are mandatory to be enclosed. In case ,if the tender/application/bid is signed by the Authorized Signatory/POA holder, an authority proof or POA copy should be added for acceptance of the tender/application, or else tender/application are liable to be summarily rejected.
- Bidders/applicants has/have to submit sealed tender/bids/applications after mentioning the name of tender exercise i.e. “DESIGN,SUPPLYING, INSTALLATION, TESTING, COMMISSIONING & COMPREHENSIVE AMC OF 30.00KWp SRTPV POWER PLANT AT ROOF TOP OF BANK’S OWN BUILDING ON PLOT WITH SURVEY NO. 521/7,8 NEAR KARIKAMURI CROSS ROAD JUNCTION, ERNAKULAM - 682011” Details of submission of tender in Envelopes are given on Page no 12,13.
- The bidders/firms are required to submit all the necessary credentials/supporting documents as a proof to their eligibility as per the aforesaid eligibility criteria. Those who do not submit Performance Certificates/Completion Certificates issued by their previous employers / clients for the above similar jobs shall liable to be summarily rejected. Necessary verification of the credentials submitted shall be carried out by bank for shortlisting the bidders/firms in respect of satisfactory verification of their credentials. Only those bidders will be invited for participating in the design completion for whom the feedback received during verification is found satisfactory.
- The works shall be carried out without causing any inconvenience to the occupants of the Building/and the neighbourhood of the other building.
- Bank reserves the right to accept or reject any or all the applications without assigning any reasons whatsoever. No additional claim will be entertained in this regard. Conditional offers shall be rejected.
- Canvassing or support in any form for the acceptance of any application is strictly prohibited. Any bidder/applicant doing so will render himself liable to penalties which may include disqualification.
- Bank shall not be responsible for any expenses incurred by bidders in connection with the preparation and delivery of their bids, including expenses incurred during bidding.

- Bank reserves the right to cross verify the credentials furnished by the firm/bidder/tenderer through Previous clients/Any authority. In case of receiving any false/negative report/feedback, the firm/bidder shall not be considered for technical prequalification.
- Bids from consortium shall not be accepted. Telex / Telegraphic / Fax / Email bids shall not be accepted. Late/ Delay / post Tenders shall be rejected and representative of such bidder shall not be allowed to attend the bid opening.
- Defaulter firms (Have/had abandoned the awarded work halfway without completion or not executed the work after awarding of the Tender) / black listed by any Central / State Government Departments or autonomous institutions of Central/ State Governments/PSU/PSE Or any reputed client/firm are not eligible for participating in this Tender.
- The works shall be carried out without causing any inconvenience to the occupants of the Building/and the neighbourhood of the other building.
- Preference will be given to Central Government Agencies Qualifying in the Technical Bid as per guidelines of Central Government for awarding the Work.
- Those Tenderers who are claiming the exemption from paying the EMD shall submit the valid documents for claiming exemption as per conditions stated in the circulars issued by the Central Government along with the Tender documents. Documents submitted after opening the Technical Bid will not accepted.
- For deciding the lowest Bidder among the qualified Tenderers, Total Quoted Tender Amount including of GST will be considered.
- The date of opening the price bid will be intimated subsequently only to such Bidders whose Technical bids are found qualified as per the pre-qualification terms and conditions. The Tenderers are requested to be present during the opening of the Tender in their own interest.
- Tenderers must get acquainted with the proposed work and study premises, designs, specifications, conditions of contract and other conditions carefully before Tendering. The Tenderer shall seek clarifications on any item, if required, prior to submitting their Tender. No request of any change in rates or conditions for want of information on any particular point shall be entertained after receipt of the Tenders.
- The Tenderer is advised to inspect the site to ascertain the nature of site, access thereto, location, facilities for procurement of materials, labour rates and execution of the work. The Tenderer shall be deemed to have full knowledge of the site and drawings whether or not he actually inspects them.
- Any scaffolding/ Rope ladder/ladders/ working platform etc required for execution of works has to be arranged by the Contractor himself at his own cost as Bank will not provide these items.
- The time allowed for completion of works is -60- days reckoned from the date of acceptance of work order or handing over the site by the bank, whichever is later. Time shall be considered the essence of the Contract. The time allowed for carrying out of the work shall not exceed this period.
- All the technical features/brochures of the Solar System and such other details/data required for the technical evaluation of the entire system is to be submitted along with the Tender.
- A Tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed.
- Submission of a Tender by a Tenderer implies that he has read this notice and all other Contract documents and has made himself aware of the scope and specifications of the

work to be done and local conditions and other factors having a bearing on the execution of the work.

- The evaluation will be based on the Pre-qualification criteria & technical specifications detailed in these documents, Tenders of the firms which meet the prequalification criteria and technical specifications will only be considered.
- Comprehensive On Site Maintenance -AMC (after the expiry of defect liability period) is an essential part of this Tender. The Supplier is required to provide prompt and effective after sales service, attend break down calls within the stipulated time. Therefore the Tenderers / Contractors shall necessarily furnish the fair and reasonable AMC charges in the price Bid for -3- (three) years after the expiry of defect liability period. Quoted price of AMC is also considered for price comparison (to decide L1) along with the cost of Solar System/Equipments.
- AMC shall be Comprehensive Maintenance Contract including cost of all the items/ materials /components/spare parts of the Solar system, periodical routine check – ups, periodical routine maintenance, preventive maintenance, attending to break down maintenance calls including repair/replacement of worn out items with minimum down time. All costs towards consumables, spare parts, test apparatus, equipments, tools, tackles, access stands, scaffolding, labour, material, insurance, loading, unloading transpiration, labour etc are deemed to be included in the quoted rates for maintenance contract. Maintenance services shall be available on all Bank working days and on holidays if required.
- The scope of Comprehensive onsite maintenance support covers:
  - a) Diagnose the faults & rectify the hardware/software faults detected.
  - b) Repair/replace the faulty units/parts etc of the equipment.
  - c) Carry out the periodical preventive maintenance.
  - d) Periodical cleaning of the solar panels to maintain the stated power generation capacity.
  - e) Upkeep & Upgrade the software to latest version periodically.
- f) A separate agreement for the Tendered Rates will be entered with the Tenderer for AMC after expiry of the warranty period of newly installed Solar system. Penalty clause will be applicable in case of unreasonable delay (beyond stipulated period as decided before entering Contract) in repairing and restoration of functioning of Solar system.
- The Tenderer is requested to quote strictly as per the terms and conditions and specifications given in the Tender document and not to stipulate any deviations. Wherever specifications of certain works are not available they shall be deemed to be done as per relevant I.S code.
- Addendum/Corrigendum to this Tender document, if issued, must be signed and submitted along with the Tender document.
- Tenderers are advised not to make any alteration/modification in the Tender documents, item of work or in any respect whatsoever. Violation of this requirement will make the Tender liable for rejection.
- In case of postal delivery, the Tenderer has to ensure that Tender is reached Tender Box kept at the Premises Division before the due date and time. The Bank will not be responsible for damage in the transit or delay in the receipt of tender, if any or sent by a special messenger. Tender received late beyond the scheduled date and time shall be rejected.



- All signatures in Tender documents shall be dated and stamped. Every page of the Tender document shall be initialled at the lower right hand corner by the person or persons submitting the Tender in token of his/their having acquainted himself/themselves with the General and Special Conditions of Contract, Specifications etc., as laid down in the Tender. Any Tender with any of the documents not so signed will be subjected for rejection.
- No consideration will be given to a Tender received after the time stipulated above and no extension will be allowed for submission of the Tender.
- **Rates to be in figures and words:**  
The Tenderer should quote in English both in figures as well as in words the rates and amounts Tendered by him in the Schedule of Rates for each item and in such a way that interpolation is not possible. The amount for each item should be worked out and entered and requisite totals given of all items both in figures and in words. The Tendered amount for the work shall be entered in the Tender and duly signed by the Tenderer.
- **Corrections and Erasures:**  
No corrections and alterations in the entries of Tender papers shall be permitted. If any they shall be signed and dated in full by the Tenderer. Corrections with white fluid and overwriting are not permitted.
- The Tender shall contain the names, postal address of the residence and place of business of authorized person signing the Tender and shall be signed in /his usual signature. Partnership firms shall furnish the full names of all Partners in the Tender. It should be signed in the partnership name by all the partners or by duly authorized representative followed by the name and designation of the person signing. A copy of the partnership deed of the firm with names of all partners shall be furnished. Tender by a Company/Corporation shall be signed by an authorized representative, and a power of Attorney by the Company/Corporation in the name of person who has signed the Tender document on their behalf shall accompany the Tender.
- When a Tenderer signs a Tender in a language other than English, the total amount Tendered should, in addition, be written in the same language. The signatures should be attested by at least one witness.  
Witness:  
Witnesses and sureties shall be persons of status and propriety and their names, occupation and address shall be stated below their signatures.
- Any printing or typographical errors/omission in Tender document shall be referred to the Architect/Consultant appointed by the Bank and their interpretation regarding correction shall be final and binding on Contractor.
- **Earnest Money:**  
The Tenderer shall pay the amount of Earnest Money as mentioned in the Notice Inviting Tender, by Bank Demand Draft/Banker's Cheque payable to Bank of Baroda, at Ernakulam. No interest on Earnest Money deposited by the Tenderer shall be allowed. The Earnest Money of the unsuccessful Tenderers will be refunded within a reasonable period of time without any interest.

The Earnest Money deposited by the successful Tenderer shall be retained as part of Security Deposit. The Security Deposit shall be forfeited if the Contractor fails to observe/breaches any terms and conditions of the Contract.

➤ **Validity:**

Tenders submitted by Tenderers shall remain valid for acceptance for a period up to 90 days from the date of opening of price bid. The Tenderers shall not be entitled during the period of validity, without the consent in writing of Bank to revoke or cancel his Tender or to vary the Tender given or any terms thereof.

- Addendum to the Tender document may be issued if required to clarify documents or to reflect modifications to the design or contract terms. Each addendum issued by the Architect/Interior Designer will be distributed/circulated to each person or organization to which a set of Tender documents has been issued. Each recipient will submit the same along with his Tender. All addenda issued by the Bank shall become part of Tender Documents.
- The acceptance of a Tender will rest with the Bank who does not bind themselves to accept lowest Tender and reserve to themselves the authority to reject any or all the Tenders received without assigning any reasons at any point of time. Bank also reserves the right of accepting the whole or any part of the Tender and the Tenderers shall be bound to perform the same at the rates quoted.
- All Tenders in which any of the prescribed conditions are not fulfilled or are incomplete in any respect or there is any correction not duly signed and dated by the Tenderer are liable to be rejected. For this purpose Tenderer shall quote rates for various items which will be self-sufficient to meet their whole costs for executing any / every item. No demand for variations in rates for items executed shall be entertained on the plea of the Bank deciding to delete, alter or reduce the quantities specified in respect of the any item. Bank can reduce or increase the scope of the work/tender items for which no claim will be entertained.
- The work may be awarded to one or more agencies duly splitting the work at the entire discretion of the Bank. The quoted rates shall hold good for such an eventuality.
- The Bank is not concerned with any rise or fall in the prices of materials and labour. The rates quoted shall include all material costs, labour, tools and tackles, allowances, freight, transportation, insurance, all temporary arrangements for work execution and all taxes including GST on works contract or any other charges including any enhanced labour rates etc. which may become effective for any reason including those due to acts of Government/ Statutory Bodies enacted from time to time by the State and or the Central Government. Under no circumstances, shall the Bank be held responsible for compensation or loss to the contractor due to any increase in the cost of labour or materials etc. **INDIVIDUAL RATES QUOTED SHALL BE CONSIDERED FINAL FOR EACH ITEM**, even if any variation is there in the amount, the final rates quoted against each specific items only will be considered. If any Items are mentioned without the rates, it shall be considered as that those particular items shall be done at Rs. 0/-(Zero) as per the Tender specification and no additional amount shall be entertained for the same.
- The rate quoted in the Tender shall also include electric and water consumption charges for construction and erection. If power and water are available at the site, the Contractor shall have to make his own arrangements to obtain the connections from the available sources at his own expense and maintain an efficient service of electric light and power and water and shall pay

for the services consumed and maintain the installations at his own cost. If no power and water are available at the site, the Contractor shall have to make his own arrangements to obtain power and water connections and maintain at his own expense an efficient service of electric light and power and shall pay for the electricity consumed. Bank shall not be liable to provide accommodation, toilet facility to labourers of the contractor; such arrangements to be made by the contractor only.

- The Solar System work shall be guaranteed to be free from manufacturing defects, defective workmanship or materials and any defects that may appear within -12- months from the date of issue of completion certificate which in the opinion of the Bank/Consultants have arisen from bad manufacturing, workmanship or materials, shall upon intimation be made good by the Contractor at his own cost within the time specified. During the said period of -12- months the Contractor shall without any extra cost, carry out all routine and special maintenance of the Solar system and attend to difficulties and defects that may arise. The Tenderer / Contractors shall associate with him during the execution and free service period, the operation and maintenance staff of the Bank.
- Payments for the work to be executed under this contract shall be made as per the Tender document, and no variation in the mode of payment will be acceptable.
- The Tenderer shall guarantee that the work shall conform to the detailed specifications.
- Before handing over the system, 2 copies shall be furnished to the Bank along with 2 sets of "as built" drawings of all the works done as executed by the contractor. In addition to hard copy of as built drawings, the contractor shall also supply a computer copy containing these drawings in a digital form (done with Auto CAD - 2004 or above version) similarly the operation and maintenance manual etc. shall also be supplied in a pen drive with suitable indexing format for easy retrieval and reference.
- **Signing of the contract:**
  - a. The successful Tenderer shall be required to execute an agreement in the proforma attached with this Tender document within 30 days from the date of receipt of the notice of acceptance of Tender. In the event of failure on the part of the successful Tenderer to sign the agreement within the above-stipulated period. The Bank reserves the right to forfeit the earnest money/ security deposit and cancel the contract.
  - b. Until the Agreement is formally signed, the Work Order / Letter of Acceptance of Tender issued to the successful Tenderer and accepted by him shall be operative and binding on the Bank and the Contractor and on acceptance of the Tender, the name of the accredited representatives of the Tenderer who would be responsible for or taking instructions from the Bank shall be mentioned by the Tenderer. If so decided, the Bank reserves the right to appoint PMC (Project Management Consultant) or any other agency to get the quality of works checked, measurements recorded, including certification of bills etc.
- The Bank reserves the right to reproduce partly or fully the items executed on site anywhere in the country premises and no copyright claims shall be made by any contractor of any description from the Bank.
- The Bank has the right to delete items, reduce or increase the scope of work without the contractor claiming any compensation for the reduction/increase in the scope of work.
- **Amendment to Tender Document:**

At any time prior to deadline for submission of Tender, the Bank, for any reason, whether, at its own initiative or in response to a clarification requested by prospective bidder may modify

the Tender document by amendment. Notification of amendments will be made available on the Bank's website ([www.canarabank.com](http://www.canarabank.com)) and will be binding on all Vendors and no separate communication will be issued in this regard.

In order to allow prospective Vendors reasonable time in which to take the amendment into account in preparing their tender, the Bank, at its discretion, may extend the deadline for a reasonable period as decided by the Bank for the submission of Tender.

In case of any addendum or corrigendum, information will be displayed in bank's website only. Bidders/applicants are request to keep in touch with bank's website in tender section or follow the link <https://www.bankofbaroda.in/tenders/zonal-regional-offices> OR visit Tender Section in Bank of Baroda website.

- Envelope No. 1: Envelope No. 1 shall contain all set of Technical Bid duly stamped and signed on each page. Proof of EMD submitted through electronic transfer. All the credentials like work orders, experience certificate etc, This envelope shall be super scribed "Envelope No. 1 - "DESIGN, SUPPLYING, INSTALLATION, TESTING, COMMISSIONING & COMPREHENSIVE AMC OF 30.00 KWp SRTPV POWER PLANT AT ROOF TOP OF BANK'S OWN BUILDING ON PLOT WITH SURVEY NO.521/7, 8 NEAR KARIKAMURI CROSS ROAD JUNCTION, ERNAKULAM - 682011".

Kindly note that Financial Bid will strictly not to be placed in Envelope-1 or the offer will be rejected without entertaining any excuse/claim.

- Envelope No. 2: Envelope No. 2 shall contain f Financial Bid Only. This envelope shall be super scribed "Envelop No. 2 - PRICED BID/FINANCIAL BID for "DESIGN, SUPPLYING, INSTALLATION, TESTING, COMMISSIONING & COMPREHENSIVE AMC OF 30.00 KWp SRTPV POWER PLANT AT ROOF TOP OF BANK'S OWN BUILDING ON PLOT WITH SURVEY NO.521/7, 8 NEAR KARIKAMURI CROSS ROAD JUNCTION, ERNAKULAM - 682011".

Kindly note that Proof of EMD deposited through electronic transfer will strictly not be placed in Envelope-1 or the offer will be rejected without entertaining any excuse/claim.

- Envelope No. 3: Envelope No.-1 and Envelope-2 shall be covered in Envelope- 3.

Tenders complete in all respects along with relevant documents and information in the prescribed format/Annexure-II (along with compilation chart) to be submitted in a sealed envelope super scribing DESIGN, SUPPLYING, INSTALLATION, TESTING, COMMISSIONING & AMC OF 30.00 KWp SRTPV POWER PLANT AT ROOF TOP OF BANK'S OWN BUILDING ON PLOT WITH SURVEY NO.521/7, 8 NEAR KARIKAMURI CROSS ROAD JUNCTION, ERNAKULAM - 682011, to the address given below on or before up to 1500 HRS of 11.04.2024.

**The General Manager,  
Bank of Baroda,  
Zonal Office, Ernakulam,  
4<sup>th</sup> Floor, M. G. Road Metro Station Complex, M. G. Road, Ernakulam-682035**

The Applications/bids/tenders will be **opened on 11.04.2023 AT 1530 hours** in the presence of designated committee of executives and bidders/representatives of bidders. Applicants/their representative are requested to be present during tender opening. No separate information will be given in this regard. In case of holidays/strikes/bands or any reason causing a holiday/non-working day exactly on the last date of submission of tenders/offers; the last date of submission will be shifted to next working day. The same will be applicable for date of opening of tenders/bids.

Downloaded application from Bank's website alone needs to be used by the firms in the trade of SITC of Solar Panels/Solar Power Plants only. All the information should be furnished in the space provided and documentary evidences / copies of certificates duly certified alone need to be attached.

I / We hereby declare that I / We have read and understood the above instructions for the guidance of the Tenderers.

Signature of Tenderer\_\_\_\_\_

Address\_\_\_\_\_

Date \_\_\_\_\_

### **Queries**

The bidders for pre-qualification are requested to obtain any information for the services to be rendered by contacting the Bank's official / engineer attached to our Zonal Office at Ernakulam, during working hours not later than 2 days before the due date of submission of pre-qualification documents.

|                   |                                |
|-------------------|--------------------------------|
| Contact Persons   | : Chief Manager (Civil Engg)/  |
| Telephone Numbers | : 0484-2867816, Mob.8085281679 |
| E Mail            | : pe.ekmz@bankofbaroda.com     |

## PREQUALIFICATION

### Basic Information

|   |  |  |
|---|--|--|
| 1 | <p>Name of the applicant/bidder/firm</p> <p>Address of the Registered Office.<br/>(With Contact Nos, Email ID &amp; Contact Person)</p> <p>Address of office in Kerala ,preferably in Ernakulam.(With Contact Nos, Email ID &amp; Contact Person)Enclose the proof</p> |  |
| 2 | Year of establishment  |  |
| 3 | Type of the organization (Whether sole proprietorship, Partnership, Private Ltd. or Ltd. Co. etc.)(Enclose certified copies of documents as evidence)  |  |
| 4 | <p>Name &amp; qualification of the Proprietor / Partners / Directors of the Organization / Firm</p> <p>a)</p> <p>b)</p> <p>c)</p> <p>enclose certified copies of document as evidence</p>  |  |
| 5 | Details of registration – Whether Partnership firm, Company etc. Name of Registering Authority, Date and Registration number (Enclose certified copies of document as evidence)  |  |

|    |   |                               |
|----|---|-------------------------------|
| 6  | Whether registered with Government / Semi – Government / Municipal Authorities of any other Public Organization and if so, in which class and since when? (Enclose certified copies of document as evidence)  |                               |
| 7  | <p>a. No. of years of experience in the field and details of work in any other field.</p> <p>b. Whether ISO certified, furnish the details.</p>   |                               |
| 8  | Area of business activities other than architectural consultancy, if any, and place of business.  |                               |
| 9  | Address of business activities other than architectural consultancy if any, and place of business   |                               |
| 10 | <p>Address of the registered/office through which the proposed work of the Bank will be handled and the Name &amp; Designation of officer in charge.</p> <p>(ENCLOSE ADDRESS PROOF)</p>   |                               |
| 11 | <p>[a] Yearly turnover of the organization during last 3 years (year wise) and furnish audited balance sheet and Profit &amp; Loss A/c (Audited) for the last –3- years.</p> <p>[b] Committed turnover in</p> <p style="text-align: center;"><b>2020 – 2021</b></p> <p style="text-align: center;"><b>2021-2022</b></p> <p style="text-align: center;"><b>2022-2023</b></p> <p>#Certificate of annual turnover(past -03-years) issued by Chartered Account to be enclosed</p> |                               |
| 12 | Name & Address of Bankers   | <p>1.</p> <p>2.</p> <p>3.</p> |
| 13 | <p>PAN No.</p> <p>(ENCLOSE COPY PAN CARD)</p>   |                               |

|    |   |                                      |
|----|---|--------------------------------------|
| 14 | GST No.<br>(ENCLOSE COPY)   |                                      |
| 15 | Work Executed/Completion. Detailed description in --- <b>ANNEXURE-III</b>   |                                      |
|    | <p>a. Three similar works each costing not less than Rs. 8.16 Lakhs.</p> <p style="text-align: center;">OR</p> <p>b. Two similar works costing not less than Rs 10.20 Lakhs.</p> <p style="text-align: center;">OR</p> <p>c. One Similar work costing not less than Rs 16.32 Lakhs</p> <p>(Enclose work completion certificate from client)</p>                                     |                                      |
| 16 | Work in Hand. Detailed description in --- <b>ANNEXURE-IV</b>  |                                      |
| 17 | Details of Key Personnel Permanently employed in the firm.<br>Detailed description in ( <b>ANNEXURE-V</b> )   |                                      |
| 18 | Other infrastructural information to be used/referred for this project. List of available plants, machineries equipments etc.   |                                      |
| 19 | Furnish the names of –3- responsible persons along with their designation, address, Tel.No., etc., for whose organization, you have completed the above mentioned jobs and who will be in a position to certify about the performance of your organization.   | <p>1.</p> <p>2.</p> <p>3.</p>        |
| 20 | <p>Whether any Civil Suit / litigation arisen in contracts executed / being executed during the last 10 years. If yes, please furnish the name of the project, employer, Nature of work, Contract value, work order and brief details of litigation.</p> <p>Detailed description in --(<b>ANNEXURE-VII</b>)</p> <p>Give name of court, place, and status of pending litigation.</p> | Attach a separate sheet if required. |
| 21 | Information relating to whether any litigation is pending before any Arbitrator for adjudication of any litigation or else any litigation was disposed off during the last ten years by an arbitrator. If so, the details of such litigation are required to be submitted.  |                                      |



**ANNEXURE-III**

**Work ‘EXECUTED’ of similar nature costing not less than Rs. 8.16 Lakhs) over the last -7- years as of date of tender advertisement**

| <b>Project Name</b> | <b>Name of address of Client</b> | <b>Description of work</b> | <b>Contract No.</b> | <b>Value of work (Rs.)</b> | <b>Date of issue of Work Order</b> | <b>Stipulated period of completion</b> | <b>Actual date of completion</b> | <b>Remarks explaining reason for delay</b> |
|---------------------|----------------------------------|----------------------------|---------------------|----------------------------|------------------------------------|--|----------------------------------|--|
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |

**Notes:**

- 1.1 Information has to be filled up specifically in this format. Please do not write remark “As indicated in Brochure”.
- 2.1 For certificates, the issuing authority shall not be less than an Executive In charge.
- 3.1 Documentary proof of work orders and performance certificates from the clients needs to be attached. Extra sheets may be attached ,if required

**ANNEXURE-IV**

**Work 'IN HAND' of similar nature costing not less than Rs. 8.16 Lakhs) over the last -7- years as of date of tender advertisement:**

| <b>Project name</b> | <b>Name of address of Client</b> | <b>Description of work</b> | <b>Contract No.</b> | <b>Value of work (Rs.)</b> | <b>Date of issue of Work Order</b> | <b>Stipulated period of completion</b> | <b>Actual date of completion</b> | <b>Remarks explaining reason for delay</b> |
|---------------------|----------------------------------|----------------------------|---------------------|----------------------------|------------------------------------|--|----------------------------------|--|
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |
|                     |                                  |                            |                     |                            |                                    |  |                                  |  |

**Note :**

1. Information has to be filled up specifically in this format. Please do not write "As indicated in Brochure"
2. For certificates, the issuing authority shall not be less than an Executive In charge.
3. Documentary proof of work orders from the clients needs to be attached. Extra sheets may be attached, if required.

**ANNEXURE-V**

**Details of key personnel, giving details about their technical qualification & experience including that in your establishments**

|          | <b>Name and designation</b> | <b>Age</b> | <b>Qualifi-<br/>cation</b> | <b>Exp-<br/>eri-<br/>ence</b> | <b>Nature<br/>of<br/>Works<br/>Handle<br/>d</b> | <b>Name<br/>of<br/>The<br/>Project<br/>s<br/>Handle<br/>d</b> | <b>Date from<br/>Which<br/>Employed<br/>In your<br/>Organisa<br/>tion</b> | <b>Indicate<br/>Details of<br/>Experienc<br/>e<br/>To similar<br/>Projects</b> |
|----------|-----------------------------|------------|----------------------------|-------------------------------|---|---|---|--|
| <b>1</b> | <b>2</b>                    | <b>3</b>   | <b>4</b>                   | <b>5</b>                      | <b>6</b>  | <b>7</b>  | <b>8</b>  | <b>9</b>   |
|          |                             |            |                            |                               |   |   |   |  |

**Notes:**

1. Information has to be filled up specifically in this format. Please do not write remark “As indicated in Brochure”.
2. Indicate other points, if any, to show your technical and managerial competency to indicate any important point in your favour. Extra sheets may be attached, if required.

**ANNEXURE-VI**

**UNDERTAKING TO BE FURNISHED ON COMPANY LETTER HEAD WITH REGARD TO  
BLACLISTING/ NON-DEBARMENT,**

To,

The General Manager,  
Bank of Baroda, Zonal Office, Ernakulam,  
4<sup>th</sup> Floor, M. G. Road Metro Station Complex,  
M. G. Road, Ernakulam-682035

Ref.: Designing, Supplying, Installation, Testing, Commissioning and Comprehensive AMC of  
30.00KWp SRTPV Power Plant at Roof Top of Bank's own building on plot with survey no. 521/7, 8 near  
Karikamuri Cross Road Junction, Ernakulam-682011,Kerala.

Dear Sir,

I/We hereby confirm and undertake that I/we, M/s -----, is/are not blacklisted/  
De-registered/ debarred by any Government department/ Public Sector Undertaking/ Private Sector Enterprises/  
or any other agency for which we have Executed/ Undertaken the works/ Services during the last 5 years.

For M/s -----

Seal & Signature of the bidder

**ANNEXURE-VII****Information on Litigation History in which the Bidder is involved:**

| <b>Client and address</b> | <b>Cause of dispute</b> | <b>Amount (Rs)</b> | <b>Remarks and the present status.</b> |
|---------------------------|-------------------------|--------------------|--|
|                           |                         |                    |  |
|                           |                         |                    |  |
|                           |                         |                    |  |
|                           |                         |                    |  |
|                           |                         |                    |  |
|                           |                         |                    |  |
|                           |                         |                    |  |
|                           |                         |                    |  |
|                           |                         |                    |  |

**ANNEXURE-VIII****COMPILLATION CHART**

Bidders/applicants/tenderers are requested to complete and submit the compilation chart along with the application.

| <b>Sr. No</b> | <b>Documents Required</b>   | <b>Provided / or Not Provided (to be filled by Bidders)</b> | <b>Page No</b> |
|---------------|---|---|----------------|
| 1             | Work Order Copy for carrying out similar job [Designing, Supplying, Installation, Testing, Commissioning and Comprehensive AMC] during last -7- years as of date of publishing advertisement) |   |                |
| 2             | Work Completion Certificate for the work mentioned in Sr. No. 1   |   |                |
| 3             | Performance/Experience Certificate from the employer for the work mentioned in Sr. No. 1  |   |                |
| 4             | Work Order Copy from PSB's/PSU's /other reputed organizations for similar work.   |   |                |
| 5             | Proof for having a full-fledged office in Kerala  |   |                |
| 6             | Undertaking for not having blacklisted by PSU, PSE, State/Central Government Organization during last -5- years   |   |                |
| 7             | CA Certificate/It returns as proof of turnover  |   |                |

I/We hereby declare that I/We have read and understood the above instructions and also declare that all information furnished here are true to the best of my / our knowledge and belief.

**Witness Signature .....**

**Bidder's Signature.....**

**Addresses.....**

**Address.....**

.....

.....

Date.....

Date.....

## **DECLARATION / UNDERTAKING**

1.I/We agree that the decision of the Bank of Baroda, Zonal Office, Ernakulam hereby referred as client in Selection of Applicants / Contractor, phasing of works in Any other Project related matter will be final and bidding to me/us.

2. All the information and data furnished herewith are correct to Best of my/our knowledge.

3. I/We agree that we have no objection if inquiries are made about our Works related areas and any other inquiry regarding all details, Projects and works listed us in the tender document.

4. I/We also understand that furnishing of wrong information or hiding of Information shall be a cause for disqualification.

Date:

Signature with Seal of the  
Bidder/Company

## **FORM OF TENDER**

**The General Manager,  
Bank of Baroda,  
Zonal Office, Ernakulam,  
4<sup>th</sup> Floor, M. G. Road Metro Station Complex,  
M. G. Road, Ernakulam-682035**

**Dear Sir/Madam,**

**Ref:** Design, Supply, Installation, Testing, Commissioning and Comprehensive AMC of 30.00 KWp Solar Roof Top PV Solar Power Plant at bank's own building on plot with survey no. 521/7, 8 near Karikamuri Cross Road Junction, Ernakulam-682011

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

I/We herewith deposit Rs.21000 (Rupees Twenty One Thousand Only) by Demand Draft or Banker's Cheque drawn in favour of **Bank of Baroda, Payable at Ernakulam** as Earnest Money Deposit for the execution of the works at my/our Tendered rates together with any variations should the work be awarded to me / us.

In the event of this Tender being accepted, I/we agree to enter into and execute the necessary contract required by you. I/We do hereby bind myself/ourselves to forfeit the aforesaid deposit of Rs.20000 (Rupees Twenty Thousand Only) in the event of our refusal or delay in signing the Contract Agreement. I/we further agree to execute and complete the work within the time frame stipulated in the Tender documents. I/we agree not to employ Sub-Contractors without the prior approval of the Bank.

I/we agree to pay GST, Sales Tax, Service Tax, Works Contract Tax, Excise Tax, Octroi, Duties, all Royalties and all other applicable taxes prevailing and be levied from time to time on such items for which the same are levied and the rates quoted by me/us are inclusive of the same.

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

I/We agree that in case of my/our failure to execute work in accordance with the specifications and instructions by the Bank, during the course of the work, Bank reserves the right to terminate my contract and forfeit the Earnest money deposit paid by me in addition to recovery of all the dues to the Bank from the payment receivable by me. Further I may also be barred from Tendering in future for the Bank and its subsidiaries.

**I/we enclose demand draft/banker's Cheque for Rs.20000 (Rupees Twenty Thousand Only) towards Earnest Money deposit along with Technical Bid , in favour of Bank of Baroda, payable at Ernakulam.**

I/we agree to keep our Tender open for -90- days from the date of opening of price bid

Yours truly,

[To be signed by the Authorized Representative of Tenderer]

Place:

Date



## **FORM OF AGREEMENT**

**ARTICLES OF AGREEMENT** made this -----day of ----- Two Thousand nineteen between the Bank of Baroda, a Corporate body constituted under the Banking Companies (Acquisition and Transfer of Undertakings) Act 1970 and having its **Zonal Office at Bank of Baroda, Zonal Office, Ernakulam ,4<sup>th</sup> floor, M G Road Metro Station Complex, M G Road, Ernakulam-682035**. Represented by **The General Manager** (hereinafter referred to as the “OWNER/EMPLOYER”) which expression shall include its successor/s and assignee/s of the ONE PART.

AND

M/S.....having its registered office at ..... (Here in after referred to as the ‘CONTRACTOR’) which expression shall include its successor/s and assignee/s of the OTHER PART.

WHEREAS the Owner is desirous of executing the **Design, Supply, Installation, Testing, Commissioning and Comprehensive AMC of 30.00 KWp Solar Roof Top PV Solar Power Plant at bank’s own building on plot with survey no. 521/7,8 near Karikamuri Cross Road Junction, Ernakulam-682011**(hereinafter referred to as the ‘works’) in the alternate premises.

AND

WHEREAS the Owner/Employer has caused the specifications, priced schedule of quantities of said works as per General Conditions of Contract, Special Conditions, Additional Condition and Instructions to the Tenderer to which the offer of the Contractor shall be accepted.

AND

WHEREAS the Tender of the Contractor for the said work has been approved and accepted for a sum of Rs. \_\_\_\_\_ By the Owner.

AND

WHEREAS the contractor has deposited with the owner Rs ..... as security deposit for the due performance of the Agreement.

AND

WHEREAS the said Architects/Consultants has issued work order thereafter to the Contractor.

AND

WHEREAS the relevant drawings inclusive of the Specifications, Priced Schedule Of Quantities, General Conditions Of Contract, Special Conditions, Additional Conditions and Instructions to the Tenderers including all other conditions as mentioned in the Tender document and all correspondence exchanged by or between the parties from the date of submission of the Tender till the award of the work, both letters inclusive (hereinafter collectively referred to as ‘the said conditions’) have been signed by the parties hereto and the contractor has agreed to execute the works upon and subject to the said conditions.

**NOW IT IS HEREBY AGREED AS FOLLOWS:**

1. In consideration of the said contract payments to be made to the Contractor as hereinafter provided the Contractor shall upon and subject to the said conditions execute and complete the works and such further instructions as may be furnished to the contractor by the owner/ employer through the architects /consultants as described in the said specifications and the said priced Schedule of Quantities.
2. The payment to the contractor will be made at the time and in the manner specified in the conditions of contract.
3. The agreement and documents are mentioned above shall form the part of this contract and the parties hereto shall respectively abide by, submit themselves to the said conditions and perform the agreement on their part respectively in the said conditions contained.
5. This contract is neither a fixed lump sum contract nor a piecework contract to carry out the work in respect to Proposed Supply, Installation, Testing & Commissioning of Solar System and allied works on the sheet roofing of bank's building and all subsidiary works connected therewith within the same site as may be ordered to be done from time to time by the said Owner / Employer even though the said works may not be shown on the drawings or described in the said specifications or the priced schedule of quantities described and to be paid for according to the actual measured quantities at the rates contained in the Schedule of rates and probable quantities or as provided in the said conditions.
6. Not with standing what are stated in the general conditions and instructions to the Tenderer and hereinbefore stated, the Owner / Employer reserves to himself the right to alter the nature of the work and of adding to or omitting any items of works from the contract or of having portions of the same carried out departmentally or otherwise and such alternations or variations shall be carried out without prejudice to this contract.
7. Time shall be considered as the essence of this contract and the contractor hereby agrees to commence the work on the day of handing over of the site or within the fourteen days from the date of issue of formal work order whichever is later as provided for in the said conditions and to complete the entire work within the stipulated time subject nevertheless to the provisions of extension of time.
8. Any dispute arising under the agreement between the parties hereto shall be referred for adjudication to a sole arbitrator in the manner and in terms of the provisions as laid down in the General Conditions of Contract. The award of the arbitrator shall be final and binding on both the parties.

9. All disputes arising out of or in any way connected with this agreement shall be deemed at -  
Ernakulam and Courts in Ernakulam shall have jurisdiction to determine the same.
10. That the several parts of this contract have been read by the contractor and fully understood by  
the contractor.  
In witness whereof the Employer and the Contractor have set their respective hands to these  
presents through their authorized official and the said two duplicates hereof to be executed on its  
behalf of the day and year first herein above written.

SIGNED by the said  
Owner / Employer

\_\_\_\_\_

In the presence of:

(1). Signature  
Name and Address

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(2). Signature  
Name and Address

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SIGNED by the said  
Contractor

\_\_\_\_\_

In the presence of:

(1). Signature  
Name and Address

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **GENERAL CONDITIONS OF CONTRACT**

- 1.1 In construing these conditions and the specifications, Schedule of Quantities and Contract Agreement, the following words shall have the meanings herein assigned to them except where the subject or context otherwise requires:
- 1.2 **"Bank"** shall mean **"Bank of Baroda" with its Zonal Office, 4<sup>th</sup> Floor, M G Road, Metro Station Complex, M G Road, Ernakulam – 682035** and shall include his/their heirs, legal representatives, assignees and successors.
- 1.3 **"Contractor"** / **"Contractors"** shall mean the person or the persons, firm or company whose Tender has been accepted by the Bank and shall include his/their heirs, and legal representatives, the permitted assigns and successors.
- 1.4 **"This Contract"** - Shall mean the Articles of Agreement, the conditions, the Appendix, the Schedule of Quantities and specifications attached hereto and duly signed.
- 1.5 **"Site"** - Shall mean the site of the contracted works including any building and erection thereon and any other land (inclusively) as aforesaid allotted by the Bank for the contractor's use.
- 1.6 **"Works"** shall mean the works to be executed and recorded in accordance with the Contract and shall include all extra or additional altered or substituted works as required and recorded for the performance of the Contract.
- 1.7 **"Contract Documents"** shall include the notice inviting Tenders, the Articles of Agreements, the General Conditions of Contract, the special conditions of contract, the Appendices, the Schedule of Quantities, Specifications for Materials, Work-Sheet and mode of measurements, and drawings pertaining to the work. All sections of this Contract Document are to be read together. Further such correspondence between the Bank / Architect / Consultant and Contractors as admitted by the Bank before award of work and thereafter shall also form part of contract documents.
- 1.8 **"Notice in Writing"** or written notice shall mean a notice in writing, typed or printed characters, sent by the Bank or (unless delivered personally or otherwise proved to have been received by registered post to the last known private or business address or registered office of the contractors or by e-mail and shall be deemed to have been received by them when in the ordinary course of post or by e-mail it would have been delivered.
- 1.9 **"Act of Insolvency"** shall mean any Act of Insolvency as defined by the Presidency Towns Insolvency Act, or the Provincial Insolvency Act or any Act amending such original act/s.
- 1.10 **"Virtual Completion"** shall mean that the works are in the opinion of the **Bank** complete or fit for occupation.
- 1.11 Headings and marginal notes to these conditions shall not be deemed to form a part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
- 1.12 **"Net Prices"** - If in arriving at the contract amount the contractor shall have added to or deducted from the total of the items in the Tender any sum, either as a percentage or otherwise, then the net price of any item in the Tender shall be the sum arrived at by adding to or deducting from the actual figure appearing in the Tender as the price of that item a similar percentage of proportionate sum, provided always that in determining the percentage or proportion of the sum so added or deducted by the contractor the total

amount of any Prime Cost Items and Provisional sum of money shall be deducted from the total amount of the Tender. The expression "net rates" or "net prices" when used with reference to the contract or accounts shall be held to mean rates or prices so arrived at. Words "importing persons" including firms and corporations. Words importing the singular only also include the plural and vice versa where the context requires.

## **2. SCOPE OF CONTRACT:**

- 2.1 The contract comprises of the construction, completion and maintenance of the works, provision of all labour, materials, constructional plant, temporary works and everything whether of a temporary or permanent nature required in and for such construction, completion and maintenance.
- 2.2 The Contractor shall carry out and complete the works in every respect in accordance with this Contract and with the directions of and to the satisfaction of the **Bank**.
- 2.3 The variation or modification of the design, quality or quantity of works or the addition or omission or substitution of any work.
- 2.4 Any discrepancy in or divergence between the Drawings or between the Schedule of quantities and/or Drawings and/or specifications.
- 2.5 The removal from the site of any materials brought thereon by the Contractor and the substitutions of any other materials thereof.
- 2.6 The removal and/or re-execution of any works executed by the Contractor.
- 2.7 The postponement of any work to be executed under the provisions of this Contract.
- 2.8 The dismissal from the works of any person employed thereupon.
- 2.9 The opening up for inspection of any work covered up.
- 2.10 The amending and making good of any defects.
- 2.11 Co-ordination of work with other agencies appointed by the Bank for due fulfilment of the total work.
- 2.12 The Bank shall have a right to delete any item of work from the scope of contract at any point of time and contractor shall not make any extra claim on this account.
- 2.13 The Contractor shall forthwith comply with and duly execute any work contained instructions of Bank whether oral or written, It is provided that verbal instructions, directions and explanations given to the Contractor or his representative upon the works shall, if involving a variation, be confirmed in writing by the Contractor within 5 days and if not dissented from in writing within a further 10 days by the bank, such shall be deemed to be the bank instructions within the scope of the contract.
- 2.14 If Compliance with the **bank's** instructions involves any variation, the Bank shall pay the Contractor upon verification of rates, work and quantity of the said work in accordance with market rates.
- 2.15 If the Contractor fails to comply with the **bank's** instructions within a fortnight after the receipt of written notice requiring compliance with such instructions, the Bank may employ some other agency to execute any work whatsoever which may be necessary to give effect to such instructions
- 2.16 For the purpose of entering day-to-day instructions by the **bank**, the Contractor shall maintain at his own cost, a "Site Instruction Book" in quadruplicate in which the instructions shall be entered by **bank**.
- 2.17 'Instruction' to the Contractor shall be generally issued through **bank**.

## **3. GENERAL OBLIGATIONS:**

### **3.1 CONTRACT:**

The contractor shall enter into and execute a contract in the form annexed hereto within the line specified in the letter of intent and in default thereof the earnest money paid by the contractor shall be forfeited and acceptance of this Tender shall be considered as withdrawn. The cost of the stamp of the agreement is to be borne and paid by the contractor.

### **3.2 TOTAL SECURITY DEPOSIT:**

Total Security Deposit shall comprise:

- ☐ Earnest Money Deposit
- ☐ Initial Security Deposit
- ☐ Retention Money

### 3.2.1 EARNEST MONEY DEPOSIT:

- a) The Tenderer shall deposit an amount of Rs.21000.00 (Rupees Twenty One Thousand only) in the form of Demand Draft or Banker's cheque drawn in favour of **Bank of Baroda, Zonal Office, Ernakulam.**
- b) No Tender shall be considered unless the Earnest Money is so deposited. No Interest shall be paid on this Earnest Money Deposit. No exemption will be allowed
- c) The Earnest Money of an unsuccessful Tenderer will be refunded, without any interest, soon after the decision to award the work is taken.
- d) The Earnest Money Deposit shall stand absolutely forfeited if the Tenderer revokes his Tender at any time during the period when he is required to keep his Tender open for acceptance by the Bank, or if, after the Tender is accepted, the Contractor fails to enter into a formal agreement/or if he fails to pay the security deposit as stipulated/or if he fails to commence the work within stipulated time limit.

### 3.2.2 SECURITY DEPOSIT:

- a) The successful Tenderer to whom the Contract is awarded shall deposit as initial security deposit in cash /by Bank Draft/Bank Guarantee a sum to make up 2% of the value of the accepted Tender after the appropriation of the Earnest Money deposited by him.
- b) The successful Tenderer shall pay initial security deposit within 7 (Seven) days after receiving the letter of acceptance of his Tender. No interest shall be paid on this security deposit.
- c) The security deposit, either in whole or in part thereof, shall be forfeited in the event of the Contractor's failure to observe any terms of this Contract/or non-compliance with the conditions of the Contract.
- d) On virtual completion of the job and on the Contractor's submitting to bank through "As built" drawings, bank shall refund Security Deposit after adjusting any dues recoverable from the contractors

### 3.2.3 RETENTION MONEY:

- a) In addition to the Initial Security Deposit, retention money shall be deducted from running account bills at 8% of gross value of certified work.
- b) If the Contractors do not carry out the rectification work during the Defects Liability Period of -12-months, the Banks shall have the right to get such defective work rectified after giving due notice in writing to the Contractors and recover the cost of repairs from the monies so retained.
- c) The 8% retention amount will be released upon completion of one calendar year from the date of acceptance of Virtual Completion within 30 days after adjusting all dues if any from the contractor upon issuance of certificate and recommendation by Architect of having rectified all defects and now there are no defects in works.

## 3.3 ACCESS TO WORKS:

The **Bank** and any person authorised by them shall at all reasonable times have free access to the works, and to the workshops, Factories or other places where materials are being prepared or constructed for the Contract and also to any place where the materials are lying or from which they are being obtained. The Contractor shall give every facility to the **Bank** and their representatives for inspection and examination and test of the materials and workmanship. No person unless authorised by the **Bank**, except the Representatives of Statutory Public Authorities authorised by the Bank,

shall be allowed on the works at any time. If any work is to be done at a place other than the site of the works, the Contractor shall obtain the written permission of the **Bank** for doing so.

### **3.4 TENDERER TO VISIT SITE:**

**Each Tenderer must before submitting his Tender visit the site of works so as to ascertain the physical site conditions and prices, availability and quality of materials according to Specifications before submitting the quotations.**

### **3.5 INSPECTION OF SITE AND SUFFICIENCY OF TENDER:**

- 3.5.1 The Contractor shall inspect and examine the site and its surrounding and shall satisfy himself before submitting his Tender as to the form and nature of the site, the quantities and nature of access to the site, the accommodation he may require and in general, shall himself obtain all necessary information as to risk, contingencies and other circumstances which may influence or affect his Tender.
- 3.5.2 The Contractor shall be deemed to have satisfied himself before Tendering as to the correctness and sufficiency of his Tender for the works and of the rates and prices quoted in the Schedule of work/items/quantities or in Bills of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for proper completion and maintenance of the works.
- 3.5.3 No extra charges consequent on any misunderstanding or otherwise shall be allowed.

### **3.6 INTERPRETATION OF CONTRACT DOCUMENTS**

- 3.6.1 The various sections of Tender / contract documents are intended to be complementary to one another.
- 3.6.2 In case of a discrepancy in the description of a subject between different sections, the following guidelines shall generally apply.
- 3.6.3 Special Conditions of Contract shall override General Conditions of Contract.
- 3.6.4 Special specifications shall override General specifications.
- 3.6.5 For the sole purpose of determination of rates and prices, the Schedule of Quantities including its Preamble shall override Specifications and drawings.
- 3.6.6 Detailed drawings shall override General layout drawings.
- 3.6.7 Hard copies of the drawings shall override Softcopies.
- 3.6.8 Irrespective of these general guidelines the Contractor shall bring any discrepancy he notices immediately to the attention of the **bank** and shall follow instructions accordingly.

## **4. QUALITY CONTROL**

### **4.1 QUALITY ASSURANCE:**

The contractor shall prepare a detailed quality assurance programme to control activities connected with the work to ensure a quality job at various stages

- ☐ Planning
- ☐ Execution
- ☐ Completion
- ☐ Post Completion Maintenance

### **4.2 TECHNICAL DATA:**

Technical Data of relevant items shall be furnished as required

### **4.3 ACTION WHERE THERE IS NO SPECIFICATION:**

In the case of any class of work for which there is no Specifications mentioned, the same shall be carried out in accordance with the Indian Standard Specifications subject to the approval of the **bank**.

#### **4.4 EXTENT OF CONTRACT:**

Items executed shall be complete in all respect with accessories, fittings as required though they may not have been specifically mentioned in the technical specification. All similar standard components/parts of similar items shall be inter-changeable.

#### **4.5 MATERIALS & WORKS**

##### **4.5.1 APPROVAL OF SUPPLIERS:**

For all supplies, the names of manufacturers/brands have to be got approved from the Bank after getting the respective samples. All materials will be of tested quality and as per relevant Indian Standards.

##### **4.5.2 MATERIALS SUPPLIED BY THE BANK:**

If the Bank supplies any materials, the Contractor must satisfy himself that the same conform to the Specifications. If the Contractor has any complaint, about the said materials, or the quality thereof the Contractor before using the said materials inform in writing all their objections to the Bank. Should the Contractor fail to do so, he will be deemed to have satisfied himself as to the quality and the suitability of the said materials for being used in the Contract works and the Contractor will be in the same position as if the Contractor himself had purchased the said materials.

##### **4.5.3 MATERIALS AND WORKMANSHIP TO CONFORM TO DESCRIPTION:**

- a) All materials and workmanship shall, be of the respective kinds specified in the Schedule of Quantities and /or specifications and in accordance with bank instructions and / or any test of all materials, which the contract may require. The Contractor shall submit the samples of various materials, to **Bank** for approval. Further, the contractor shall furnish him with all invoices, accounts, receipts and other vouchers to prove that the materials comply therewith. The contractor shall at his own cost arrange for and/or carry out the test of any materials which the bank may require.
- b) If the Contractor contends that any of the materials, goods or workmanship specified as aforesaid, is unobtainable, he shall submit to the Bank his grounds for his contention, and thereupon verification of the same and if required to issue necessary clearances and/or instruction in writing.

#### **5. VARIATIONS**

##### **5.1 VARIATIONS NOT TO VITIATE CONTRACT:**

- 5.1.1 The Contractor shall when directed in writing by the **bank** to omit from or vary any works shown upon the drawings or described in the specifications or included in the priced Schedule of Quantities, carry out such directions but the Contractor shall not make any alterations in the provisions of the Contract without such authorization or direction in writing from the **Bank**.
- 5.1.2 No claim for any extra work executed shall be allowed unless it shall have been executed by the authority of bank as herein mentioned. No variation, i.e. additions, omissions or substitutions shall vitiate the Contract.



- 5.1.3 No claim for payment for extra work shall be allowed unless the said work shall have been executed under the provisions of Clause "Authorities, Notices, Patent Rights and Royalties", or by the authorities, directions in writing of the bank as herein mentioned.
- 5.1.4 The rate of items not included in the Bill of Quantities shall be settled by the **bank** in accordance with the provisions of relevant clauses for variations.

## **5.2 VARIATIONS TO BE APPROVED BY THE BANK**

- 5.2.1 Notwithstanding anything herein contained the rates for such extra/variation items shall be derived as far as possible from like items in the Tender, adding/subtracting cost for such variations from like items.
- 5.2.2 In the event of such extra/variation items totally differ in specification/character/nature, rates for such items will be worked out based on prevailing market rates for the ingredients that go into making such of items and finalized by the **Bank**.

## **5.3 DEFECTS**

### **5.3.1 DEFECTS AFTER COMPLETION:**

Any defect in work and materials or due to unsound installation or other faults which may appear either in the work executed or in materials used within the "**Defects Liability Period**" stated in the **Appendix to General Conditions of Contract** hereto or if none stated, then for a period of twelve months after the Virtual Completion of the work, arising in the opinion of the **Bank** from materials or workmanship not being in accordance with the Contract, shall upon the directions and writing of the **bank**, and within such reasonable time as shall be specified therein, be amended and made good by the Contractor, at his cost. In case of default by the contractor, the Bank may employ and pay other persons to correct the faults, and all damages, loss and expenses consequent thereon or incidental thereto shall be made good and borne by the Contractor and such damage, loss and expenses shall be recoverable from him by the Bank or may be deducted by the Bank from the amount retained with the Bank vide relevant Clause for "Certificate and Payment" or any money due or that may become due to the Contractor or the Bank may in lieu of such amending and making good by the Contractor, deduct from such money a sum, to be determined by the bank equivalent to the cost of amending such works, and in the event the said amount retained under relevant clause For "Certificate and Payment" and/or the other sums payable to the Contractor being insufficient, recover the balance from the Contractor.

### **5.3.2 INSPECTION & TESTS**

#### **a) ACCESS FOR INSPECTION:**

The Contractor is to provide at all times during the progress of the works and the maintenance period proper means of access, ladders, gangways etc. and the necessary attendants to move and adapt the same as directed for the inspection or measurement of the works by the Bank.

### **5.3.3 TESTING OF WORKS AND MATERIALS AND PREPARATION OF SAMPLES:**

- a) The Contractor shall arrange to test materials and/or portions of the works as instructed by Bank to specifications/ ISI standards at his own cost, in order to provide their soundness and efficiency. If after any such test, the work or portions of the works are found to be defective or unsound, the Contractor shall pull down and re-erect the same at his own cost.
- b) Samples of various materials shall be submitted by the Contractor for approval prior to ordering out the same. Wherever necessary the Contractor shall, at his own cost, prepare samples to indicate the workmanship.

### **5.3.4 TEST DATA**

All the materials shall be tested jointly with the Bank as required by the various sections of the specification and Test Data shall be furnished as required.

**5.3.5 GENERAL CONDITIONS FOR TESTS TO BE CALLED FOR APPROVAL PURPOSE**

- A) The Contractor shall carry out in the presence of Bank's Representative all specified tests. Such tests shall be carried out at the manufacturer's works or at the works of the Contractor or approved Sub-Contractor.
- B) The Contractor shall then forward all the relevant copies of Tests so performed in 3 sets for the record of the **Bank**. No compensation of any kind will be payable to the Contractor for carrying out such tests.
- C) The Contractor shall give clear 15 days' notice in writing for all such tests to be carried out at relevant place of Manufacture, Works, and Sub-works etc.

**6. COST CONTROL**

**6.1 QUANTITIES**

**6.1.1 SCHEDULE OF QUANTITIES:**

- a) The Schedule of the Quantities unless otherwise stated shall be deemed to have been prepared in accordance with the standard procedure of the **bank**, and shall be considered to be approximate and no liability shall attach to the **Bank** for any error that may be discovered therein.

**6.1.2 SUFFICIENCY OF SCHEDULE OF QUANTITIES:**

- a) The Contractor shall be deemed to have satisfied himself before Tendering as to the correctness and sufficiency of his Tender for the works and of the prices stated in the Schedule of Quantities and/or the Schedule of Rates and Prices, which rates and prices shall cover all his obligations under the Contract, and all matters and things necessary for the proper completion of the works.
- b) The Contractor shall check all the interior drawings and details prepared by the **bank** and report errors if any in the drawings or details.

**6.1.3 ERRORS IN SCHEDULE OF QUANTITIES:**

- I. Should any error appear in the Schedule of Quantities, other than in the Contractor's prices and calculations, it shall be rectified, and such rectification shall not vitiate the Contract but shall constitute a variation of the Contract and shall be dealt with as an authorized extra or deduction

**6.1.4. Prime cost & Provisional sums:**

- a) Where "Prime cost"(p.c.) prices or provisional sums of moneys are provided for any goods or work in the specification / Schedule of Quantities the same amount will be exclusive of any trade discounts or allowances, cash-discounts, profit, carriage and fixing which the contractor may require.
- b) All goods or work for which prime cost prices or provisional sums of money are provided may be selected or ordered from any manufacturers or firms at the discretion of the Architect of the Bank and the Bank reserves to himself the right of paying direct for any such good or Work and deducting the said prices and sums from the amount of contract. Should any good or work for which prime cost prices or provisional sums are provided or portions of the same be not required, such prices of sums, together with the profits allowed for the same and such additional amounts as the contractor may have allowed for carriage and packing will be deducted in full from the contract, whether the goods be ordered by the contractor or otherwise, the contractor shall at his own cost fix the same if called upon to do so and the contractor shall also receive and sing for such goods and be responsible for their safe custody from the date of their delivery upon the works.

- c) In cases in which the provisional quantities of materials are contained in the contract, the contractor shall provide such material to such amounts or to greater or less amounts as the bank shall direct in writing as the net rates at which he shall have priced such items in his schedule of Quantities, should however any such items be entirely omitted, which omission shall be at the Architect's discretion, no profit or such items shall be allowed to the contractor.
- d) No prime costs sum or sums (or any portion thereof) shall be included in any certificate for payment to the contractor until the receipted accounts relating to them have been produced by the contractor to the Architect. Such accounts shall show all discounts and any sum or sums in respect of such discounts shall be treated as trade discount provided always that should the contractor in lieu of producing such receipted accounts request the Architect in writing to issue a Certificate on the Bank for such sum or sums due either on account in settlement to a sub-contractor direct, the architect shall, upon satisfying himself that the sub-contractor is entitled to the same, so issue the certificate, and such sum or sums shall be deducted from the amount of the contractor at the settlement of accounts and any profit or further sum which the contractor is properly entitled in respect of such sub- contract, and which is in conformity with the terms of the contract, shall be allowed to the contractor at the settlement of accounts as though the amount of such certificate to the sub-contractor had been included in a certificate drawn in favour of the contractor.
- e) If the Contractor neither produces the receipt nor gives authority to the bank to issue a certificate in favour of such sub-contractor directly, the Architect shall, upon giving the contractor seven days' notice in writing of his intentions to do so, issue to the Sub-contractor such Certificate directly on the Bank and obtain the receipt from the Sub-contractor, which receipt shall be deemed a discharge for the amount of such certificate as though given by the Contractor. In the event of such default on the part of the Contractor, he shall not be allowed any profit he may have added in the Schedule of Quantities upon such Such-contract.
- f) The exercise of the option before referred to by the contractor and the issue of certificate as before described to Sub-contractors upon the Contractor's request on the issue to sub-contractor direct of certificate by the Architect shall not, however, relieve the Contractor from any of the liabilities in respect of insufficient, faulty or in completed work or the Sub-contractor for which he may be liable under the terms of the contract.
- g) If any provisional items are provided for work of a nature usually carried out by the contractor in the ordinary course of his business, the Bank shall give the contractor an opportunity of Tendering for the same without prejudice to the Bank's right to reject the lowest or any Tender.

## 6.2 VARIATIONS

### 6.2.1 EXTRA ITEMS / DEVIATIONS:

- a) The Contractor shall not commence work in respect of any extra items/deviations without obtaining the approval of the **bank** in writing. The Contractor shall immediately submit the rate analysis for such item, with necessary details to support the rate quoted. The rate shall then be settled by the / **Bank** and necessary certificate based on this shall be given to Bank while incorporating the item in the Interim Bills.
- b) Claims for extra/deviated items shall be submitted in the as per specimen copies of Proforma included in this Tender document that indicate authority/order for such items.

### 6.2.2 SCHEDULE OF QUANTITIES - VARIATION IN TENDER QUANTITIES

Quantities in this Tender are subject to variation by way of addition, reduction or deletions of the items or quantities. No compensation whatsoever will be paid for such variations.

### 6.2.3 PRICES FOR EXTRAS ETC. - ASCERTAINMENT THEREOF:

Should it be found from measurements taken in accordance with the clause on "Measurement of works" that any of the quantities or amounts of works thus ascertained are less or greater than the amounts specified for the works in the priced schedule of quantities and/or that any variation is made from the Tender schedule of items by operating Additional items called "Extra Items" or "Substitute Items" in substitution of some Tendered items, the rate and valuation thereof, of such items unless previously or otherwise agreed upon, shall be made in accordance with the following rules: -

- a) The net rate or prices in the original Tender shall determine the **valuation of the extra quantities** where extra quantities for any item are of similar character and executed under similar conditions as the work priced therein. In other words variation in quantities shall be measured and paid at quoted price only.
- b) The net rate or prices in the original Tender shall determine the **rate for the items altered**, provided if omissions / additions vary the conditions under which any remaining items of works are carried out, the prices for the same shall be valued under (b) hereof.
- c) For extra items/Substitute items where the description of items is different from that of any Tendered item, the following method shall hold good.
- d) Where the extra item works are not of similar character and/or executed under condition as aforesaid or where the omissions vary, the conditions under which any remaining items of works are carried out or if the amount of any omission or additions relative to the amount or the whole of the Contract works or to be any part thereof shall be such that in the opinion of the **bank** the net rate or price contained in the priced Schedule of Quantities or Tender or for any item of the works involves loss or expenses beyond that reasonably contemplated by the Contractor or is by reason of such omission or addition rendered unreasonable or inapplicable, the **bank** shall fix such other rate or price as in the circumstances he shall think reasonable and proper on the basis of actual rate analysis cost of work involved plus fifteen percent (15%) towards Contractor's overheads and profits, which shall be final and binding on the Contractor.
- e) The measurement and valuation in respect of the Contractor shall be completed within the "period of Final Measurement" or within three months of the completion of the Contract works as defined under Clause for "Certificate of Virtual Completion".
- f) The Contractor shall submit the claims for Deviated items and Extra items as per proforma annexed hereto.

## 6.3 MEASUREMENTS

### 6.3.1 MEASUREMENT OF WORKS:

- a) The **bank** shall from time to time intimate the Contractor that he requires the works to be measured and the Contractor shall forthwith attend or send a qualified agent to assist the **bank** in taking such measurements and calculations and to furnish all particulars or give all assistance required by either of them.
- b) Should the Contractor omit to attend or neglect or omit to send such agent, then the measurements taken by the **bank** or approved by him shall be taken to be the correct measurements. The works shall be measured according to the mode of measurements specified in the Contract documents and, where no mode is specified, as per the latest edition of relevant I.S. Codes.
- c) A certain percentage of measurements will be checked/test checked by the Bank as the case may be for each trade, and for this the contractor has to render all necessary assistance and co-operation.
- d) The Contractor or his Agent may at the time of measurement take such notes and measurements as he may require.

e) All authorized extra works; omissions and all variations made without the **bank's knowledge**, but if subsequently sanctioned by the Bank in writing, shall be included in such measurements.

### 6.3.2 MODE OF MEASUREMENT

- a) The mode of measurement for this contract shall be on item rate basis and shall include all quantities specified in the Schedule of Quantities of this Tender/ contract. It shall be further deemed that all variations and deviations if specifically agreed to in writing shall also form part of this Tender/ contract and shall be subject to measurements. All payments released to the Contractor shall be subject to verification of quantities on the basis of mode of measurements herein stated.
- b) If the mode of measurement for any or all item is not specified in the contract, latest relevant IS. Code will prevail.
- c) The Contractor shall give due notice to the Bank in writing whenever any work is to be concealed or made inaccessible, in order that the work may be inspected and correct measurements are recorded before such concealment, in default whereof the same shall be at the option of the **Bank** to either open up for measurement at the Contractor's expense or no allowance shall be made for such work.

## 6.4 PAYMENTS & CERTIFICATION.

### 6.4.1 CERTIFICATE & PAYMENT:

- a) The Contractor shall be entitled for periodic Interim Certificates for work done of a minimum value as specified in Appendix hereto to be issued by the **bank** to the Contractor, and within stipulated number of days for ad hoc payment (if allowed) and for full settlement of the bill as indicated in appendix to General Condition of Contract hereto, subject to work being executed in accordance with this Contract and reasonable scrutiny by the Bank. The Retention at the given percentage rate of the value of certified work as indicated in the appendix subject to the specified limit shall be deducted from running bills. The Contractor shall be entitled under the Certificate to be issued by the **bank**, to receive payment of 100% security amount (2% of the contract amount collected on award of the contract) after virtual completion of the work and 8 % retention amount at the end of the defects liability period of twelve months, provided the defects are made good, according to the true intent and meaning hereof after due completion of work.
- b) The **bank** shall have the powers to withhold any Certificate if the works or any part thereof is not carried out to his satisfaction.
- c) The **bank** may by any Certificate make any correction in any previous certificates, which shall have been issued by him. In the event if it comes to the Bank's notice any omission or corrections required in bill, the Bank shall effect necessary corrections and the contractor shall be bound to accept the same. This certificate is particularly essential for settlement and payment of the Final Bill.
- c) The Contractor shall submit interim bills only after working out the appropriate measurements jointly recorded with **bank** at site in a register and showing the register to **bank**. This is not only to regulate the correctness of the quantity but also to facilitate expeditious clearing of the bills. The bills shall be submitted in the following proforma.

| As per Tender   |                   |          |           | Previous Bills | Up-to-Date Bills |                | Remarks |
|-----------------|-------------------|----------|-----------|----------------|------------------|----------------|---------|
| Tender Item No. | Brief Description | Qty Unit | Rate/unit | Qty Unit       | Qty Unit         | Amt. Rs. /Unit |         |
|                 |                   |          |           |                |                  |                |         |
|                 |                   |          |           |                |                  |                |         |
|                 |                   |          |           |                |                  |                |         |

**Note:** If any part/reduced rate is proposed by the Contractor (recommended by Architect / Consultant) the same should be brought out in the remarks column along with reasons.

- d) The Bank shall carry out test checking of measurement as and when required.
- e) The final bill shall be submitted by the Contractor within One month of Virtual Completion Certificate received by the Contractor and such bill shall be settled and certified for payment by the **bank** within four after verification/joint measurement by bank with the contractor.

#### **6.4.2 Payment Terms:**

- I. All bills shall be prepared by the contractor in the form agreed or furnished by the Employer.
- II. No mobilization advance amount will be paid to the firms.
- III. Bank shall release running bills /interim bill (Rs. 5.00 Lakhs) after due verification at the site
- IV. Any certificate given by the Engineer-in-charge relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specification.
- V. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer-in-charge/employer under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.
- VI. Pending consideration of extension of date of completion interim payments shall continue to be made as herein provided.
- VII. All the payments, interim or otherwise other than the initial advance, are subject to statutory deductions of Income Tax & its Surcharge, Sales tax deductions as notified by respective Local State Government/Authority and any such instructions conveyed from time to time. From the interim bills, the retention money as detailed elsewhere in this tender shall also be deducted.

#### **6.4.3 CERTIFICATE FOR PAYMENT TO CONTRACTOR:**

The Contractor's bills will be submitted to Bank through the **bank** for payment as per Proforma enclosed for Interim Bill Certificate and final Certificate. The bank in confirmation that the work has

been carried out satisfactorily as per detailed drawings and specifications will endorse and certify the bill.

#### **6.4.4 CERTIFICATE OF VIRTUAL COMPLETION OF WORKS:**

- a) The Contractor shall report in writing to the **bank**, in the form of a Certificate as per Proforma 'D' annexed hereto as and when the works are completed in all respects. The **bank** shall after the verification of the works and in Consultation with Bank issue to the Contractor a certificate to be called "Virtual Completion Certificate", a copy whereof shall be submitted to the Bank to enable them to take possession of the completed works.
- b) The works shall not be considered as completed till the Architect certifies in writing that all the work including those mentioned in **the snag list** prepared jointly with Bank prior to the acceptance of the Virtual Completion. The defect liability period shall commence only from the date of issue of such certificate.

#### **6.4.5 LIEN ON SUMS PAYABLE TO THE CONTRACTORS**

Any sums of money due and payable to the Contractor including any deposits returnable to them under this Contract may be withheld or retained by the Bank, against any claim of the Bank against the contractor in respect of any sums of money due under this contract or any other contract made by the Contractor with the Bank, but limited to the amount of Bank's claim and the Bank shall always have a lien upon the money so withheld or retained as such by the Bank until appropriated towards such claim. The contractor shall not be entitled to claim any interest or damages whatsoever on such retained or appropriated sum.

### **7. PROJECT MANAGEMENT**

#### **7.1 PROGRAM OF WORK:**

7.1.1 The Tenderer shall, along with his bid, submit a schedule for completion of work, either in the form of a CPM Net Work or in the form of a bar chart, showing how he proposes to complete the works. This program shall be prepared in sufficient detail and shall indicate, among other things, the following details on a month-to-month basis (for each month).

- a) Quantum of work under each major item of work that would be carried out.
- b) List of Sub-contractors.
- c) Amount of resources that would be deployed (e.g. materials, skilled/unskilled labour, equipment etc.)
- d) Schedule of delivery of materials to site.
- e) Approximate value of work contemplated to be completed each month.
- f) Schedule and manner in which details or materials (to be issued by the Bank) are required from the **Bank**
- g) Time periods allowed for other agencies' work,
- h) Various milestones to be achieved.

7.1.2 This program suitably amended after discussions with the **bank** shall become binding on the Contractor. However, during the execution of the project, should it become necessary, in the opinion of the **bank** to reschedule some of the activities, the Contractor shall do so at no extra cost and/or without any other claim.

- 7.1.3 Acceptance of a bidder's Tender does not necessarily imply acceptance of the schedule submitted and the **Bank** reserve the right to modify/amend this schedule to suit the overall project schedule which will be binding on the Contractor at no extra cost to the Bank.

## 7.2 COMMENCEMENT OF WORK

The contractor shall be allowed admittance to the site on the "date of Commencement" stated in the tender and on submission of the valid tamper-proof photo Identity Card (and/or in any other form), duly endorsed by the Contractor, for all their labour, and staff in accordance with the Banks prevailing security requirement.

- 7.2.1 The Contractor shall commence work from the date of acceptance of work order or from the date of handing over of site by the Bank, whichever is later. Until the site is partly / fully handed over to the Contractor, the commencement of work shall include off-site activities including planning, procurement of materials shop drawings, manufacture/fabrication, interaction with **bank**, other contractors etc.

## 7.3 DATE OF COMPLETION:

- 7.3.1 The entire work shall be completed in all respects including testing commissioning within -60- days from the date of commencement of the work as defined above.
- 7.3.2 Monsoon season is included in -60- days period i.e. completion period of work.
- 7.3.3 Time is the essence of the Contract.
- 7.3.4 The work shall not be considered as complete until the **bank** have certified virtual completion in writing. The defects liability period shall commence from the date of virtual completion.
- 7.3.5 Virtual completion means when is site is ready to be taken over by bank.
- 7.3.6 During the period of Contract, the Contractor shall maintain progress on the basis of the programme initially agreed to by **Bank** and later updated from time to time in consultation with **Bank** to suit the overall project schedule and prevailing site conditions.

### 7.3.5 DELAY AND EXTENSION OF TIME:

- a) If in the opinion of the **Bank** the works be delayed
- (i) by force majeure or
  - (ii) by reason of any exceptionally inclement weather or
  - (iii) by reason of proceedings taken or threatened by the dispute with adjoining or neighbouring Banks or public authorities arising otherwise than through the Contractor's own default or
  - (iv) by the works or delays of other Contractors or tradesmen engaged or nominated by the Bank or the **bank** and not referred to in the Schedule of Quantities and/or Specifications or
  - (v) by reason of the **bank's instructions**.
  - (vi) by reason of civil commotion, legal combination of strike or lock-out affecting any of the building traders or in consequence of the Contractor not having received in due time necessary instructions from the **bank** for which he shall have specifically applied in writing, ahead of time, giving the Consultant reasonable time to prepare such instructions, the Bank shall make a fair and reasonable extension of time for completion of the Contract works. In case of such strike or lock-out, the Contractor shall, as soon as may be, given written notice thereof to the **bank**, but the Contractor shall nevertheless constantly use his endeavours to prevent delay and shall do all that may reasonably be required to the satisfaction of the **bank** to proceed with the work.



- b) The Contractor shall proactively take all practicable steps to avoid or reduce any delay in the execution and completion of the works arising out of
  - i) Force Majeure
  - ii) Exceptionally inclement weather
  - iii) Loss and damage by fire and earthquake
  - iv) Civil commotion, lockout, strike etc.
  - v) Delay on the part of the nominated Sub-Contractor or nominated supplier.
  - vi) Delay on the part of the other Contractors employed by the Bank.

#### **7.4 SUSPENSION OF WORKS:**

The **bank** may in an extreme case and in prior consultation with the Bank suspend works if the quality or safety of the works are likely to be compromised due to heavy rains, natural calamities etc. The **bank** may grant such extension of time with the approval of the Bank as may be justified by such a delay in the works. The Contractor shall not be entitled to any compensation on account of such delay

#### **7.5 WORK AT NIGHT:**

- 7.5.1 If the Contractor is required to work at night in order to complete the work within the Time Schedule, the Contractor shall provide and maintain at his own cost sufficient lights to enable the work to proceed satisfactorily without danger. Approaches to the site also shall be sufficiently lighted by the Contractor. No extra payments will be made for night work. Prior intimation and approval should also be taken from **bank**. Also, if needed, the contractor will be bound to visit the site upon the call of the bank.

#### **7.6 WORK ON HOLIDAY:**

- 7.6.1 No work shall be done on national holidays that may be notified by the Bank without the specific sanction in writing of the Bank.

### **8 PERFORMANCE**

#### **8.1 GENERAL**

##### **8.1.1 INDEPENDENT CONTRACTOR**

The Contractor agrees to perform this Contract as an independent Contractor and not as a sub-Contractor, agent or Employee of the Bank.

##### **8.1.2 ASSIGNMENT OR SUB-LETTING:**

- a) The whole of the works included in the Contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or underlet the Contract or any part/ share thereof or interest therein, nor shall he take a new partner, without the written consent of the **Bank** and no undertaking shall relieve the Contractor from the full and entire responsibility of the Contract or from active superintendence of the works during their progress.
- b) **Nominated Sub-contractors :**
  - i) 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 and/or Specifications who may be nominated or selected by the 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 works against whom the contractor shall make reasonable objection or (Save where in the Architect and Contractor shall otherwise agree) who will not enter into contract provided:-
- ii) That the nominated Sub-contractor shall indemnify the contractor against the same obligations in respect of the Sub-contract as the contractor is under in respect of this contract.
  - iii) 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 plant, the property of the contractor or under any Workmen's Compensation Act in force.
  - iv) Payment shall be made to the nominated Sub-contractor within **15 days** of his receipt of the bank's certificate provided that before any certificate is issued the contractor shall upon request furnish to the bank proof that all nominated Sub-contractor's accounts included in previous certificates have been duly discharged; in default whereof the Bank may pay the same upon a certificate from the Architect and deduct the amount thereof from any sums due to the contractor.

#### **8.1.3 OBTAINING INFORMATION:**

- a) No claim by the Contractor for additional payment will be entertained which is consequent upon failure on his part to obtain correct information as to any matter affecting the execution of the works, nor will any misunderstanding or the obtaining of incorrect information or the failure to obtain correct information relieve him from any risks or from the entire responsibility for the fulfilment of the contract.

#### **8.1.4 THE SETTING OUT:**

- a) The Contractor shall at his own expense, set out the works accurately in accordance with the plans. The Contractor shall be solely responsible for the true and perfect setting out of the works, and for the correctness of the position, levels, dimensions and alignment of all parts thereof. If at any time any errors shall appear during the progress or on completion of any part of the work, the Contractor shall at his own cost rectify such error if called upon to the satisfaction of the **bank**. The Bank and/or its representatives shall time to time inspect the work but such inspections shall not exonerate the Contractor in any way from his obligations to remedy any defects, which may be found to exist at any stage of the work or after the same is completed.

#### **8.1.5 PERFORMANCE**

- a) The Contractor shall be fully and solely responsible for proper, safe and efficient design and performance of his equipment and installation, in conformity with drawings and parameters and specifications stipulated in the Contract documents.
- b) In case the Contractor finds that anything contained in drawings, specifications or given parameters will not ensure such performance and compliance with best trade practices and codes, rules and regulations laid down by Authorities, he shall bring such matters to the attention of the **bank** and shall follow their instructions.
- c) The contractor shall also guarantee that the performance of the various materials and items individually shall not be less than specified ratings when working under operating conditions given for the respective items

#### **8.1.6 EXECUTION OF WORK:**

- a) The whole of the work as described in the Contract (including the Schedule of Quantities, Preamble, the Specifications and all drawing pertaining thereto) and as advised by the **bank from** time to time is to be carried out and completed in all its parts to the entire satisfaction of the **bank**.

- b) Any minor details of manufacture, fabrication and installation which are obviously and fairly intended, or which may not have been definitely referred to in this Contract, but which are usual in sound interiors execution practice and essential to the work, are to be included in the Contract. Rates quoted in the Schedules shall be inclusive of all freights, taxes, such as GST, Octroi, Sales Tax, Excise Tax, Work Contract Tax, Royalties, VAT etc. as well as transportation so as to execute the Contract as per the rules and regulations of Local Bodies, State Government and the Government of India, and to the full intent of Tender documents.
- c) Following shall be deemed to be provided for in the quoted rates:
- i) Labour for constructing, fixing, finishing, carrying, cleaning, making good etc.
  - ii) Framework, ladders, ropes, nails, spikes, tools, material and workmanlike protection from weather, temporary supports.
  - iii) Covering for the works during inclement weather or strikes or whenever directed, as necessary.
  - iv) All temporary canvass, lights, tarpaulin, barricades water-sheets etc.
  - v) All such temporary weatherproof sheds at such places and in a manner approved by the **bank** for the storage and protection of materials against the effects of Sun or rain.
  - vi) All minor civil works like breaking and making good of masonry walls to original condition for passage of cables, cable trays, etc.
  - vii) Provision of necessary frames (MS/wooden) for dressing up of wall/RCC openings and for installation of Fans etc. if instructed by **bank**. Drawings for framework to be got approved from **bank**.
  - viii) All the required temporary arrangements to for execution of works to be made by the contractor only at no additional cost. Halting facility, toilet facility, drinking water facility and water for other use facilities to be provided by the contractor only at no additional cost.
  - ix) The rate quoted by the Tenderer in the schedule of probable quantities will be deemed to be for the finished work inclusive of the cost of providing the above items.

### 8.1.7 SITE MANAGEMENT

#### 8.1.7.1 CONTRACTOR TO PROVIDE EVERYTHING NECESSARY:

- a) The Contractor shall provide everything necessary for the proper execution of the works according to the true intent and meaning of the Drawings, Specifications and Schedule of Quantities taken together whether the same may or may not be particularly shown or described therein, provided that the same can reasonably be inferred wherefrom and if the Contractor finds any discrepancy in the Drawings or between the Drawings, Specifications and Schedule of Quantities he shall immediately refer the same in writing to the **bank**, who shall decide which shall be followed, and his decision shall be final and binding on all parties. The Contractor shall provide ground for himself and fresh water and power for carrying out of the works at his own cost.
- b) The Bank shall not charge the Contractor for his own un-rented ground but shall on no account be responsible for the expenses incurred by the Contractor for hired ground.

- c) The Contractor shall provide and maintain all measuring and testing instruments at all times for properly carrying out the work and for the use of the **bank**, including providing skilled attendants as required.
- d) The Contractor shall supply, fix and maintain at his cost during the execution of any works, all the necessary equipment, materials and lighting required by night and as well as by day for proper execution of work. The contractor shall take down and remove any or all such unwanted waste materials, debris etc. as occasion shall require or when ordered to do so, and shall fully reinstate and make good all matters and things described during the execution of the works, to the satisfaction of the **bank**

#### **8.1.8 FACILITIES TO OTHER CONTRACTORS**

- a) The Contractor shall give full facilities and co-operation to other Contractors employed by the Bank and shall afford them reasonable opportunity for the execution of their works and for properly connecting and co-coordinating their works with the work of the other Contractors. The decision of the **bank** on any points of dispute between the various Contractors shall be final and binding on all parties concerned.

#### **8.1.9 STORES AT SITE:**

- a) The Contractor shall be allotted space / existing rooms on site subject to availability. The Contractor shall make his own arrangements to enclose, secure and guard the space allotted to him. Wherever there may be materials, which are likely to deteriorate by the action of the sun, rain or other elements, all such materials, tools etc shall be duly protected by the Tenderer from damage by weather or any other cause. All such stores and yards shall be cleared away and ground left in good and proper order, on completion of this Contract unless otherwise expressly mentioned herein.

#### **8.1.10 ELECTRIC POWER FOR INSTALLATION**

- a) The Contractor shall be given a temporary electrical connection at one location at or below ground level to be decided by the **Bank**. The Contractor shall, at his own cost, provide a sub-meter, cabling and wiring and switchboards complying with all laws, rules and regulations in force and ensuring the safety of everyone working or visiting on site.
- b) The Contractor shall regularly reimburse cost for electricity consumed to the Main Contractor at the same tariff rates as charged by the Electric Supply Company.

#### **8.1.11 GENERAL CONDITIONS OF SUPPLY OF MATERIALS FOR EXECUTING WORK**

The successful Tenderer before placing the orders or before supplying shall seek clearance in a meeting with the **Bank**. The final list of supply of materials shall however be made at the time of signing of the contract by the Bank in consultation with the **bank** and the successful Tenderer. The Contractor shall then strictly adhere to this approved list of makes and materials and proceed to supply the same. If any deviation and/or for any unforeseen reasons the makes or materials are to be altered, the contractor shall obtain the approval from the **Bank** in writing and then only he may proceed to supply.

#### **8.1.12 REMOVAL OF ALL OFFENSIVE MATTERS:**

- a) All soil, filth or other matter of an offensive nature taken out of any trench, sewer, drain or other place shall not be deposited on the surface, but shall be at once carried away by the Contractor and disposed off as per the rules and regulations of the Local Authorities concerned.

**8.1.13 UNFIXED MATERIALS:**

- a) When any materials intended for the works shall have been placed at site by the Contractor, such materials shall not be removed there from (except for the purpose of being used on the works) without the written authority of the **bank** and when the Contractor shall have received payment in respect of any Certificate in which the **bank** shall have stated that he has taken into account the value of such unfixed materials on the works, such materials shall become the property of the Bank, and the Contractor shall be liable for any loss or damage to any such materials.

**8.1.14 REMOVAL OF IMPROPER WORK AND MATERIALS:**

- a) The **bank** shall, during the progress of the works, have power to order in writing from time to time the removal from the works, within such reasonable time as may be specified in the order, of any materials which, in the opinion of the **bank** are not in accordance with the specifications or the instructions of the **bank** and the substitution of proper materials and the removal and proper re-execution of any work, which has been executed with materials or workmanship, not in accordance with the Drawings and Specifications or instructions, and the Contractor shall forthwith carry out such order at his own cost. In case of default on the part of the Contractor to carry out such order the Bank shall have power to employ and pay other persons to carry out the same and all expenses consequent there on or incidental thereto shall be borne by the Contractor, and shall be recoverable from him on behalf of the Bank or may be deducted by the **bank** from any money due or that may become due to the Contractor.
- b) If the correcting works are not done in accordance with the Contract the **bank**, in consultation with the **Bank**, may allow such work to be got done through other parties at Contractors risk and cost and in that case they may make allowance for the difference in value together with such further allowance for damages to the Bank as in their opinion may be reasonable.

**8.1.15 CLEARING THE SITE OF WORKS:**

- a) The Contractor shall clear site of works as per the instructions of the **bank**. The site of works shall be cleared of all men, materials, sheds, etc. belonging to the Contractor. The site shall be delivered in a clean and neat condition as required by the **bank** within a period of one week after the job is completed. In case of failure by the Contractor, the Bank under advice of the **bank** will have the right to get the site cleared at the risk and cost of the Contractor to the satisfaction of the **bank**.

**8.1.16 OCCUPATION OF PARTIALLY COMPLETED WORKS BY THE BANK:**

- a) The Bank shall be entitled to and at liberty to occupy even the partially completed works or any portion thereof by themselves or through their agents and servants if they so desire, in which event, necessary extension of time on this account for completing the works shall however be granted to the Contractor, but he shall have no claim for any compensation whatsoever due to the delay involved in completing works. Both the Bank and the Contractor will work out the repercussions on the insurance Clause mentioned afore to mutual satisfaction safeguarding each other's interest.

**8.1.17 PREPARATION FOR OCCUPATION AND USE ON COMPLETION:**

- a) On completion of the work, the Contractor shall inform the **bank** in writing that he has finished the work and it is ready for the Bank's inspection. The Contractor shall clean all his works and

all the rooms under his charge. He will leave the entire works neat and clean and ready for occupation and to the satisfaction of the **bank**.

**8.1.18 KEEPING THE AREAS AND ACCESS ROADS CLEAN:**

- a) The Contractor shall be required to maintain the site and the building areas in a neat and clean condition at all times to the satisfaction of the **bank**. Debris to be removed every 2 days.
- b) The Contractor shall also be required to keep all access roads to the site and within the site free from all obstructions, material droppings etc. to the satisfaction of the Consultant and local authorities.

**8.1.19 COVERING UP OF WORKS:**

- a) The Contractor shall cover up and protect the works from the weather and shall suspend all wet operations during weather which, in the opinion of **bank**, will be detrimental to the works.

**8.1.20 MEASUREMENT TO BE RECORDED BEFORE WORK IS COVERED UP:**

- a) The Contractor shall take joint measurements with the **bank** before covering up or otherwise placing beyond the reach of measurement any items of work. Should the Contractor neglect to do so, the same shall be uncovered at the Contractor's expense or in default thereof, no payment or allowance shall be made for such work or the materials with which the same was executed.

**8.1.21 SITE SURVEY:**

- a) On award of the works, the Contractor shall immediately survey the complete site and record his findings on civil works and services connected with his works and submit the report in duplicate. No extra payment shall be made for this work.

**8.1.22 LABOUR HUTMENTS:**

- a) The Contractor shall not be allowed to put up any hutment/temporary structure of accommodating his labour/staff. He shall be required to make these arrangements elsewhere at his own cost. However, if the rules of local authorities so permit and subject to the contractor arranging for such permission, some space at site which will not come in the way of the permanent construction, temporary construction facilities and offices may be provided to the contractor at the discretion of the Bank for essential/core staff engaged on emergency or essential services round the clock work with proper sanitary facilities.

**8.2 STAFF MANAGEMENT**

**8.2.1 INFORMATION TO BE SUPPLIED BY THE CONTRACTOR:**

The Contractor shall furnish the Bank the following:

- a) Detailed industrial statistics regarding the labour employed by him, etc.
- b) The power of Attorney, name and signature of his authorized representative who will be in charge for the execution of the work.
- c) A list of technically qualified persons Employed by him for the execution of the work.
- d) The total quantity and quality of materials used for the work.

**8.2.2 APPOINTMENT OF ENGINEERS:**

- a) The Contractor shall appoint a Senior Engineer to the satisfaction of the **Bank**. The **Bank** shall be entitled to approve or disapprove without assigning reasons the appointment of such Engineer proposed by the Contractor. This condition shall be reckoned as being the essence of the contract and its breach shall make the Contract revocable at the option of the Bank. The Senior Engineer shall be assisted by a number of other Engineers and Supervisors in the respective disciplines as required for the smooth and satisfactory execution of the work. Contractor to pay remuneration to such engineer and supervisors appointed by them.
- b) The Engineer so appointed shall be available at all times when required by **Bank** to attend all site/office meetings to discuss all aspects of the Contract including design, administration, planning, fabrication, installation, commissioning, testing and defects liability maintenance as well as site co-ordination with all Contractors/Agencies.
- c) The Senior Engineer shall not be required to be present full time at site but shall be available at all times when required by **bank** to attend site/office meetings to discuss any aspect of the contract.

#### **8.2.3 SITE ENGINEER:**

- a) Successful Tenderer will have to, before receiving work order, select suitable Engineer to be interviewed by **Bank**. It will be the responsibility of the selected engineer to ensure that minutes of site meetings are maintained up-to-date. Contractors have to be up-to-date for each site meeting to be held.

#### **8.2.4 CONTRACTOR'S SUPERINTENDENCE & REPRESENTATIVE ON WORKS:**

- a) The Contractor shall give all necessary personal superintendence during the execution of the works and as long thereafter as the **bank** may consider it necessary until the expiration of the "Defects Liability Period" stated in the tender hereto.
- b) The Contractor shall maintain and be represented on site, at all times while the work is in progress, by a responsible and efficient Engineer In-charge, approved by the **bank** and who must thoroughly understand all the trades entailed and be constantly in attendance, while the men are at work. Any directions, explanations instructions or notices given by the **bank** to such Engineer In-charge shall be deemed to be given to the Contractor and shall be binding as such on the Contractor. The Engineer-in-charge shall be thoroughly conversant with the English Language and should be able to read, write and speak English.

#### **8.2.5 DISMISSAL OF WORKMEN:**

- a) The Contractor shall on the request of the **Bank** immediately dismiss from the works any person employed thereon who may, in the opinion of the **Bank**, be unsuitable or incompetent or who may misconduct himself and such person shall not again be employed or allowed on the works without the permission of the **Bank**.

#### **8.2.6 OTHER PERSONS ENGAGED BY THE BANK:**

- a) The Bank reserves the right to use the premises and any portion of the site for the execution of any work not included in this Contract which he may desire to have carried out by other persons, and the Contractor has to allow all reasonable facilities for the execution of such work, but is not required to provide any plant or material for the execution of such work, except by special arrangement with the Bank. Such work shall be carried out in such a manner as not to impede the progress of the works included in the Contract, and the Contractor shall not be responsible for any damage or delay which may happen to or be occasioned by such work.

### **8.3 SAFETY MANAGEMENT**

**8.3.1 ACCIDENTS TO LABOUR:**

The Contractor shall be fully responsible for the safety of the persons employed by him/firm on the works.

**8.3.2 Use of Explosives:**

Explosives shall not be used on the works by the contractor without the written permission of the **bank** and then only in the manner and to the extent to which He has prescribed. When explosives are used, the same shall be stored in a special magazine to be provided by and at the cost of the contractor, who shall be liable for all damages, loss or injury for non-compliance with all the statutory obligations.

**8.3.3 Safety codes/ Scaffolds**

Suitable scaffolds shall be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration work, which can be done safely from ladders. When a ladder is used, it shall be of rigid construction made either of good quality wood or steel. The steps shall have a minimum width of 450mm and a maximum rise of 300mm. Suitable hand holds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal to 1 vertical

- a) Scaffolding or staging more than 4 m. above the ground floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly bolted, braced or otherwise secured, at least 1m. 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 fastened to prevent it from swaying from the building or structure.
- b) Working platforms, gangways and stairway shall be so constructed that they do not sag unduly or unequally and if the height of the platform, gangway or stairway is more than 4m. above ground level or floor level, they shall be closely boarded and shall have adequate width and be suitably fenced as described in (ii) above.
- c) Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 m.
- d) Wherever there are open excavations in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into excavations.
- e) Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. in length while the width between said rails in rung ladder shall in no case be less than 290mm for ladder up to and including 3 m. in length. For longer ladders this width shall be increased at least 20mm. for each additional meter of length.
- f) A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to construction.
- g) 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.



**8.3.4 OTHER SAFETY MEASURES:**

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

**8.3.5 PERSONAL SAFETY EQUIPMENTS:**

- a) All necessary personnel safety equipment as considered adequate by the 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.
- b) Workers employed on mixing asphalt materials, cement and lime mortar shall be provided footwear and protective goggles.
- c) Those engaged in white washing and mixing or stacking of cement bags or any materials, which are injurious to the eyes, shall be provided with protective goggles.
- d) Those engaged in welding works shall be provided with welder's protective eyesight lids.
- e) Stonebreakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- f) 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 manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.
- g) The Contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Whenever men above the age of 18 are employed on the work of lead painting, the following precautions should be taken:
- h) No paint containing lead or lead products shall be used except in the form of paste or ready-made paint.
- i) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scraped.

- j) Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of the work.
- k) When the work is done near any public place where there is risk of drowning all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
- l) Adequate washing facilities should be provided at or near places of work. Contractor should not violate any provisions of labour enactment. If there is any violation, the contractor will be solely responsible for the penal action/damages taken/imposed by the statutory authorities.

#### **8.3.6 HOISTING MACHINES**

Use of hoisting machines and tackle including their attachments anchorage and supports shall conform to the following standards or conditions:

- i) This shall be of good mechanical constructions, sound material and adequate strength and free from patent defect and shall be kept in good repair and in good working order.
- ii) Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and adequate strength and free from patent defects.
- iii) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be in charge of any hoisting machine including any scaffolding winch or give signals to operator.
- iv) In case of every hoisting machine and of every chain ring hook, shackle, shovel and pulley block used in hoisting or as means of suspension of the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case, a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond its specified capacity.
- v) In case of departmental machines, the safe working load shall be notified by the engineer as regards contractor's machines, the contractor shall notify the safe working load of the machine to the engineer whenever he brings any machinery to site of work and get it verified by the engineer concerned.
- vi) Motors, 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 of the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations that 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 that are good conductors of electricity.
- vii) These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot .The person responsible for compliance of the safety code shall be named therein by the Contractor.

- viii) To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the Contractor shall be open to inspection by the Labour Officer, Engineers of the Department or their representatives.
- ix) Notwithstanding the above clauses there is nothing in these to exempt the Contractor from the operations of any other Act or Rule in Force in the Republic of India.

## **8.4 RISK MANAGEMENT**

### **8.4.1 WORK PERFORMED AT CONTRACTOR'S RISK:**

The Contractor shall take all precautions necessary and shall be responsible for the safety of the work and shall maintain all safe guards, including providing for guards, proper lights, signs, temporary passages, or other protection necessary for the purpose. All work shall be done at the Contractor's risk, and if any loss or damage shall result from fire or from other cause, the Contractor shall promptly repair or replace such loss or damage free from all expenses to the Bank. The Contractor shall be responsible for any loss or damage to materials, tools or other articles used or held for use in connection with the work. The work shall be carried on and completed without damage to any work or property of the Bank or of others and without interference with the operation of existing machinery or equipment, if any.

### **8.4.2 CONTRACTOR'S LIABILITY AND INSURANCE**

- a) From commencement to completion of works, the Contractor shall take full responsibility for the care of the work and for taking precautions to prevent loss or damage to the work to the maximum extent possible and shall be liable for any damage or loss that may arise to the works or any part thereof from any cause whatsoever including causes of fire, lightening, explosion, fire, earthquake, storm, hurricane, floods, inundation, subsidence, landslides, rock slides, riots (excluding civil war, rebellion, revolution and insurrection) or any latent defect or damage and shall at his own cost repair and make good the same so that at all times the work shall be in good order and condition and in conformity in every respect with the requirements of the Contract.

**Explanation:** For the purpose of this condition, the expression "from commencement to completion of works" shall mean the period starting with the date of acceptance of work order or date of handing over of site whichever is later and ending with issue of Virtual Completion Certificate. For the purpose of this Insurance clause only, handing over of site shall also include any handing over of space to the Contractor for the purpose of storage of materials and equipment.

- b) Without limiting the obligations and responsibilities under this condition, the Contractor shall insure and keep insured the works from commencement to completion, as aforesaid, as increased by 25% of the contract value against the risk of loss or damage from any cause whatsoever including the causes enumerated in the foregoing Clause (a). In the event of there being a variation in the nature and extent of the works, the Contractor shall from time to time increase or decrease the value of the insurance correspondingly. All the premium for the insurance shall be borne and paid by the Contractor only. The said insurance shall also provide cover for the removal of debris of the lost or damaged works. The said insurance shall be in the joint names of the Bank and the Contractor, Banks name being mentioned first in the policies and the Contractor shall deposit with the Bank the said policy or Policies before commencing the work. All money payable by the

insurer under such Policy/Policies shall be recovered by the Bank only and may be paid to the Contractor or any other agency of Bank's choice in the instalments for the purpose of rebuilding or replacing or repairing the works and/or goods destroyed or damaged as the case may be.

- c) The Contractor shall at all times indemnify and keep indemnified the Bank against all losses, claims, damages or compensation including under the provisions of the payment of the Wages Act 1936, Minimum Wages Act 1948, Bank's Liability Act 1938, Workman's Compensation Act 1923, the Maternity Benefit Act 1961, the Bombay Shops and Establishments Act 1947, Industrial Disputes Act 1947, and Contract Labour (Regulation and Abolition) Act 1970 and Employees State Insurance Act 1948, Motor Vehicles Act 1988 or any modifications thereof or under any other law relating thereto and rules made there under from time to time or as a consequence of any accident or injury to any workman or other person in or about the work whether in the employment of the Bank or Contractor or not, and also against all costs, charges and expenses of any suit, action or proceedings whatsoever out of such accident or injury or combination of any such claims.
- d) Before commencing the work, the Contractor shall without limiting his obligations and responsibilities under this condition, insure against any loss of life or injury to any personnel in the employment of Contractor/sub-Contractor/nominated Sub-Contractor. For this purpose, insurance shall be taken by the Contractor / Sub-Contractor. Such insurance shall be taken to include employees/ workmen covered by the Workman's Compensation Act 1923, as well as those employees /workmen not covered by the said Act. Separate insurance policies may be taken for employees/work men covered by Workman's Compensation Act 1923, and employees/ workmen not covered by the said Act. All the premium shall be paid by the Contractor. Policy/Policies taken under this paragraph for the personnel in employment with the Contractor/Sub-Contractor may be in their Bank's names of the Contractor/Sub-Contractor/nominated Sub-Contractors. In the event of any loss or Injury to personnel in employment with the Contractor/Sub-Contractor/nominated Sub-Contractors, the Employee and Contractor shall recover directly from the Insurance Company and ensure that payment of the same is made to the affected parties including the Bank. The policy in original shall be deposited with the Bank. However, if the Policy obtained by the Contractor is not project-specific but covers several works, a certified copy of the Policy shall be submitted to the Bank, together with original which shall be returned after verification.
- e) The Contractor shall at all times indemnify and keep indemnified the Bank against all losses and claims for injuries or damage to any person or any property whatsoever which may arise out of or in consequence of the construction and maintenance of the work and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto. Before commencing the execution of the works, the Contractor shall without in any way limiting his obligations and liabilities under this condition, insure at his cost and expense against any damage or loss or injury which may be caused to any person or property including the Employee or servants of the Bank and the Consultants and their property by or in the course of the execution of the works. Such insurance to be known as the Third Party Insurance shall be in a sum equivalent to two percent of the estimated value of the work, subject to the minimum sum of Rupees Five Lakhs. The Insurance policy to be so obtained by the Contractor shall be deposited by the Contractor with the Bank within seven days of its issue by the insurer.

- f) The Contractor shall provide the Bank with documentary evidence from time to time, that he has taken all the insurance policies mentioned in the foregoing paragraphs and that he has paid the necessary premium for keeping the policies valid till the works are completed and handed over to Bank.
- g) The Contractor shall ensure that similar insurance policies are taken out by his sub-Contractors or nominated Contractors, if any. The Contractor shall be responsible to the Bank or to any other person for any claim or loss resulting from the failure of the Sub-contractors or nominated Sub-Contractors to obtain such insurance policy. While taking the insurance policies, Contractor should indicate clearly to the insurance companies that policies issued should cover their Sub-Contractors and nominated Sub-Contractors also.
- h) If the Contractor and/or his sub-Contractor or nominated Sub Contractor, if any, shall fail to effect and keep in force the insurance referred to above or any other insurance which he/they may be required to effect under the terms of the Contract, then in any such case, the Bank may, without being bound to effect and keep in force any such insurance policy and pay such premium or premia, as may be necessary for that purpose from time to time and deduct the amount so paid by the Bank from any money due or becoming due to the Contractor recover the same as a debt due from the Contractor.
- i) All Insurance Policies shall be obtained from nationalized Insurance Companies only.
- j) Without prejudice to any of its obligations and responsibilities under this condition, the Contractor shall, within 30 days from the date of the Work Order and thereafter at the end of each quarter submit a report to the Bank in Proforma 'C' annexed hereto the detailed information on the Insurance Policies as prescribed in the said proforma together with relevant documentary evidence.
- k) No work shall be commenced by the Contractor unless and until he has obtained the insurance or insurance required to be obtained by him under or by the foregoing clauses and no work shall be carried out or continued by the Contractor unless and until such insurance is current and valid at that time. All the receipts in original along with two photocopies thereof, for the payment of the premia shall be furnished by the Contractor to the Bank. The original receipts will be returned to the Contractor after verification. The Bank reserves the right for Payment for works done subject to fulfilment of this condition.
- l) In the event of any claim for insurance becoming due on account of any eventuality covered by the respective insurance policy/policies, the Contractor shall reinstate the installation, replace the materials or equipment's or pays compensations to the affected personnel/ Employees or their legal heirs without waiting for settlement of the claim from insurance company.
- m) If the Contractor shall not perform and observe any of the duties and obligations devolving upon him hereunder, and such omission or breach by the Contractor shall involve the Bank in any liability tortuous or otherwise and/or loss or damage, the Bank shall be entitled to the restitution of such loss or damage and shall be entitled to recover the amount of restitution from any moneys due to the Contractor from the Bank under this Contract or any other Contract.

- n) Upon taking possession of the works under the Contract, the Bank shall take out parallel insurance, to insure all persons who are not the Contractor's or the Sub-Contractor's or the nominated Sub-Contractors or the Project Management Consultant's staff or the agent of the Banks authorised representatives on getting the occupation certificate, the Bank will maintain their own insurance Policy and the Contractors will cease to be responsible for the insurance of Bank's personnel.
- o) The Contractor shall ensure the validity of the insurance Policies. The Contractors shall hand over the insurance policies to the Bank. Once delays are certified by the **bank**, he shall have to ensure that the Insurance Policies are progressively extended.
- p) The Banks' insurance Policy shall cover the risk for Banks' agents, Consultants, Architect / Consultants etc. appointed by the Bank.
- q) The Bank shall insure the building in totality on obtaining possession of the building and other structures.

### **Insurance in respect of damages to persons & property**

1. The contractor shall be responsible for all injury to persons, Neighbouring Properties, animals or things, and for all structural and decorative damage to property which may arise from the operation or neglect of himself or of any nominated Sub-contractor's employees, whether such injury damage arise from carelessness, accident or any other cause whatever in any way connected with the carrying out of this contract. This clause shall be held to include inter alia, any damage to buildings, whether immediately adjacent or otherwise, and any damage to roads, streets, foot-paths, bridges or ways as well as all damage caused to the building and works forming the subject of this contract, by frost or other inclemency or whether. The Contractor shall indemnify the Bank from any such injury or damage to persons or property as aforesaid and also in any award of compensation or damages consequent upon such claims.
2. The Contractor shall reinstate all damage of every sort mentioned in the Clause, so as to deliver up the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of third parties.
3. The Contractor shall indemnify the Bank against all claims, which may be made against the Bank by any member of the public or other third party in respect of.
4. Anything which may arise in respect of the works or in consequence thereof and shall at his own expense arrange to effect and maintain, Until the virtual completion of the contract, with an approved Office a Policy of Insurance in the joint names of Bank and the Contractor against such risks and deposit such Policy or Policies with the Architect from time to time during the currency of this Contract.
5. The Contractor shall similarly indemnify the Bank against all claims which may be made upon the Bank whether under The workmen's Compensation Act or any other statute in force during the currency of this Contract or at common law in respect of any employee of the Contractor or any Sub- Contractor and shall at his own expense effect and maintain, until the virtual completion of the contractor, with an approved office, a policy of Insurance in the joint names

of the employee and the contractor against such risks and deposits such Policy or Policies with the Architect from time to time during the currency of this Contract.

6. The Contractor shall be responsible for anything, which may be excluded from the Insurance Policies above referred to, and also for all the damages to any property arising out of and incidental to the negligent or defective carrying out of this contract. He shall also indemnify the Bank in respect of any costs, charges and expenses arising out of any claim or proceedings and also in respect of any award of or compensation of damage arising there from.
7. The Bank with the concurrence of the Architect shall be at liberty and is hereby empowered to deduct the amount of any damage, compensation, costs, charges and expenses arising or occurring from or in respect of any such claim or damage from any sum or sums due or become due to the contractor.

### **Fire Insurance:**

1. The Contractor shall at the time of signing the Contract, Insure the works and keep them Insured until the virtual completion of the contract, against losses or damages by fire/losses due to other reasons, as approved by the Architect, in the joint names of the Bank and the Contractor (the name of the former being placed first in the policy) for the full amount of the contract and for any further sum being allowed to the Contractor as an authorized extra. Such policy shall cover the property of the Bank only, fees for assessing the claim and in connection with his services generally therein and shall not cover any property of the contractor or of any sub-contractor of the Bank. The contractor shall deposit the policy and receipts for the premiums of the same with the Bank within Ten days of the signing the contract or on receipt of the Work order, whichever is earlier unless otherwise instructed by the Architect. In default of the contractor insuring as provided above, the Bank or the Architect on his behalf may so issue any may deduct the premium paid for any money due to the contractor. The contractor shall as soon as the claim under the policy is settled, or the work reinstated by the insurance office, should they elect to do so, proceed with all due diligence with the completion of the work in the same manner as though the fire had not occurred and in all respects under the same conditions of the contract. The contractor shall be entitled to such extension of the time for completion as the Architect deems fit.
2. The amount so due as aforesaid shall be total value of the works duly executed and of the contract materials and goods delivered upon the site for use in the work up to and including a date not more than seven days prior to the date of the said certificate less the amount to be retained by the Bank (As hereinafter provided) and loss any instalment, previously paid under this clause. Provided that such certificates shall only include the value of the said materials and goods as and from time they are reasonably, properly and not prematurely brought upon the site and then only if properly stored and/or protected weather.)

## **9. FAILURE OF PERFORMANCE**

### **9.1. DAMAGES FOR NON-COMPLETION:**

- 9.1.1. If the Contractor fails to complete any or all the works by the date/s named in the relevant clauses for "Date of Completion" and "Extension of Time" and if the **bank** certify in writing on or before the date of issue of the Certificate for the last payment to which the Contractor may become entitled hereunder that the works could reasonably have been completed by the date or within the said

extended time, then the Contractor shall pay or allow the Bank the sum to be worked out at 1% of Contract Value per week of delay to be recovered as Liquidated Damages (and not by way of penalty) for the delay, beyond the said date or extended time, as the case may be, during which the works shall remain unfinished and such damages may be deducted from any moneys due or which may become due to the Contractor. The maximum amount of Liquidated Damages shall be the amount not exceeding 10% of the work order value or final certified value whichever is higher. The contractor shall be bound to extend validity of Insurance Cover till such period of completion as to be considered necessary at their cost.

## **9.2 FAILURE BY CONTRACTOR TO COMPLY WITH CONSULTANT'S INSTRUCTIONS:**

**9.2.1** If the Contractor after receipt of written notice from the **Architect / Consultant** in prior consultation with the Bank requiring compliance with such further drawings and/or instructions to remove, fails within seven days to comply with the same, the **Architect / Consultant** with prior consent of the Bank may employ other persons to execute any such work whatsoever as may be necessary to give effect thereto and all costs incurred in connection therewith shall be recoverable from the Contractor by the Bank on a certificate by the **Architect / Consultant** as a debt to be deducted by him from any moneys due or to become due to the Contractor.

# Architect/Consultant appointed by bank during the work execution

## **9.3 DETERMINATION OF CONTRACT:**

**9.3.1** If the Contractor except on account of any legal restraint upon the Bank preventing the continuance of the works, on account of any of the causes mentioned in Clause "Delay and Extension of time" in the case of a certificate being withheld or not paid when due, shall suspend the works, or, in the opinion of the **bank**, shall neglect or fail to proceed with due diligence in the performance of his part of the Contract or if he shall more than once make default in the respects mentioned in Clause "Removal of improper work and materials", the Bank shall have power to give notice in writing to the Contractor requiring that the works be proceeded with a reasonable manner and with reasonable dispatch. Such notice shall not be unreasonably given and must signify that it purports to be a notice under the provisions of this clause and must signify the act or defaults on the part of the Contractor upon which it is based. After such notice shall have been given, the Contractor shall not be at liberty to remove from the site of work, or from any ground contiguous thereto, any plant or materials belonging to him which shall have been placed thereon for the purpose of the works, and the Bank shall have lien upon such plant and 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 seven days after such notice has been given to proceed with the works as therein prescribed, the Bank may enter upon & take possession of the works and of all such plant and materials thereon intended to be used for the work, and the Bank shall retain and hold alien upon all such plant and materials until the works shall have been completed under powers hereinafter conferred upon him. If the Bank shall exercise the above power, he may engage any other person to complete the works and exclude the Contractor, his agents and servants, from entry upon or access to the same, except that the Contractor or any person appointed in writing may have access at all reasonable times during the progress of the works to inspect, survey and measure the works. Such written appointment or a copy thereof shall be delivered to the **bank** before the person so appointed comes on to the works, and the Bank shall take such steps as may be reasonably necessary for completion of the works, without undue delay or expenses, using for that purpose the plant and materials above mentioned in so far as they are suitable and adaptable to such use. Upon the completion of the work the **bank** shall certify the amount of the expenses properly incurred consequent on and incidental to the default of the Contractor as aforesaid and in completing the works by other persons. Should the amount so certified as the expenses properly incurred be less than the amount which would have been due to the Contractor upon the completion of the works by him, the difference shall be paid to the Contractor by the Bank, should the amount of the former exceed the latter, the difference shall be paid by the Contractor to the Bank. The Bank shall not be liable to make any further payment or Compensation to the Contractor for or on account of the proper use of the plant for the completion of the works under the provision herein before mentioned other than such payment as included in the Contract.



After the works shall have been so completed by persons other than Contractor, under provision herein before contained, the **bank** shall give notice to the Contractor; to remove his plant and all surplus materials as may not have been used in the completion of the works, from the site. If such plant and materials are not removed within a period of 14 days, after the notice shall have been given, the Bank may remove and sell the same, holding the proceeds, less the cost of the removal and sale, to the credit of the Contractor. The Bank shall not be so responsible for any loss sustained by the Contractor from the sale of the plant in the event of the Contractor not removing it after notice.

#### **9.4 NOTICES:**

**9.4.1** Notices of the Bank to the Contractor may be served personally or by being left at or sent by registered post to the last known place of abode or business of the party to whom the same is given or in the case of the Contractor by being left on the works. In the case of company or Corporation, notices may be served at or sent by registered post to the registered office of the Company or Corporation. Any notice sent by registered post shall be deemed to be served at the time when, in the ordinary course of post, it would be delivered.

#### **9.5 TERMINATION OF CONTRACT BY THE BANK**

**9.5.1** If the Contractor being an individual or a firm, commits any act of insolvency or shall be adjudged as Insolvent or being an incorporated Company shall have an order for Compulsory winding up or applies for voluntary winding up or subject to the supervision of the Court and of the Official Assignee or the Liquidator in such acts of Insolvency or winding up shall be unable within seven 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 fulfil the Contract, and to give security therefore, if so required by the **bank** 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 sub-let the Contract without the consent in writing of the **bank** first obtained .or shall charge or encumber this Contract or any payments due or which might become due to the Contractor there under, or if the **bank** shall certify in writing to the Bank that the Contractor

- 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 seven days after receiving from the Consultant written notice to proceed, **or**
- c) Has failed to proceed with the works with such due diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, **or**
- d) Has failed to remove materials from the site or to pull down and replace work for seven days after receiving from the Consultant written notice that the said materials or work were condemned and rejected by the **bank** under these conditions, **or**
- e) 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 requiring the Contractor to observe or perform the same, **or**

f) Has to the detriment of good workmanship or in defiance of the **bank** instructions to the contrary sublet any part of the contract. Then in any of the said cases the Bank may notwithstanding any previous waiver, after giving seven days' notice in writing to the Contractor, determine the Contract but without thereby affecting the powers of the **bank** or the obligations and liabilities of the Contractor, the whole of which shall continue in force as fully as if Contract has not been determined and as if the works subsequently executed had been executed by or on behalf of the Contractor. And further, the Bank, may enter upon and take possession of the work and all plant, tools, scaffoldings, sheds, machinery, steam and other power, utensils and materials lying upon the premises or the adjoining lands or roads and use the same as his own property or may employ the same by means of his own servants and workmen carrying on and completing the works or by employing any other Contractors or other persons to complete the works, and the Contractor shall not in any way interrupt or do any act, matter or things to prevent or hinder such other Contractor or other person or 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 **bank** shall give a notice in writing to the Contractor to remove his surplus materials and plant, and should the Contractor fail to do so within a period of 14 days after receipt thereof by him the Bank shall sell the same by public auction, or otherwise and shall give credit to the Contractor for the amount realized after deducting there from the costs of removal and sales by the Bank for the values of the said plant and material so taken possession of by the Bank and the expense or loss which the Bank shall have been put to in procuring the works to be completed and the amount, if any, owing to the Contractor and the amount which shall be so certified shall thereupon be paid by the Bank, to the Contractor, or, by the Contractor to the Bank, as the case may be, and the certificate of the **bank** shall be final and conclusive between the parties. On termination of the Contract, the Contractor shall forthwith remove himself and his workmen from the works site

## **9.6 TERMINATION OF THE CONTRACT BY THE CONTRACTOR:**

**9.6.1** If payment of the amount payable by the Bank under the Certificates of the **bank** with interest as provided for hereinafter shall be in arrears and unpaid for Sixty days (60) after notice in writing requiring payment of the amount with interest as aforesaid shall have been given by the Contractor to the Bank (or if the Bank interferes with or obstruct issue of any such Certificates), or the Bank commits any 'Act of Insolvency', or if the Bank being an individual, or firm shall be adjudged insolvent or (being an incorporated company) shall have an order made against it or pass an effective resolution for winding up either compulsorily or subject to the supervision of the court or Voluntarily, or if the official Assignee of the Bank being an individual, or firm shall be adjudged insolvent or (being an incorporated company) shall have an order made against it or pass an effective resolution for winding up either compulsorily or subject to the supervision of the court or Voluntarily, or if the official Assignee of the Bank shall repudiate the Contract, or if the Official Assignee or the Liquidator in any such winding up fails within fifteen days after notice to him requiring him to do so, to show to the reasonable satisfaction of the Contractor that he is able to carry out and fulfil the Contract and to make all payments due, and to become due hereunder and if required by the Contractor, to give security for the same, or if the works be stopped for three months under an order of the **bank** or the Bank or by any injunction or other orders of any court of law, then and in any of the said cases the Contractor shall be at liberty to determine the Contract by notice in writing to the Bank, through the **bank**, and he shall be entitled to recover from the Bank payment for all works executed and for any loss he may sustain upon any plant or material supplied or purchased or prepared for the purpose of the Contract.

**9.6.2** In arriving at the amount of such payment, the net rates contained in the Contractor's original Tender shall be followed, or where the same may not apply, valuation shall be made in accordance with "Prices for Extras, etc. Ascertainment thereof".

## **9.7 FORECLOSURE OF CONTRACT IN FULL OR IN PART:**

**9.7.1** If at any time after acceptance of the Tender the **Bank** shall decide to abandon or reduce the scope of the works for any reasons whatsoever and hence not require the whole or any part of the works to be carried out he shall inform the Contractor in writing to that effect and the Contractor shall have no claim to any payment or compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

**9.7.2** The Contractor shall be paid at the Contract rates full amount for works executed at site, and in addition, reasonable amount as Certified by the **bank** for the value of such material (which material shall thereupon become the property of the Bank) and also such further allowances as the **bank** may think reasonable and fair in respect of (a) any expenditure incurred by the Contractor towards preliminary works etc. and (b) other reasonable and proper engagement the Contractor may have entered into for carrying out the work.

## **10 COMPLIANCE**

### **10.1 COMPLIANCE TO BANK'S/LEGAL NORMS**

#### **10.1.1 NOTICES**

a) The Contractor shall give all notices and pay all fees and shall comply with all Acts and Regulations for the successful completion of the Contract works.

**10.1.2 AUTHORITIES, NOTICES, PATENTS, RIGHTS & ROYALTIES:** The Contractor shall conform to the provisions of all the statutes relating to the works, and to the Regulations and bye laws of any local Authority, and of any Water, Lighting, Electric supply, and of other Companies or Authorities with whose systems the structure is proposed to be connected, and shall before making any variation from the drawings or specifications that may be necessitated by so confirming, give to the **bank** written notice, specifying the variations proposed to be made and the reason for making it, and apply for instruction thereon. In case the Contractor shall not within 10 days receive such instructions, he shall proceed with the work conforming to the provision or Regulations or Byelaws in question.

a) The Contractor shall bring to the attention of the **bank** all notices required by the said Acts, Regulations or Bye-laws to be given to any Authority by the Bank and pay to such Authority, or to any public Officer, all fees that may be properly chargeable in respect of the works, and lodge the receipts with the **bank**.

b) The Contractor shall indemnify the Bank against all claims in respect of patent rights, design, trademarks of name or other protected rights in respect of any constructional site, machine work or material used for or in connection with the works or temporary works and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. The Contractor shall defend all actions arising from such claims, unless he has informed the **bank** before any such infringement and received their permission to proceed, and shall himself pay all royalties, license fees, damages, costs and charges of all and every sort that may be legally incurred in respect thereof. All statutory fees, deposits etc paid by the contractor for permanent works to be handed over to Bank which shall be reimbursed to him by the Bank against documentary proof.

c) The Contractor shall assist and co-ordinate with the Architect / Consultant in obtaining all statutory approvals and/or amendments to such approvals as per the rules in force from Municipality and

other local bodies. Any expenditure incurred in obtaining such approvals is deemed included in the rates quoted by the **Contractor**.

#### 10.1.3. Notices to Local Bodies:

a) The Contractor shall comply with and give all notices required under any law, rule, regulations, or byelaw of parliament, State Legislature or Local Authority relating to works. The Contractor shall before commencing the execution of work issue a certificate to the Bank that he has obtained all the permissions Registrations and give all the notices as are required to be obtained or given under law particularly blasting permission the Police permission etc.

#### 10.1.4. MUNICIPAL REGULATIONS:

a) The whole of the work is to comply with the requirements and byelaws of the concerned Municipal Corporation and local bodies.

#### 10.1.5. WAGES OF LABOUR EMPLOYED BY THE CONTRACTOR:

a) The Contractor shall pay all labour employed by him at rates fixed by him at the commencement of the Contract as per the Labour Laws. Wages as applicable for the construction work as per norms stipulated by the Kerala State Government or any other statutory body or authority of the State of Karnataka or Government of India shall be followed by the contractor. No violation of such statutory laws and rules shall be permissible. This will also include the minimum and the maximum allowable wages for various categories of labour to be employed by the contractor.

b) All wages shall be paid in full and without any deduction whatsoever at the approved rates and for full time actually worked during the wage period. Officers of **bank** or an Officer of the Bank as may be authorised in that behalf shall have power to exercise supervision over the labour employed by the Contractor, and for such other purpose any of these officers may inspect the wage books, muster books and other labour records of the Contractor. In the event of the report of such Officer/s showing that the proper rates of wages are not being paid, or that in any manner whatsoever the dealings between the Contractor and his

c) Labours are not satisfactory, the **Bank** shall pass such orders upon the report as he considers desirable, and those orders shall be final and binding upon the Contractor. The contractor shall indemnify and keep indemnified the **bank** against any claim arising from failure of the Contractor to comply with such labour laws.

d) The contractor shall register with Assistant Labour Commissioner (Central) as contractor approved by the Bank.

e) The contractor shall ensure that, statutory deductions such as PF, employees insurance etc., are made as per the provisions of labour enactment and the same is remitted to the concerned authorities in time without fail.

#### 10.1.6. DISPLAY OF NOTICES

a) The Contractor shall display all permissions licenses registration certificates and other statements required to be displayed under various labour laws and other legislation's applicable to the works at the site office and also maintain the requisite register/records factually and up to date and keep

them ready for inspection by the concerned authorities and also make available the same to the **Bank** for inspection.

**10.1.7. INSURANCE POLICIES:**

- a) The Contractor shall not commence any work at site, until all the insurance Policies, as required here and in terms of the General Conditions of Contract, have been submitted to the Bank. Renewal of the same if required due to extension of time for completion or similar reasons is also the responsibility of the Contractor.
- b) Notwithstanding anything to the contrary mentioned in the Contract, Contractors have to submit all Insurance Policies to the Bank directly to make the Bank satisfy them regarding adequacy of values of Insurance, validity etc. as per contractual clauses.
- c) The Contractor shall arrange for renewals of these policies on their own. Any omissions to do so or delay in non-receipt of any information will be no excuse for failure to renew them or keep them in force without a break.

**10.1.8. INDEBTEDNESS AND LIENS:**

- a) The Contractor agrees to furnish the Bank from time to time during the progress of the work as requested, verified statements showing the Contractors' total outstanding indebtedness in connection with the work covered by the Contract.
- b) Before final payment is made, the Bank may require the Contractor to furnish the Bank with satisfactory proof that there are no outstanding debts or liens in connection with the Contract. If during the progress of the work, the Contractor shall allow any indebtedness to accrue to Sub-Contractors or others and shall fail to pay or discharge same within Seven days after demand, then the Bank may withhold any money due to the Contractor until such indebtedness is paid, or apply the same towards the discharge thereof.

**10.1.9. INDIAN STANDARDS CODE:**

- a) The relevant I.S. Code of practice shall be the latest version with its amendments/revisions. The Contractor shall keep and maintain copies of the latest editions of relevant I.S. Codes at the work site and make it available to **bank** when required.

**10.1.10. TREASURE TROVE:**

- a) Should any important and valuable materials/items be found while carrying out the works, the same shall be the property of the Bank. The Contractor shall give immediate notice to the **bank** of any such discovery and shall hand over any such treasure to the Bank on demand.

**10.1.11. TECHNICAL AUDIT**

- a) The work is liable to be technically audited by the Chief Technical Examiner of the Central Vigilance Commission Government of India from time to time. Any defects, improvements or testing etc. pointed out by the Chief Technical Examiner should be carried out by the Contractor at his own cost and any deduction suggested by the CTE will be effected.
- b) The Bank shall have a right to cause a technical examination and audit of works and final bills of the contractor including all supporting vouchers, abstract, etc. to be made at the time of payment of the bill. If as a result of this examination or otherwise any sum is found to have been overpaid in respect of any work done by the contractor under the contract the contractor shall be liable to return the amount of over payment and it will be lawful for the Bank to recover the same from any sum or sums due to him and in any other manner legally permissible and if it is found that the Contractor was paid less than what was due to him under the contract in respect of any work, executed by him under the contract, the amount of such under payment shall be duly paid by the Bank.
- c) Any sum of money due and payable to the contractor (including security deposit returnable to him) under this contract may be appropriated by the Bank and set off against any claim of the Bank for the payment of a sum of money arising out of or under any other contract made by the Contractor with the Bank.

## **11. ROLE OF ARCHITECT / ARCHITECT / CONSULTANT**

**11.1. ROLE OF THE ARCHITECT / CONSULTANT:** Bank shall be free to deploy/appoint any architect/consultant during the work execution.

### **11.2. TO DEFINE TERMS AND EXPLAIN PLANS:**

11.2.1. The various parts of the Contract are intended to be complementary to one another; but should any discrepancy appear, or any misunderstanding arise as to the import of anything contained therein, the explanations of the **bank** shall be final and binding. The correction of any errors or omissions of the Drawings and Specifications may be made by the **bank**, when such correction is necessary to bring out clearly the intention, which is indicated by a reasonable interpretation of the drawings & Specifications as a whole.

### **11.3. TYPOGRAPHICAL OR CLERICAL ERRORS:**

11.4.1. The **bank** clarifications regarding partially omitted particulars or typographical or clerical errors shall be final and binding on the Contractor.

### **11.5. SITE VISITS:**

11.5.1. The **Bank** shall visit the site from time to time at their discretion, or when expressly called upon to do so, to co-ordinate various activities and/or to answer such queries that may be posed at site on interior drawings.

### **11.6. ADDRESS FOR SERVICE**

11.6.1. All letters and Notices under or pursuant to these presents shall be hand delivered against acknowledgement or sent by Registered Post with Acknowledgement Due at the respective addresses mentioned below. Any change in the addresses shall be duly intimated by the concerned Party to all others.

Address for the Bank

## **THE GENERAL MANAGER**

Bank of Baroda

Zonal Office, 4<sup>th</sup> Floor ,M G Road Metro Station Complex ,M G Road ,Ernakulam -682037

## **11.7. TAKING OVER**

11.7.1. Upon the successful completion of all the tests to be conducted at site on the materials/items executed by the contractor, the Bank shall verify the work completion in all respects and is ready to be taken over by the Bank. Issuance of such recommendation letter for taking over shall not relieve the contractor of any of his obligations under the terms and conditions of contract.

## **11.8. DISPUTES**

### **11.8.1. SETTLEMENT OF DISPUTE BY ARBITRATION**

- a) Disputes and differences of any kind whatsoever arising out of or in connection with this contract or the carrying out of the works (whether during the progress of the works or within one year after their completion, or within one year after the determination or abandonment or breach of the contract) excepting however, on matters referred to in clause 9.3 and 9.5 of General Conditions of Contract hereof, shall be referred by either party for arbitration after giving at least 30 days' notice in writing to the other(s) (hereinafter referred to as the 'Notice for Arbitration') clearly setting out the items of disputes for reference to a Sole Arbitrator to be appointed as hereinafter provided.
- b) For the purpose of appointing the Sole Arbitrator referred to above, the Bank will send to the Contractor within thirty days of the Notice for Arbitration, a panel of three names of persons who shall be presently unconnected with the organization of the Bank and the Contractor.
- c) The Contractor shall on receipt of the names as aforesaid, select any one of the persons so named to be appointed as a Sole Arbitrator and communicate his name to the Bank within thirty days of receipt of the names. The Bank shall thereupon without any delay appoint the said person as the Sole Arbitrator. If the Contractor fails to communicate such selection as provided above within the period specified, the Bank shall make the selection and appoint selected person as the Sole Arbitrator. In the event, the contractor communicates disagreement to appointment of Sole Arbitrator as selected by the Bank than notwithstanding such disagreement, the person selected, as sole Arbitrator by the Bank shall be the sole Arbitrator.
- d) If the Bank fails to send to the Contractor the panel or three names as aforesaid within the period specified, the Contractor shall send to the Bank a panel of three names of persons who shall all be unconnected with either party. The Bank shall on receipt of the names as aforesaid select any one

of the person's names and appoint him as the Sole Arbitrator. If the Bank fails to select the person and communicate such selection to the Contractor, the Contractor shall be entitled to appoint one of the persons from the panel as the Sole Arbitrator and communicate his name to the Bank, provided however in case of delay by the contractor as regards such selection, the Arbitrator selected by the Bank shall be appointed as sole Arbitrator.

- e) If the Arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever, another Sole Arbitrator shall be appointed as aforesaid.
- f) The decision of the **bank** with respect to the matters referred in clause 9.3 and 9.5 of General condition of Contract herein, shall be final and outside the scope of arbitration. The Sole Arbitrator shall have power to open up, review and revise any certificate, opinion or decision, requisition or notice save in regard to matters enumerated in clause 9.3 and 9.5 of General Conditions hereof written and to determine all other matters in dispute which shall be submitted to arbitration and of which notice shall have been given as aforesaid. Subject to aforesaid, the Arbitration shall be governed by the Arbitration Act, and Conciliation 1946 or any other statutory modification thereof. The Award of the Arbitrator shall be final and binding on the parties. It is hereby agreed that in all disputes referred to Arbitration, the Arbitrator shall give a separate Award in respect of each dispute or difference in accordance with the terms of the contract and give a reasoned Award.
- g) 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 directed to be borne and paid by such party or parties to the dispute, in such manner or proportion as may be directed by the Arbitrator in the Award.
- h) The Bank and the Contractor hereby also agree that the Arbitrator under this clause shall be a condition precedent to any right to action under the contract with regard to the matters hereby expressly agreed to be so referred to arbitration.

#### 11.8.2. Settlement of dispute by arbitration:

- a) All disputes and differences of any kind whatsoever arising out of or in connection with the contract or the carrying out of the works (whether during the progress of the works or within one year after their completion, or within one year after the determination or abandonment or breach of the contract) shall be referred to and settled by the Architect, who shall state his decision in writing. Such decision in writing may be in form of a final certificate or otherwise. The decision of the Architect with respect of any of the expected matters shall be final and without appeal as stated in the relevant clause on "matters to be finally decided by the Architect." (Clause no. 11.3).
- b) But if either the Bank or the contractor be dissatisfied with the decision of the Architect on any matter, question or dispute of any kind (except any of the expected matters) or as to the withholding by the Architect of any certificate to which the contractor may claim to be entitled, then and in any such case



either party (the Bank or the Contractor) may within (28 days) after receiving notice of such decision, give a written notice to the other party through the Architect requiring that such matters in dispute be arbitrated upon. Such written notice (hereinafter referred to as the 'notice for arbitration' shall clearly set out the items of disputes for reference to a Sole Arbitrator to be appointed as herein after provided: specify the matters which are in dispute and such dispute and difference of which such written notice has been given and no other shall be and is hereby referred to the Arbitrator being a fellow of the Indian Institute of Architects to be agreed upon and appointed by both the parties or in case of disagreement as to the appointment of a single Arbitrator, to the arbitration of two Arbitrators both being fellows of the Indian Institute of Architects, and to be appointed by each party, which Arbitrators shall before taking upon themselves the burden of re-reference appoint an umpire. The Arbitrator, the Arbitrators or the Umpire shall have the power to open up, review and revise any certificate, opinion, decision, requisition or notice save regard to the expected matters referred to the preceding clause, and to determine all matters in dispute which shall be submitted to him or them and of which notice shall have been given aforesaid. Upon every or any such reference the cost of an incidental to the reference and award respectively shall in the direction of the Arbitrator, or Arbitrators or the Umpire who may determine the amount thereof, or direct the same to taxed as between attorneys and client or to between party and party, and shall direct by whom and to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to The Arbitration act, 1989 or any statutory modification thereof. The award of the Arbitrator, or the Arbitrators, or the Umpire shall be final and binding on the parties, Such reference except as to the withholding by the Architect of any Certificates under clause 7.3.5 to which the Contractor claims to be entitled, shall not be opened or entered upon until after the completion of alleged completion of the works or until after the practical cessation of the works arising from any cause unless with the written consent of the Bank and Contractor.

#### **11.8.3. ARBITRATION:**

- a) Any dispute, controversy or claims out of or relating to this Work Order or breach, or termination or invalidity thereof, shall be settled by Arbitration in accordance with the Arbitration and Conciliation Act, 1996 as at present in force.

#### **11.8.4. LEGAL:**

- a) All disputes and differences of any kind whatsoever arising out of or in connection with the Work Order whether during or after completion of contract shall be deemed to have arisen at Ernakulam and only Courts in Ernakulam shall have jurisdiction to determine the same.

#### **11.8.5. WORK TO BE CONTINUED DURING THE PENDANCY OF THE ARBITRATION**

- a) The Contractor shall continue with the allotted works with due diligence and speed so as to complete the same within the period agreed upon, notwithstanding any dispute or difference or question is referred to arbitration. The works shall not be delayed on account of any such reference made to the Arbitrators.

### **SPECIAL CONDITIONS OF CONTRACT**

1. Tenderers shall go through all documents before quoting rates and provide for necessary cost as may be included in either bill or material or specifications.
2. Tenderers shall be given prices in blank column Entries in English and in ink. Arrive also at the grand total must also fill in all “rates only columns” and sign all corrections.

3. Tender shall be invalid unless all rates are filled in. No arbitrary condition shall be submitted. Tenders shall be signed by all the legal partners of the firm.
4. Each of the Tender documents shall be signed by the Tenderer.
5. The Tenderer who's Tender is accepted shall be bound to enter in to the contract within eight days of intimation from Bank.
6. Work shall be done at nights, non-office hours and holidays without extra charge, if necessary.
7. Tenderer shall provide for stacking of materials in such a way as to facilitate rapid checking of quantities.
8. Materials supplied by owner shall be used only in owner's work.
9. Contractors shall pay any local charges relating to execution of work.
10. Contractor shall allow for all wastages in the rates.
11. Contractor shall arrange for all temporary connections.
12. No extras shall be paid, quantity sheets and drawings both are to be considered jointly and Architect / Consultant is the final authority for the interpretation.
13. Site instruction shall be deemed for proper execution, and shall be carried out without extra charge.
14. Order book with numbered pages shall be kept on site. Contractor shall carry out all instructions properly.
15. Contractors shall insure whole work against fire, CAR and third party.

**PROFORMA A**  
**DEVIATIONS (INTERIM)**

**Name of Work:**

**Interim Bill No.:**

|          |                                       |  | <b>Tender<br/>Provision<br/><br/>Rs.</b> | <b>Actual<br/>Amount Rs.</b> | <b>Excess (+) /<br/>Savings (-)</b> | <b>Remarks</b> |
|----------|---------------------------------------|--|--|------------------------------|-------------------------------------|----------------|
|          |                                       |  |  |                              |                                     |                |
|          |                                       |  |  |                              |                                     |                |
| <b>1</b> | <b>Deviated Items</b>                 | $\begin{smallmatrix} + \\ - \end{smallmatrix}$ |  |                              |                                     |                |
| <b>2</b> | <b>Extra Items</b>                    | +  |  |                              |                                     |                |
| <b>3</b> | <b>Deleted Items</b>                  | -  |  |                              |                                     |                |
|          |                                       |  |  |                              |                                     |                |
|          |                                       |  |  |                              |                                     |                |
|          |                                       |  |  |                              |                                     |                |
| <b>4</b> | <b>Tender Items (As<br/>executed)</b> |  |  |                              |                                     |                |
|          |                                       |  |  |                              |                                     |                |
|          |                                       |  |  |                              |                                     |                |
|          |                                       |  |  |                              |                                     |                |
|          | <b>Actual cost (as<br/>executed)</b>  |  |  |                              |                                     |                |
|          | <b>Less Tender cost</b>               |  |  |                              |                                     |                |
|          | <b>Net Excess / Saving</b>            | 0  |  |                              |                                     |                |
|          |                                       |  |  |                              |                                     |                |

**PROFORMA 'B'**  
**DEVIATIONS (FINAL)**

**Name of Work:**

**Interim Bill No.**

| <b>Tender provision</b>                        | <b>Actual<br/>Amt</b> | <b>Excess (+)<br/>Rs</b> | <b>Savings (-)<br/>Rs</b> | <b>Remarks.</b> |
|--|-----------------------|--------------------------|---------------------------|-----------------|
| Deviated Items (+)                             |                       |                          |                           |                 |
| Extra Items (+)                                |                       |                          |                           |                 |
| Deleted Items (-)                              |                       |                          |                           |                 |
| Net Excess/ Savings                            |                       |                          |                           |                 |
| Tender Items (as executed)                     |                       |                          |                           |                 |
| Actual Cost ( as executed) Less Tender<br>Cost |                       |                          |                           |                 |
| Net Excess/Savings                             |                       |                          |                           |                 |
|  |                       |                          |                           |                 |



**PROFORMA C**

**REPORT OF VIRTUAL COMPLETION**

Draft of letter to be written by the Contractor to the bank in connection with the Virtual Completion Certificate as per the relevant clause.

"Having executed the work in terms of the Contract, we hereby certify that we have virtually completed the works covered by our Contract Agreement.

We hereby certify that the work has been executed wholly conforming to drawings, specifications and instructions of bank.

We do certify further that we have executed the work in accordance with the applicable laws and without any transgression of such laws."

NOTE: The Virtual Completion Certificate will be endorsed by the bank as having examined the works and certifying that work has been executed as per detailed drawings and specifications.

**PROFORMA 'D'**

**UNDERTAKING/HYPOTHECATION IN CONNECTION WITH PAYMENT OF  
ADVANCE ON MATERIALS BROUGHT BY THE CONTRACTOR TO THE SITE**

This undertaking executed at this \_\_\_\_day of \_\_\_\_month of year 20\_\_\_\_by  
\_\_\_\_\_  
(hereinafter called the Contractors)  
IN

FAVOUR OF which expression shall include its \_\_\_\_\_

The\_\_\_\_\_ and having its \_\_\_\_\_

(Herein after called the Bank) which expression shall include its successors and assigns.

The Bank and the Contractors have entered into an Agreement dated \_\_\_\_\_ for  
construction of on office complex on piece of land belonging to the Bank at  
\_\_\_\_\_ (hereinafter called as the said agreement) in terms of

which Contractors will be paid an advance of 75% of the cost of materials brought by the Contractor to the site for consumption in the works at the discretion of the Bank.

The Contractors have since applied to the Bank that they be allowed advances as the security of materials absolutely belonging to him and brought by them to the site of work and the Bank has since agreed to do so on the terms and conditions hereinafter set out.

Now this letter of Undertaking witnesses that in consideration of the said agreement, and in consideration of the amount paid/payable to the contractors by the Bank and of any further advances as may be made to the contractors as aforesaid, the Contractors hereby agree with the Bank and undertake as under:

The amount advanced by the Bank to the Contractors as aforesaid and all or any further sum or sums advanced as aforesaid shall be employed by the Contractor(s) in or towards expediting the execution of the said works and for no other purpose whatsoever.

2. That the materials which have been offered to and accepted by the Bank as security are absolutely the Contractor's own property and free from encumbrances of any kind and the Contractors will not



make any application for or receive a further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the Contractors indemnifies the Bank against all claims to any materials in respect of which an advance has been made to them as aforesaid.

That the materials on the security of which any further advance or advances may hereafter be made as aforesaid (hereinafter called the said materials) shall be used by the Contractors solely in the execution of the said works in accordance with the directions of the Bank / Architect / Consultant and in the terms of the said agreement.

That the Contractor shall make at his own cost all necessary and adequate arrangement for the proper storage, watch, safe custody, accounting and protection against all risks of the said materials and that until used in construction as aforesaid, the said materials shall remain at the site of the said works in the Contractor's custody and on the responsibility and shall at all times be open to inspection by the Bank / Architect / Consultant or any officer authorised by the Bank. In the event of the said materials or any part thereof being stolen, destroyed or damaged, the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same as required by the Bank / Architect / Consultant.

That the said materials shall not on any account be removed from the site of the said works except with the written permission of the Bank of his authorised representative.

That the advances shall be repayable in full at or before the Contractors receive payment from the Bank of the price payable to them for the said works under the terms and the provision of the said agreement provided that if any intermediate payments are made to the Contractors on account of work done, then on the occasion of each such payment the Bank will be at liberty to make a recovery from the Contractor's bill for such payment deducting there from the value of the said material then actually used in the construction and in respect of which recovery has not been made previously the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.

That if the Contractors shall at any time make any default in the performance or observance in any respect of any of the term and provisions of the said agreement or of these presents, the total amount of the advance or advances that may still be owing to the Bank shall immediately on the happening of such default be repayable by the Contractors to the Bank together with interest thereon at Eight per cent per annum from the date or respective date of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the Bank in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the Bank to repay and pay the same respectively to him accordingly.

That the Contractor hereby hypothecates all the said materials for the time being at site or to be brought at site from time to time until the repayment to the Bank of the sum or sums advanced as aforesaid and all costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS

and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and whenever the covenant for payment and repayment herein before contained shall become enforceable and the money owing shall not be paid in accordance therewith, the Bank may at any time thereafter adopt all or any of the following courses as he may deem best.

- a) Seize and utilize the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement, debiting the Contractor with the actual cost of effecting such completion and the amount due in respect of advances under these presents and crediting the Contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the Contractor, he is to pay it to the Bank on demand together with interest accruing thereon.

Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the Bank under these presents including expenses incurred by Bank in connection with such auction and pay over the surplus (if any) to the Contractor.

Deduct all or any part of the money owing hereunder out of the security deposits or any sum payable to the Contractor under the said agreement.

That except in the event of such default on the part of the Contractor as aforesaid, interest on the said advance shall not be payable.

That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents the settlement of which has not been herein before expressly provided for, the same shall be referred to the Bank's Chief Engineer whose decision shall be final and no appeal shall lie against his decision before any court, arbitrator or authority.

The Provision of this undertaking shall be deemed to be supplemental to the said agreement.

IN WITNESS WHERE OF the contractors have set their hands to these presents the day and year first herein above written.

**SIGNED, SEALED AND DELIVERED BY THE SAID CONTRACTOR IN THE PRESENCE OF-**

WITNESS:

SIGNATURE

NAME

ADDRESS

**PROFORMA E**  
**SCHEDULE OF EXCEPTION AND DEVIATIONS**

**The bidder shall include in a schedule all exceptions or deviations made from the bidding documents of whatever nature included in the proposal.**

Unless exceptions and deviations are stated in this schedule, the bidder will be deemed to have agreed with the conditions and specifications as stated in the bidding documents.

Each bidder shall be free in his proposals to indicate deviations and / or exceptions and / or alternative to these bidding documents.

| <b>Item</b> | <b>Ref. Clauses</b> | <b>Description of<br/>Exceptions And / Or<br/>Deviations</b> |
|-------------|---------------------|--|
|-------------|---------------------|--|

**SIGNATURE OF TENDERER**



**Schedule- A**  
**SPECIAL INFORMATION TO THE CONTRACTORS**

1. The Work has to be carried out at bank's own building near Karikamuri Cross Road Junction, Ernakulam  
**Contractors are advised to visit the site, at their own expense and familiarize with site conditions before quoting. The contact details is as below -Bank of Baroda, Zonal Office,4<sup>th</sup> Floor ,M G Road Metro Station Complex, M G Road, Ernakulam-682035**

**Contact No: 04842867816, Mob. 8085281679**

Contractors are advised to go through the specifications and the schedule of work and clarify doubts if any, with the Bank's Engineer before quoting.

2. The contractor shall furnish full details of the materials he intends to use on the work like make, model no., printed literature/ catalogue showing all details, reference to any national/ international approvals etc. In case of any deviations from the specifications/ stipulations contained in the tender, the same shall be separately listed out by the contractor and enclosed with the tender (in technical bid). Failure to furnish the above details may result in rejection of tender summarily.
3. **Warranty:** The offer must include comprehensive on-site warranty (DLP) for a period of -1-year with free maintenance and replacement of defective equipments from the date of handing over of the Solar power plant system. The offer must also include comprehensive AMC of 3 years from the date of completion of defect liability period of two years. The firm shall be fully responsible for the warranty in respect of proper design, quality and workmanship of all equipments, accessories like covered by the offer. The firm must warrant all equipments, accessories, spare parts etc., against any manufacturing defects during the warranty period. During the warranty period the firm shall maintain the equipment and repair/ replace all the defective components of the SPV plant at the installed site at no additional charge of whatsoever nature to the Bank.
4. Relevant type/factory test certificates, data sheets shall be furnished in respect of Modules, Inverters, Cables and other related accessories etc.

**SIGNATURE OF THE CONTRACTOR WITH SEAL**

**Schedule B**  
**SPECIAL INSTRUCTIONS TO THE CONTRACTOR**

- 1) This specification shall be read in conjunction with General conditions of contract as applicable for this project.
- 2) The Contractor shall design the equipment considering the site conditions. After award of contract no claim for extra payment will be entertained.
- 3) All Civil alteration works shall be provided by the Contractor. The equipment shall be designed keeping in view the provisions of the statutory regulations and safety codes in force in the locality of installation. All such minor civil works like chipping, grouting, drilling, etc for fixing mounting structure and other accessories are to be executed by the supplier.
- 4) All excavation works in ground/ cemented flooring/ interlock area and providing required quantity of PVC/G.I pipes/Bricks/Sand required for laying the cables of solar system up to KSEB meter board in the building at the point of EB – solar supply integration, back filling and making good of excavated area is in the scope of the Contractor. Whenever cables are to be laid underground, cables/wires are to be covered with protective brick and sand/ PVC pipe. Underground cable passing through the vehicular movement area is to be provided with suitable size G.I pipe.
- 5) Replacement any wiring/cabbling from building main panel board to solar supply meter board if required, will be in the scope of the Contractor. Size and rating of the cable/wire to be laid shall be corresponding to the rated power load of the system.
- 6) Supplying and laying of cable required from solar AC panel to Solar meter board for interfacing the EB power supply and solar power supply is in the scope of the Contractor.
- 7) The work should complete including testing & commissioning of solar power system within 90 days from the acceptance of work order by the Contractor including mobilization.
- 8) Providing of solar meter board with both main meter ( by replacing the existing unidirectional meter by bi-directional meter) and solar Bi-directional ETV meters conforming to the KSEB Specifications with required accessories, interconnections in the existing main panel board, testing of the meters in the KSEB meter testing department is in the scope of the Contractor.
- 9) All liasoning works, inspections, Departmental testing of the solar system, metering panel board etc and paper works required for obtaining permission for installation of solar system and commissioning of solar system from KSEB and local electrical inspectorate is in the scope of the Contractor.
- 10) Proposed Solar Power Plant is to be installed on the galvalume/ metal sheet roofing on the Terrace floor of the residential cum commercial building near Karimkamuri Cross Road Junction,Ernakulam’ of the Bank. Contractor shall provide all safety equipments/ safety arrangement safety belt/safety rope, safety helmet/ shoes or any other safety accessories required for safe working of their workmen on top of sheet roofing.
- 11) The following drawing/ documents shall be submitted for approval before commencement of work.
  1. Module test certificate issued by the Government approved test centers have to be produced on sample basis.

2. Contractor will submit his layout design for SPV module including its structural details to Engineer in Charge for approval prior to start of work.
  3. GA of ACDB, DCDB, Array Junction Box, Main Junction Box, Paralleling of multiple grid tie inverters, Overall layout, cable routing layout, Module interconnection drawings, bill of materials etc., for approval.
- 12) The following drawings/ documents shall be submitted for records before handing over.
1. As built drawings of solar modules layout, wiring diagram of D.C Junction boxes, AC panel etc.
  2. A screen printed/laminated circuit and cabling diagram. The same should also be provided in the manual.
  3. Interconnection diagram of the modules of the panels on SPV module/panels shall also be provided for ready reference of the maintenance staff.
  4. Installation, Operation and Maintenance Manual. Regarding number of copies etc., refer to relevant articles.
- 13) The Contractor shall indicate Price for supply, Installation, testing, erection and commissioning of the SPV System and all other requirements as mandated in the Tender conditions/specifications. GST shall be paid extra by Bank. The quoted Price shall include charges on account of all taxes, duties, packing, forwarding, transport, insurance etc. The quoted Price shall remain firm and binding and shall not be subjected to any escalation whatsoever on any account during entire period of supply, installation, testing & commissioning.
- 7) SPV System shall be guaranteed for a period of two year of trouble free operation after commencement of regular operation and shall include free servicing, repair and replacement of parts/components by the Contractor.
- 8) Workmanship and performance warranty:
1. The materials used shall be new and best of its kind available and shall conform to standards as mentioned in the technical specification.
  2. The supplier shall guarantee satisfactory performance of system as per relevant guidelines.
  3. The guarantee shall also cover faulty design/ materials/ workmanship. All rectification or replacement under guarantee shall be done by the supplier free of cost.
- 9) The Contractor shall fill up the Price data sheet and submit in a separate cover along with the tender.
- 10) The Contractor shall furnish a Time Bar Chart showing breakup of time required for various activities viz., submission and approval of drawings, raw material procurement, engineering, various shop activities, order placement for bought out items and their delivery to shop, assembly, testing, inspection, dispatch, erection and commissioning.
- 11) The Contractor shall furnish the procedure proposed for conducting performance guarantee test; for review by Employer.
- 12) The Contractor shall ensure installation of all electrical equipment by approved licensed electrical Contractors and subsequent approval by electrical inspector and other competent authority, if necessary.
- 13) Packing: Packing and transportation of solar panels, Charge Controller, and Mounting Structure shall be made such that the equipment is not damaged, while transporting, loading and unloading.



- 14) **Quality and Workmanship:** All the units of the system shall be manufactured in accordance with international quality management systems ISO 9001-2000(or latest ISO), for which the manufacturer shall be duly accredited. A quality plan describing the quality assurance system followed by the manufacturer would be required to be submitted. The manufacturer shall also be accredited for the compliance of ISO 14001 (latest issue) pertaining to environmental requirements. All wiring shall be neatly secured in position and adequately supported Metal panel or cover holes through which the wires or cables pass shall be bushed. All materials and workmanship shall be of professional quality to ensure the requirements.

**SIGNATURE OF THE CONTRACTOR WITH SEAL**

**Schedule C**

**Technical Specifications of SPV Power Plant**

**TECHNICAL SPECIFICATIONS**

**1) SCOPE OF WORK:**

The scope of work covers:

Design, Supply, Installation on galvalume/metal sheet roofing on the sheet roofing of the Terrace floor of bank's residential cum commercial building at plot with survey no. 521/7,8 near Karikamuri Cross Road Junction, Ernakulam, Testing & Commissioning complete with all the materials required for the system and Maintenance for 3 years after completion of defect liability period of -1- year for 30.00kWp of On-Grid Net Metering type Rooftop Solar Power System, with following features.

1. The solar power generated shall be utilized for consumer load and the surplus power to be fed into the KSEB grid.
2. Net- Metering and Grid connectivity of the roof top solar PV system under this scheme shall be in accordance with the prevailing guidelines of the concerned KSEB Regulations. Obtaining permission from local authority/KSEB/Electrical Inspectorate for installation and commissioning of SRTPV Power Plant, liaison and approval with all connected paper work is in the scope of Contractor. Any charges in this matter shall be borne by the Contractor. Application Charges, Statutory Charges against receipts in the name of Bank shall be borne by the Bank

**3. Proposed Grid Tied Solar Rooftop Solar Panel System**

A Grid Tied Solar Rooftop Solar Panel consists of Photo Voltaic array, Module Mounting Structure, Inverter consisting of Maximum Power Point Tracker (MPPT) and Controls & Protections, interconnect cables, Junction boxes, Distribution boxes and switches. PV Array is mounted on a suitable structure. Grid tied solar rooftop system is without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the SRPV (Solar roof photo voltaic panel) power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications. Solar Rooftop system shall consist of following equipment's/components.

- Solar PV (Photo voltaic) modules consisting of required number of Mono Crystalline PV cells
- Surge Protectors
- Cables DC & AC LT Cables
- Cable Trays

- Grid interactive Power Conditioning Unit with Remote Monitoring System
  - Mounting structures
  - Junction Boxes
  - DC & AC Distribution Panel Boards
  - Earthing and lightening protections
  - Conduits and accessories
  - Any other allied accessories as per operational/site conditions
4. System configuration must conform to Indian grid system (tt-n; 3-phase, neutral & earth).  
The important Technical specification to be taken care during various stages like design, construction, commissioning and maintenance have been enumerated below.
5. System components of the SPV Plant shall conform to the relevant IS/IEC standards as given below and Test certificates issued by the government approved testing lab shall be submitted to the Bank before commencement of work for approval.
6. **SOLAR PHOTOVOLTAIC (PV) MODULES**
- 6.1 The PV modules used should be PID (Potential Induced Degradation) resistant and tested for PID as per IEC 62804
- All the modules used in this contract shall be of Mono Crystalline technology.
  - All the modules used shall be equipped with factory made anti-soiling coating.
- 6.2 The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-1: Requirements for construction and Part 2: Requirements for testing, for safety qualification or equivalent IS.
- For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701.
  - PV modules must be tested and approved by one of the IEC authorized test centers.
  - The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.
  - The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.

|  |
|--|
| <b>i. SPV Modules</b>  |
| a) IEC 61215 / IS 14286 for Crystalline Silicon Terrestrial PV Modules                                     |
| b) IEC 61730 Part 1 & 2  |
| c) IEC 61701   |
| d) STC performance certificate   |
| <b>ii. Balance of System (for PV Power Plants)</b>   |
| a) Power Conditioners/Inverters –IEC 61683 & IEC 60083-2(1,2,14,30),IEC62116,IEC62109/Equivalent standards |
| b) Cables- IS: 1554/IEC 60502 AND IS 694/IEC 60227 or Equivalent IS standard                               |
| c) Switches/Circuit Breakers/ Connectors – IS/IEC 60947 Part I,II,III & EN 50521                           |
| d) Junction Boxes / Enclosures of Inverters- IP 65 & IEC 62208   |

6.3 Other general requirement for the PV modules and subsystems shall be the Following:

- a) The rated output power of any supplied module shall have tolerance of +/- 3%.
- b) The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
- c) The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
- d) I-V (Current – Voltage) curves at STC (standard test conditions) should be provided by bidder.

**FOLLOWING COMPONENTS FORM PART OF THE SOLAR ROOF TOP SYSTEM:-**

- ☐ ARRAY STRUCTURE
- ☐ JUNCTION BOXES (JBs)
- ☐ DC DISTRIBUTION BOARD:
- ☐ AC DISTRIBUTION PANEL BOARD
- ☐ INVERTER

Typical technical features of the inverter shall be as follows:

| Parameter                               | Requirement  |
|---|--|
| Switching devices                       | IGBT/MOSFET  |
| Control                                 | Microprocessor / DSP (Digital Signal Processor)                    |
| Nominal AC output voltage and frequency | 415V, 3 Phase, 4 Wire 50 Hz  |
| Grid Frequency Synchronization range    | +/- 5 Hz   |
| Design Ambient temperature              | 50 Deg. C  |
| Humidity                                | 95 % non-condensing  |
| Protection of Enclosure                 | IP54 for Indoor / IP65 for Outdoor                                 |
| Grid Frequency Tolerance range          | +/- 5 Hz   |
| Grid Voltage tolerance                  | -0.20.15   |
| No-load losses                          | Less than 1% of rated power  |
| inverter efficiency(minimum)            | >93%   |
| THD                                     | < 3%   |
| Power Factor                            | > 0.9  |
| Communication interface                 | IEC 61850, RS 485 with Modbus                                      |
| Projections(min)                        | Over voltage (both input and output)                               |
|   | ▪ Over current (both input and output)                             |
|   | ▪ Over/Under grid frequency  |
|   | ▪ Over temperature   |
|   | ▪ Short circuit  |
|   | ▪ Lightning Surge voltage induced at output due to external source |
|   | ▪ Anti-islanding   |
| Alert/Indications (Min)                 | Inverter ON  |
|   | ▪ Grid ON  |

|                               |                                    |
|-------------------------------|------------------------------------|
| LCD Display on Inverter (min) | ▪ Inverter Under / Over Voltage    |
|                               | ▪ Inverter Overload                |
|                               | ▪ Inverter Over Temperature        |
|                               | Output power (W)                   |
|                               | ▪ Daily Energy (Wh)                |
|                               | ▪ Cumulative energy (Wh)           |
|                               | ▪ DC voltage (V)                   |
|                               | ▪ DC current (A)                   |
|                               | ▪ AC voltage (V)                   |
|                               | ▪ AC frequency (Hz)                |
|                               | ▪ AC current (A)                   |
|                               | Cumulative hours of operation (h). |

- i. Solar photo voltaic module array shall consist of high efficiency Solar Modules utilizing Mono Crystalline-Mono PERC high efficiency, high power Crystalline Silicon Terrestrial Solar Photovoltaic cells.
- ii. Solar module shall be laminated using lamination technology using established polymer (EVA) and Tedlar / Polyester laminate. Anti-reflection coating to be applied on cells to improve light absorption and to increase cell performance.
- iii. The modules shall be connected in suitable series / parallel combination to meet the voltage / current requirements of the Inverter units.
- iv. The rated output power of any supplied module shall not have negative tolerance.
- v. Module shall be made of high transmissivity glass front surface giving high encapsulation gain and hot butyl rubber edge sealant for module protection and mechanical support.
- vi. All materials used must have a proven history of reliable and stable operation in external outdoor applications.
- vii. The Solar PV modules and production processes employed in the manufacture of the offered module shall be in accordance with the requirements of IEC 61215 Ed 2, IEC 61730 Part 1 & 2, IEC 61701 for operation in corrosive atmosphere.
- viii. SPV Modules shall be certified by NABL/IECQ accredited test centre. Copy of the above IEC Certifications must be provided before placing of the order for supply of modules.
- ix. The module frame must be made of corrosion resistant materials, which is electrolytically compatible with the structural material used for mounting the module.
- x. Module Junction box shall of Flame proof / Explosion proof type be designed for long life outdoor operation in harsh environment and shall be IP 65 or better.
- xi. Degradation of power generated should not be exceeding 20% of the min. rated power over a 25 year period.
- xii. Efficiency of solar PV system shall be guaranteed to 90% for up to 10 years & 80% for up to 25 years.
- xiii. The PV modules shall be equipped with bypass diode to minimize power drop caused by shades.
- xiv. The solar modules shall have suitable encapsulation and sealing arrangements to protect the silicon cells from the environment. The arrangement and the material of encapsulation shall be compatible with the thermal expansion properties of the Silicon cells and the module framing arrangement / material. The encapsulation arrangement ensures complete moisture proofing during life of the solar modules.
- xv. Each module must have low iron tempered glass front for strength and superior light transmission. It also must have tough multilayered back sheet for environment protection against moisture and high voltage electrical insulation.

- xvi. Solar PV modules shall be sourced only from those manufacturers who are listed in the latest list ALMM order issued by the Grid Solar Power Division of Ministry of New & Renewable Energy, Government of India.
- xvii. Each PV module shall have an RF identification tag (RFID) fixed inside the module laminate, but able to withstand harsh environmental conditions, containing following information.
  - Name of manufacturer of PV Module
  - Name of manufacturer of Solar cells
  - Month & Year of manufacture (separately for Solar cells & module)
  - Country of origin (separately for Solar cells & module)
  - I-V Curve for the module
  - Peak wattage  $I_m$ ,  $V_m$  and FF for the module
  - Unique serial no. and model of the module
  - Date and year of obtaining IEC PV module qualification certificate
  - Name of the test lab issuing IEC certificate
  - Any other relevant information on traceability of solar cells and module as per ISO 9000 series.
- xviii. Modules shall be North-South oriented.
- xix. MCB of suitable rating to be provided for connecting / disconnecting Solar array and PCU for maintenance purposes.
- xx. The Solar PV Modules shall meet all the requirements of latest MNRE guidelines.
- xxi. The module mounting structure shall be anodized extruded aluminum mono rail designed as per prevailing IS 800 and IS 801 and Sections shall be as per IS 808 and IS 811 (Latest edition).

#### Standards

- ☐ Environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068- 2(1,2,14,30) / Equivalent BIS Std.
- ☐ Environmental testing should qualify IEC 60068-2 (1, 2, 14, 30) / Equivalent BIS standard.
- ☐ The junction boxes / enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications.
- ☐ The broadly defined technical sheet is annexed for reference. However Zones are advised to cross check the same as per extant State guidelines and working procedure.
- ☐ The PCU / inverters should be tested from the MNRE approved test centers / NABL / BIS/ IEC accredited testing-calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.
- ☐ Anti-islanding (Protection against Islanding of grid): The PCU shall have anti islanding protection in conformity to IEEE 1547/UL 1741/ IEC 62116 or equivalent BIS standard.
- ☐ Successful Bidders shall be responsible for limiting dc injection into the grid and load as per the CEA/state regulations.
- ☐ The PCU/ inverter generated harmonics, flicker, DC injection limits, Voltage Range, Frequency Range and Anti-Islanding measures at the point of connection to the utility services should follow the latest CEA (Technical Standards for Connectivity Distribution Generation Resources) Guidelines.
- ☐ The inverter control system shall be fully compatible for remote data logging.
  - INTEGRATION / SYNCHRONIZATION OF PV POWER WITH GRID
  - NET METERING AND GRID CONNECTIVITY
  - LIGHTNING PROTECTION

- SURGE PROTECTION
- EARTHING PROTECTION
- GRID ISLANDING
- CABLES(Shall meet IEC 60227 / IS 694, IEC 60502 / IS1554 standards)
- DANGER BOARDS AND SIGNAGE
- MODULES CLEANING SYSTEM
- Safety Requirements

## 2) Mechanical Features

- Solar Photovoltaic Module shall be made of toughened, low iron content, high transmissivity front glass.
- Anodized Aluminum Frame shall be provided around the module.
- The module shall be encapsulated with Ethyl Vinyl Acetate (EVA).
  - Silicon edge sealant shall be provided around laminate.
  - The back surface shall be Tedlar /Polyester trilaminate.
- Weather proof (IP 65) terminal box shall be provided for the module output terminations.
- The module shall be Resistant to water, abrasion, hail impact, humidity & other environmental factors for the worst situation at site.
- Bypass diode arrangement shall be provided.
- All nuts and bolts shall be made of very good quality stainless steel (SS 304 minimum)

## 3) Marking

Each module shall carry the following clear indelible markings as minimum:

- Name, monogram of manufacturer
- Type or module number
- Module serial number
- Polarity of terminals
- Maximum system voltage for which module is designed
- Date and place of manufacture

## 4) Module Mounting Structure

- i. Module Mounting Structure should be as per MNRE specifications and supply & installation shall be in scope of contractor.
- ii. The structure shall be designed in accordance with the latitude of the place of installation. The array mounting structure shall be designed to allow easy replacement of any module and shall be in line with site requirement. Structure shall be designed for simple mechanical and electrical installation. It shall support SPV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly.
- xxii. The array structure shall be made of hot dip galvanized MS angles/ anodized extruded aluminum mono rail designed as per prevailing IS 800 and IS 801 and Sections shall be as per IS 808 and IS 811 (Latest edition). All nuts & bolts shall be made of very good quality stainless steel.
- iii. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from SPV panels at the same time it will withstand wind speed up to maximum of 200 km/hr.

- iv. The contractor shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings after receiving the offer.
- v. The structure layout drawings shall be submitted to the Bank for approval after receiving the offer.
- vi. The contractor can visit the site before quoting the rate for civil works. After taking in to consideration all aspects of the site, condition of roof etc., the contractor shall quote for civil works. No extra claim shall be entertained at post project stage.
- vii. The foundation design of module structure design shall be submitted to banker for approval. The work will be carried out as per designs approved by bank. The contractor shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to, the following;
  1. Determination of true south at the site;
  2. Array tilt angle to the horizontal, with permitted tolerance;
  3. Details with drawings for fixing the modules;
  4. Details with drawings of fixing the junction/terminal boxes;
  5. Interconnection details inside the junction/terminal boxes;
  6. Structure installation details and drawings;
  7. Electrical grounding (earthing);
  8. Inter-panel/Inter-row distances with allowed tolerances; and
  9. Safety precautions to be taken.
- viii. The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the rooftop columns properly. All nuts and bolts shall be of very good quality stainless steel.
- ix. The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels

#### **5) DC Combiner Box/Array Junction Box**

The junction boxes shall be dust proof, vermin and waterproof and made of FRP/powder coated Aluminium.

The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables and earthing provision shall be available. Suitable markings shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. Each main junction box shall be fitted with appropriate rating blocking diode. The junction boxes shall be of reputed make and conform to IP65 standards and IEC 62208. Door shall be of hinged door with EPDM rubber gasket to prevent water entry.

The junction boxes shall have suitable arrangement for the Following:

- Combine groups of modules into independent charging sub-arrays that shall be wired to the controller.
- Provide arrangement for disconnection for each of the groups.
- Provide a test point for each sub-group for quick fault location.
- To provide group array isolation.
- The rating of the JB's shall be suitable with adequate safety factor to inter connect the Solar PV array.
- Suitable capacity MOVs shall be provided within the box to protect against lightning.

- Fuse Protection on Strings: DC fuses rated from 2A to 25A from leading manufacturers to be used in the combiner box to provide over-current protection. Fuses to be provided with indication.
- Surge Protection Device: Surge Protection devices or SPD to be provided to protect the combiner/junction box from any power surge and voltage spike. SPD to be used should meet Type 2 regulations, and to be typically rated between 600 to 1000V.
- Input Glands/ Connectors: The combiner/ array junction box offered is to be provided with IP 67 rated Cable Glands or MC 4 connectors at the input side to lead the array strings into the box.

#### **6) Grid Interactive Inverter/PCU**

- i. The Power Conditioning Unit comprises the Inverter(s) and associated MPPT, control, protection, data logging devices etc.
- ii. Solar array shall produce DC energy output which shall be supplied to the DC bus for inverting to AC voltage. Maximum Power Point Tracking (MPPT) system shall be an inherent feature of the system and shall be used to extract maximum energy from solar array to produce 415 VAC 3 ph 50 Hz output. The output shall be synchronized with the station's grid power.
- iii. The system shall generate power for use during the day-light hours directly by the captive load.
- iv. The peak efficiency of PCU shall not be less than 97% & shall be designed to meet the Solar PV Array capacity control which will extract maximum energy from solar array and provides 415V AC +/-10%, 50HZ, to synchronize (and not export) with local utility grid in Indian ambient conditions.
- v. The efficiency of PCUs used at INSOLATION levels of 10% to 90% shall not be less than 90%.
- vi. Output of Inverter shall be 3 phase, 415 v +/- 10%, 50 Hz sine wave with < 3% total harmonic distortion (THD). Additionally, it will provide protection features such as over current, short circuit, over temperature as a minimum.
- vii. PCU shall be of very high quality having high peak efficiency of 97% and above. The PCU should be completely compatible with the SPV array voltage and local grid / DG supply voltage.
- viii. Switching shall be MOSFET / IGBT based.
- ix. Idle current shall be less than 4% of rated capacity.
  - x. The PCU shall be string type inverters to reduce the DC power losses & can have the flexibility to increase the capacity of the plant.
  - xi. The PCU shall be designed for continuous, reliable power supply as per specifications.
  - xii. The PCU shall be capable of complete automatic operation and shall be capable to synchronize independently & automatically with the grid supply and DG Supply. The idea for installing SPV unit is to be utilize whatever power is available and directly feed into the system irrespective of whether grid supply is 'ON' or DG is 'ON' on SOLAR FIRST basis.
- xiii. The PCU shall have a built-in data logging facility to remotely monitor and control plant performance through external PC.
- xiv. The PCU shall have internal protection arrangement against any sustained fault. The dimension, weight, foundation details etc. of the PCU shall be clearly indicated in the detailed technical specification provided by the contractor.
- xv. It has user friendly LED / LCD Graphical display for programming and viewing of the Solar system parameters and protection status.
- xvi. The operating temperature range shall be -20 to +50 deg C
- xvii. Housing cabinet – IP-20(Minimum) for indoor, IP-65(Minimum) for outdoor



- xviii. Power factor shall be greater than 0.9
- xix. Cooling shall be forced air cooling through cooling fan.
- xx. The system shall be capable of automatic operation with automatic wake-up in the morning and providing supply to the load after synchronizing with Grid/DG supply.
- xxi. When the generated power is below a low, preset value or the solar insolation is below a set value for a pre-determined amount of time, the inverter shall be disconnected from the grid and shall be operated in a “sleep mode”. In this mode, the inverter power stage components shall be switched off, thereby keeping the stand by losses to a bare minimum.
- xxii. Unique MPPT algorithm shall adjust the DC Link operating voltage to ensure that maximum power is extracted from the solar array in an efficient manner.
- xxiii. Automatic “Sleep Mode” shall be provided to reduce standby losses.
- xxiv. The system shall be designed to minimize both conducted and radiated RFI emissions.
- xxv. The capacity of the Inverter shall be chosen based on the PV system wattage. However, the total Peak output Power rating of all the PCU’s at operating temperatures of 45 deg C shall not be less than 150 KW.
- xxvi. Overload protection shall be min. 150% for one minute.
- xxvii. The inverter must have a DC disconnect switch / device.
- xxviii. MCB/MCCB of suitable rating to be provided for connecting / disconnecting Load and PCU.
- xxix. The inverter must have an integrated MODBUS RS-485 interface for connectivity.
- xxx. Potential free contact shall be provided for the ‘Solar system operation status’ for remote monitoring.
- xxxi. The PCU shall meet all the requirements of latest MNRE guidelines.

#### **7) Indications**

- Inverter on
- Grid on
- Inverter under voltage / over voltage
- Inverter over load
- Inverter over temperature

#### **8) Protections**

- Over voltage at input
- Over current at output
- Over / under output voltage
- Over / under grid frequency
- Over temperature
- Short circuit
- DC reverse polarity
- Protection against lightning
- Surge voltage protection

#### **9) Remote Monitoring**

- DC power input
- DC input voltage
- DC input current
- AC power output
- AC voltage

- AC current
- AC frequency
- Power factor
- Energy harvested daily / monthly / yearly
- Inverter status
- Total power generated/operation time

The PCU including MPPT and protection shall conform to IEC 61683 / IS 61683, IEC 60068 – 2 / equivalent BIS standards.

#### **10) Data Monitoring of Solar Power Plant**

The system performance monitoring and solar generation data is recorded using a data logger. The Monitoring system shall comprise of the following main components:

- PCU logs the inverter performance data and transmits the same to the Data logger.
- Data monitoring system logs irradiance (solar insolation) and ambient temperature. Necessary sensors required for the same shall be provided by the Contractor and sensor outputs interfaced to the Solar monitoring system
- Data logger gathers information and monitors the performance of the inverter. It also supports measurements from the external sensors. The data can be acquired through Ethernet port (RJ45) and shall be available to connect to Bank network.
- The data acquisition system shall have a real-time clock and data storage capacity for recording data round the clock.
- The monitoring of the Solar system and logging / viewing of system data shall be accessible to the designated Bank Staff.
- The Solar system data shall be logged in chronological order, date wise. The periodicity of data logging shall be configurable.
- The system shall be capable of providing graphical trends for viewing the system parameters on real time as well as historic basis. It shall be possible to generate reports based on the logged historic data which shall be exportable in MS Excel / PDF formats.
- System shall have provision for remotely viewing the System status on local LAN /INTRANET of bank.

#### **11) AC Distribution Board (ACDB)**

- An AC distribution board shall be provided between the Inverter and the existing LT Panel/L.T KIOSK of bank. This panel shall have provision for protection, connection and disconnection of individual inverters from the AC system. The AC Panel shall be used to combine the AC Power coming from the inverters.
- The AC Panel shall be dust, vermin & water proof & made of FRP / ABS plastic/ Fabricated from 16 SWG Sheet steel
- The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables.
- Suitable markings shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification.
- It should have the facility to protect from over currents & isolate the AC box from the main AC line.
- The AC Box should have surge protection devices, to protect inverters from surges in the AC line.

- The circuit breakers / load– break switches must have facility for service & emergency safety requirements.
- The Solar Power should be exported to the LT Panel bus bar.AC panel shall be provided with an Energy Meter for recording the exported solar power to the L.T Panel. The Energy meter provided shall be conforming to the KSEB specifications should have Modbus RS- 485 communication interface.

## **12) DC Distribution Board (DCDB)**

DC Distribution panel board shall be provided to receive the DC output from the array field. DC DPBs shall have enclosure of dust & vermin proof. The bus bars shall be made of copper of desired size. Suitable capacity MCBs along with necessary surge arrestors shall be provided for controlling the DC power output to the PCU/Inverter. DCDB shall be fabricated by CRC Sheet/ FRP / ABS plastic to comply with IP 65 protection.

## **13) Cables and Accessories**

- 1.1. Cables should be FRLS PVC insulated Copper Conductor cables for D.C power supply and aluminium conductor PVC/ XLPE insulated PVC sheathed armoured Cables of suitable rating for AC power supply.
- 1.2. Grade and shall conform to IS: 1554 / IEC 60502 AND IS 694 / IEC 60227.
- 1.3. Copper Cable should be Bright Annealed 99% pure Copper Conductor. Conductor shall be of electrolytic copper confirming to IS: 8130
- 1.4. Cables shall be UV and weathering resistant.
- 1.5. Voltage drop & losses to be kept to minimum. On DC side voltage drop to be max 1%.
- 1.6. Cables shall be laid on prefabricated GI cable trays and through suitable HDPE/PVC conduit pipes.
- 1.7. All interfaces between panel integral cable and extension cable must be done using MC4 equivalent connectors only.

## **14) Earthing and Lightning Protection**

### **14.1 Earthing Protection**

Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043 -1987. In addition the lighting arrester/masts should also be provided inside the array field. Provision should be kept for shorting and grounding of the PV array at the time of maintenance work. All metal casing/shielding of the plant should be thoroughly grounded in accordance with Indian Electricity Act/IE Rules. Earth Resistance shall be tested in presence of the representative of bank as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly. Earth resistance shall not be more than 5 ohms for individual pit and shall be less than 1.0 Ohms for Grid in line. It shall be ensured that all the earths are bonded together to make them at the same potential. The earthing conductor shall be rated for the maximum short circuit current, and shall be 1.56 times the short circuit current. The area of cross -section of conductor shall not be less than 1.6 sq mm in any case. The earthing pits shall be made at locations approved by bank.

### **14.2 Lightning protection**

The SPV power plants shall be provided with lightning & overvoltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. the entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IEC 62305 standard. Contractor shall provide the lightning Arrester System by using 8 mm dia 50 sq mm cross section corrosion resistant AlMgSi Alloy rigid round rod/wire for running on the

sheet roofing, for down conductors and air termination conductors designed as per IEC 62305 complete with 16/10 mm dia concrete base fixing type 16/10 mm dia air termination rods where ever required complete with all the accessories as per standards. There shall be the required number of suitable lightning arrestors installed in the array area. Lightning protection shall be provided suitable earthing such that induced transients find an alternate route to earth. Protection shall meet the safety rules as per Indian Electricity Act2003/IE rules

#### **15) Finish & Painting**

*Corrosion Resistance:* All surfaces of the equipment including frame modules, covers, chassis, brackets, etc., shall be treated to prevent corrosion. The ACDB/DCDB shall be Galvanised iron / powdered coated/Weather proof paint. Colour scheme shall be as follows: Siemens Gray  
*Name Plate:* A name plate, an anodized, screen printed or any other arrangement ensuring better life expectancy designation plate in “Bold” letters showing “..... kWp SPV POWER PLANT UNDER GREEN INITIATIVE SCHEME”.

#### **16) TOOLS, SHACKLES**

After completion of installation & commissioning of the power plant, necessary tools & shackles are to be provided free of cost by the supplier for maintenance purpose.

#### **17) Documentation**

Supplier shall provide 02 sets of Operation & Maintenance Manual in English for the complete system with Block diagram, detailed description of all the system components, mounting of PV Module, electronics used, working, starting and shutdown procedures, maintenance and trouble-shooting instructions, DO's & DONT's, Name & address of contact person or Centre to be contacted in case of complaints/ failure. Warranty Card & Service entry card shall be provided with the SPV Power Plant systems. Supplier shall provide 02 sets of the As-built Detailed Wiring diagrams, Array layout and termination schedules. Approval of Bank needs to be obtained on the content of Manual,

#### **18) Installation of Components and Materials**

Description:

1. Supply and installation of Module mounting structure/ super structure for mounting at roof top.
2. The PV modules shall be installed with necessary tilt with the most effective orientation. Tilt angle to be optimized to obtain maximum generation.
3. Supporting structure material shall be compatible with the PV panel mounting frame.
4. Each module can be mounted on a mounting structures fabricated from hot dip galvanized MS/, using appropriate clamps and trapezoidal sheet holders, rail track connectors, screws and fixtures. The structure shall be non-corrosive and long lasting. Each structure will carry multiple modules to form a row. The structure shall be capable of withstanding a wind speed of 200Km/Hr after grouting and installation and shall be designed to cater very rough climatic conditions. The mounting structure shall be guaranteed for at least 5 years.
5. Supply and installation of power conditioning unit (PCU) consisting of Solar Charge Controller/ Inverter.
6. The installation shall include the electrical wiring, cabling, terminations, cable trays, micro/ string inverters, metering and hooking up the system to the including synchronization with plant main LT Panel grid / DG set.
7. Installation of inverter should be in a ventilated area and proper inter-spacing is to be provided.
8. Laying of power/ control copper cables from PV power to plant room, Main LT panel.

9. Supply and installation of cables on prefabricated GI cable trays and / or within suspended ceiling spaces including installation, cable trays, hangers, supports, cable terminations all fixing accessories (terrace to plant room inclusive of PVC sleeve/ other accessories etc. wherever required)
10. Supply and installation of earthing system with testing joint for every pit (grounding) system including cutting of roads / paved areas / PCC floor etc and making as good as in original shape. Prior to execution, design shall be submitted by contractor for approval by bank.
11. Supply and installation of lightening arrester, required as per statutory norms/guidelines as approved by bank.

#### **19) Testing and commissioning**

Pre-commissioning tests of all electrical equipments. Specific points to be considered during commissioning are:

1. Continuity checking and insulation resistance measurement of cables.
2. Proper crimping, lugging and glanding of cables before final terminations.
3. Checking of all electrical terminations for any loose contacts.
4. Proper earthing of electric equipment & solar array to be ensured.
5. At junction box in solar array, voltage levels to be checked (between positive & negative terminal, positive to earth and negative to earth) in consultation with inverter OEM.
6. Inverter to be checked in testing mode and after No Fault indication is displayed on LCD it is to be connected to grid/battery.

#### **20) Annual Generation Guarantee**

Contractor shall give minimum annual power generation guarantee of 37800 Units/~~Kwh~~ for first year (Calculated on the basis of average 4.2 KWH per KWp functioning for 300 days) and for subsequent years as per following –

|          |                                |
|----------|--------------------------------|
| 2nd Year | : 99.0% of 1st Year Generation |
| 3rd Year | : 98.5% of 1st Year Generation |
| 4th Year | : 98.0% of 1st Year Generation |

In case of short fall, Contractor will compensate for the less power generated as per prevailing rate of State electricity board for first five years. The power generation trend after first 5 years must be mentioned.

Contractor may monitor the performance of system installed. In case Contractor finds that installed system will not meet assigned minimum annual guarantee, it is up to Contractor to upgrade the system to meet the minimum requirement at his own cost.

### **2. LT Panel & AC Distribution Box - Interconnection**

The Inverter / Power conditioning unit converts DC energy produced by solar array to 3 phase AC power. The AC power output of the inverter shall be fed to the AC Distribution Box (metering panel & isolation panel) which also houses energy meter. The 415 V AC output from the AC distribution box is fed to the owner's LT panel for feeding the building load. The AC power from the Solar Inverter shall be synchronized with the station's supply grid and power is fed into the building load on continuous basis. The connectivity / interfacing of the AC power output from the Solar Inverter to the existing grid power shall be designed and carried out by the contractor including all cabling work. First preference for drawing power shall be from Solar Inverter, the balance power shall be automatically drawn

from the grid supply. Contractor shall finalize the scheme of interconnection to LT Panel / load after discussion with bank.

**3. Integration Of Solar Power With Grid**

The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the consumer load and the surplus power to be fed into the grid after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid. 4 pole isolation of inverter output with respect to the grid/ DG power connection need to be provided.

**4. Grid Islanding**

- i. In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as “islands.” Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.
- ii. A manual disconnect 4pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel

**5. Acceptance Criteria**

Final acceptance of the integrated system will be given only after validating the performance of the system as in Installation, Testing and Commissioning of clause above.

**6. Guaranty**

All the components of the system shall be guaranteed for any manufacturing defect or inferior components for a period of **FIVE years** from the date of commissioning.

**7. Training**

The supplier shall provide training to at least 3 departmental operators on the O & M aspects of the system

**SIGNATURE OF THE CONTRACTOR WITH SEAL**

| <b>Technical Data Sheet to be compulsorily filled by contractor for 30.00 kWp Solar Photo Voltaic Power Plant, Roof top Grid Tie System</b> |   |  |                         |
|---|---|--|-------------------------|
| <b>SN</b>   | <b>Specification</b>                                      | <b>Bank Requirement</b>                      | <b>Contractor Reply</b> |
| <b>A.</b>   | <b>SPV power plant</b>                                    |  |                         |
| 1   | Rated Output  | To be mentioned by Contractor                |                         |
| 2   | No. of PV Modules Proposed to be installed.               | To be mentioned by Contractor                |                         |
| 3   | No. of series module in one array                         | To be mentioned by Contractor                |                         |
| 4   | No. of array in parallel combination                      | To be mentioned by Contractor                |                         |
| <b>B.</b>   | <b>SPV Module</b>   |  |                         |
| 1   | PV Cell type  | To be mentioned by Contractor                |                         |
| 2   | Make of SPV Cell  | To be mentioned by Contractor                |                         |
| 3   | Make of SPV Module  | To be mentioned by Contractor                |                         |
| 4   | Maximum Power Rating of one module                        | To be mentioned by Contractor                |                         |
| 5   | Rated Current of Module                                   | To be mentioned by Contractor                |                         |
| 6   | Rated Voltage of module                                   | To be mentioned by Contractor                |                         |
| 7   | Short Circuit Current of module                           | To be mentioned by Contractor                |                         |
| 8   | Open Circuit Voltage of module                            | To be mentioned by Contractor                |                         |
| <b>C.</b>   | <b>Mounting Arrangement</b>                               |  |                         |
| 1   | Mounting type   | Mounting on Sheet Roofing                    |                         |
| 3   | Tilt angle (slope) of PV Module                           | To be mentioned by Contractor                |                         |
| <b>D</b>  | <b>DC Combiner Box/ Array Junction Box</b>                |  |                         |
| 1   | Enclosure   | To be mentioned by Contractor                |                         |
| 2   | Necessary Fuse Protection & Surge Protection              | Required                                     |                         |
| 3   | Rated Insulated Voltage                                   | DC 1000V                                     |                         |
| <b>E</b>  | <b>Power Conditioning Unit (PCU) / Inverter</b>           |  |                         |
| 1   | Make of PCU/Inverter                                      |  |                         |
| 2   | Nominal Output power at site based on the site conditions | Total 30.00Kwp                               |                         |
| 4   | DC Array Input Operating Voltage                          | (-20% to +15%) of the DC Array input voltage |                         |
| 5   | Type of solar charge controller                           | MPPT Based Solar Charge Controller           |                         |
| 6   | Switching device  | MOSFET/IGBT based                            |                         |

|    |   |   |  |
|----|---|---|--|
| 7  | Continuous inverter Output Rating (KVA)   | To be mentioned by Contractor   |  |
| 8  | Output Wave Form  | Pure Sine Wave Output   |  |
| 9  | Total Harmonic distortion   | < 3% @ nominal power  |  |
| 10 | Output Voltage  | 3 ph, 415± 10 %   |  |
| 11 | Output Frequency  | 50Hz ± 3%   |  |
| 12 | Power Factor  | > 0.9   |  |
| 13 | PCU Efficiency  | > 90% at nominal voltage & power  |  |
| 14 | Inverter efficiency   | 94% to 98% at full load   |  |
| 15 | No. of Inverters with Configuration   | To be provided by Contractor (to meet nominal output power)                             |  |
| 16 | Inverter Type   | To be mentioned by Contractor   |  |
| 17 | Idle Current  | < 4% of rated capacity  |  |
| 18 | Regulation  | ±2% for DC I/p variation & o/p load variation   |  |
| 19 | Overload Features   | 150% for 1 minute   |  |
| 20 | Cooling   | Forced Air cooling, with temperature controlled cooling fan                             |  |
| 21 | Operating Temperature   | 0 to 50 °C  |  |
| 22 | Relative Humidity   |   |  |
| 23 | LED/LCD Display : Indications   | Display shall indicate system functional parameters and protection functional indicator |  |
| 24 | Data monitor and display controls   | RS485, Ethernet OR RS232 connectivity   |  |
| 25 | Protections   |   |  |
|    | a. Input over voltage<br>b. Low/high frequency<br>c. Short circuit<br>d. Under/over output voltage<br>e. Over Temperature<br>f. Grid Input under voltage / over voltage with auto recovery<br>g. DC disconnect device<br>h. DC reverse polarity<br>i. Anti-Islanding Protection as per the standard | To be mentioned by Contractor   |  |
| 26 | Enclosure Protection  | IP 20(for indoor) IP 60 (for outdoor)as per IEC 529                                     |  |
| 27 | Safety  | 1. IEC 62103  |  |



|          |   |  |  |
|----------|---|--|--|
|          |   | 2. IEC 62109 Part 1 & 2<br>3. Galvanic Isolation at input & output through transformer |  |
| 28       | Audible Noise                                       | < 45dB at 1 Meter  |  |
| 29       | Power Control                                       | MPPT suitable for hybrid operation.  |  |
| <b>F</b> | <b>DC/AC Distribution</b>                           |  |  |
| 1        | DC Side Quantity & Ratings of MCBs                  | To be mentioned by Contractor  |  |
| 2        | AC Side Quantity & Capacity of MCBs                 | To be mentioned by Contractor  |  |
| 3        | Details of measuring                                | To be mentioned by Contractor  |  |
| 5        | Other Details                                       | To be mentioned by Contractor  |  |
| <b>G</b> | <b>Cables</b>                                       |  |  |
| 1        | Make  | To be mentioned by Contractor  |  |
| 2        | Size  | To be mentioned by Contractor  |  |
| 3        | Other Details                                       | To be mentioned by Contractor  |  |
| <b>H</b> | <b>Earthing</b>                                     |  |  |
| 1        | Details of points earthed                           | To be mentioned by Contractor  |  |
| 2        | Earth Resistance                                    | To be mentioned by Contractor  |  |
| <b>J</b> | <b>Datasheet for Modules, Inverter, Cables etc.</b> | To be submitted along with the bid   |  |

#### Approved Makes

| S.No. | Name of the material            | Approved make                        |
|-------|---------------------------------|--------------------------------------|
| 1     | SPV Modules, Mono PERC Half cut | Renesys/Adani/Orb/Havells/Equivalent |
| 2     | Mounting structure              | Jindal/Sail/HDGI and Equivalent      |
| 3     | Invertor                        | Growatt/Evvo/SMA/Equivalent          |
| 4     | AC DB                           | SCHIEDLER/Siemens/ABB/Equivalent     |
| 5     | DC DB                           | SCHIEDLER/Siemens/ABB/Equivalent     |
| 6     | Cables                          | Polycab/Havells/Equivalent           |
| 7     | Balance of system(BOS)          | As per standard                      |

**SIGNATURE OF THE CONTRACTOR WITH SEAL**

### **SCOPE OF COMPREHENSIVE AMC**

#### **A) MAINTENANCE DURING DEFECT LIABILITY PERIOD OR WARRANTY PERIOD**

1. The Contractor shall maintain the plant and associated equipment free of cost and ensure that it works as per Tender parameters.
2. All spares required for normal operation as per tendered parameters shall be replaced at no extra cost.
3. The number of visits shall be same as stipulated in Comprehensive Annual Maintenance.

#### **B) COMPREHENSIVE ANNUAL MAINTENANCE (CAM) (after the defect liability period )**

1. The Contractor shall maintain the plant and associated equipments for a period of three years after the expiry of defect liability period of one year and ensure that it works as per the tendered parameters.
2. The rate of annual maintenance charges shall be furnished for a period of 3 years after the expiry of warranty/defect liability period and the rates quoted shall be binding on the Contractor.
3. The cost of CAM furnished shall also be one of the criteria in evaluation of cost economics.
4. The Comprehensive Annual Maintenance Charges shall be paid quarter wise (as by bank's Financial Year) in advance subject to satisfactory maintenance of previous quarter.

### **SCOPE OF COMPREHENSIVE ANNUAL MAINTAINANCE CONTRACT FOR SOLAR ROOF TOP POWER SYSTEM (CAMC)**

The Contractor shall offer the following at no extra cost to the bank. The rate quoted for CAMC should include the following.

1. The Contractor shall maintain the plant and ensure that it works as per the Tendered parameters during tenancy of the Maintenance Contract.
2. All the repairs and replacements of spares shall be carried out which are necessitated due to usage of system as per Tender stipulations. However, the repairs and replacements necessitated by loss or damage due to misuse or accident, fire or natural calamities such as earth quake, floods, cyclone shall be out of the scope of CAMC.
3. The Contractor should visit every month for preventive maintenance of the system. If any breakdown calls for emergency service, the same shall be attended within 24 hrs. One of the scheduled preventive maintenance shall also be completed during such visits. Visits also shall be made for the upkeep of the system to ensure at no point of time the plant capacity is less than 90%.
4. During the Preventive Maintenance, the contract includes servicing including PV panel cleaning, repairing, maintenance and replacement of spare parts of Solar Power System for the satisfactory running of the system. During each visit the supplier shall carry out Thermography checks during the CAMC period to identify hot spot of PV modules and take corrective action. The same shall be recorded in a log book which shall be verified and confirmed by bank's representative.
5. During the break down calls, the nature of repair carried out, parts replaced etc shall be recorded in the log book.

#### **OTHER TERMS WITH REGARD TO CAMC:**

1. The rate of annual maintenance charges shall be furnished for a period of 3 years after the warranty/Defect Liability Period and rates quoted shall be binding on the Contractor.
2. The scope and terms of Comprehensive Annual Maintenance Contract (CAMC) like number of monthly visits, items covering under CAMC, replacement of spares exclusions if any, down time for break down and service calls shall be as mentioned above.
3. The Bank reserves the right of discontinuing the CAMC from the contractor during the tenancy of the Maintenance Contract.
4. The cost of Comprehensive Annual Maintenance Charges shall also be one of the criteria in evaluation of cost economics of the tender. All the activities under this clause shall be completed within the stipulated time.

**SIGNATURE OF THE CONTRACTOR WITH SEAL**

## **SCHEDULE OF RATES - PREAMBLE**

1. The schedule of rate should be read in connection with all the other sections of the Tenderer.
2. The quantities shown against the items of work are only approximate and may vary to any extent. No extra whatsoever shall be entertained for variations in quantity.
3. The rates inserted in the bills of quantities are to be for the full inclusive of value of the work described under the several items, including all costs and expenses which may be required in and for the construction and full protection of the work described, together with all risks, liabilities and obligations set forth or implied in the documents on which the Tender is based. The quoted rates shall be for all heights, lifts and leads unless otherwise mentioned specifically in the description of item.
4. General direction and description of work and materials given elsewhere in the Contract documents are not necessarily repeated in the Bill(s) of quantities. Reference to be made to the other documents for the full information/details.
5. The Contractor shall be deemed to have visited the site before quoting for the Tender and to have examined for himself the conditions under which the work will be carried out including local conditions affecting labour and to have studied the items of the bills of quantities, the drawings and specification, relating to them and to have satisfied himself that the rates quoted by him provide for all minor accessories and contingent works or services as necessary for the works described even though they are not specifically defined.
6. Tenderer is advised to read items of works carefully and quote the rates accordingly. However, if he quotes different rates for the same item of work under different schedules of items, the lowest rates quoted shall be made applicable to all the Bills of quantities and the contract sum corrected accordingly.
7. Where an item of work not mentioned in a particular bill of quantities, is required to be executed and where the rate for such an item of work is quoted under a different bill of quantities forming a part of this contract, then the contractor being called upon shall execute the work and shall be paid at the rate so quoted. Nothing extra over shall be payable on this account.
8. The drawing(s) attached with this Tender document are for the purpose of Tender only, giving the Tenderer a general idea of the nature and the extent of works to be executed.
9. The rates quoted by the Tenderer shall be deemed to be for the execution of the works in accordance with the “Construction Drawings” (to be supplied to the contractor at the “Design Aspect” of these drawings).
10. The rates quoted by the Tenderer shall include all labour, tools and plants, materials inclusive of all, transport, loading, unloading charges, all levies, all taxes, excise duties, etc. at the time of quoting their rates. The quoted rates shall remain firm throughout the contract period. No escalation on prices of labour and materials shall be entertained.

## **SCHEDULE OF QUANTITIES - PREAMBLE**

All items of work contracted for shall be executed strictly in accordance with the description of the item in the Schedule of Quantities, relevant drawings and specifications read in conjunction with the appropriate Indian Standard specifications and conditions of the contract and established Engineering practices.

The rate for each item of work included in the schedule of quantities shall unless expressly stated otherwise include cost of:-

- ☐ All materials, fixing materials, accessories sequence of operations, appliances, tools, plant equipment, ladders, ropes, scaffoldings, safety equipment's for work men transport labour and incidentals required and completion of the work called for in the item and as per specifications and drawings completely
- ☐ Wastage on materials and labour
- ☐ Loading transporting, unloading, handling as necessary, hoisting to all levels, and setting, fitting and fixing in position, protecting, disposal of debris as directed and all other labour necessary and to fully complete the job in accordance with contract documents, good practice and recognized principles of trade laid down in codes of practice.
- ☐ Liabilities, obligations and risks arising out of conditions of Contract.
- ☐ All requirements of specifications, whether such requirements are mentioned in the item or not shall be provided for the specifications and drawings where available are to be read as complimentary to any part of the schedule of quantities and any work called for in one shall be taken as required for all similar items.

In the event of conflict between Schedule of Quantities and other documents including the specifications the most stringent among them shall apply and the interpretations of the Consultants/Owner shall be final and binding.

The Contractor shall be paid for the actual quantity of work executed by him in accordance with the drawings at the accepted rates.

This schedule shall be fully priced and the extensions and totals duly checked. The rates for all items shall be filled in INK. The entries under amount column shall be rounded off to the nearest Rupee.

No alterations whatsoever is to be made either to the description of items in the Schedule of quantities or specifications unless such alterations, is clarified in writing by the Consultant/Owner. Any such alterations, notes or additions shall unless clarified in writing be disregarded when Tender documents are considered. Any observation on BOQ should be made in the letter accompanying technical bid for proper consideration and on disfiguring or overwriting in the documents is permitted.

In event of an error occurring in the amount column of the schedule, as a result of wrong extension of unit rate and quantity, the unit rate quoted by the Tenderer shall be regarded as firm and the extensions shall be amended on the basis of rates.

All errors in totalling in the amount column and in carrying forward totals shall be corrected.

Unless otherwise stated, all measurements shall be taken in accordance with Indian standard for building of Measurements IS 1200 latest revision effective on the date of measurement for interior items as applicable.

Any errors in quantity of items from the contract schedule shall not vitiate this contract but shall be corrected and deemed to be a variation by the Architect / Consultant/Owner

## **DRAWINGS AND DATA**

Within a week of acceptance of work order, the contractor shall furnish the following data in triplicate for approval by bank. General arrangement drawing of the equipment on orders showing plan, elevations, and sectional views, mounting details.

Bill of materials. Descriptive catalogues, characteristic curves, duty point efficiency factor and technical particulars of all the various equipment's offered.

## **SPARE PARTS AND MAINTENANCE FOR MATERIALS SUPPLIED**

Tenderer shall offer along with the bid, duly recommended by manufacturer set of spare parts required for a period of 1 year's continuous operation. Itemized unit prices with exact quantities recommended for these spares shall be separately indicated for consideration of the Owner/Consultant.

## **DOCUMENTS MUTUALLY COMPLIMENTARY**

The several documents forming the contract are to be read as mutually complementary to each other and in case of ambiguities/ discrepancies, the same shall be explained and clarified by the Consultant/Owner to the Contractor in what manner the work is expected to be carried out to meet the end requirements.

## **INSTRUCTIONS DURING EXECUTION**

On the advice of the Owner, the consultants may issue further drawings and written instructions, details, directions and explanations collectively referred to as "Site instruction" in regard to:

Variations for modification of the design, quality or quantity of works as addition or omission or substitution of any work therein.

Any discrepancies in the drawings or between the schedule of quantities and/or specifications and/or drawings.

Removal from the site any material brought by the Contractor and substitution of any other materials therefore.

The dismissal or removal from work of any person employed thereupon.

Removal/re-examination of any works executed in case of doubt of any nature.

Opening up for inspection of any work covered up without proper tests by the Architect / Consultant/bank.

Oversight on the part of the Architect / Consultant/bank his assistant to disapprove any defective work or material shall not prejudice the Owner/Consultant, thereafter to disapprove such work or materials and to order pulling down, replacement, removal breaking up or reconstruction.

The Contractor shall make his own arrangement for the engagement of all labour and shall be responsible for regulating their service conditions, work conditions in conformity with all Acts, Regulations, Rules or order of competent authority under relevant laws in force during the pendency of the Contract.

Contractor shall indemnify the Owner from all claims relating to the workers/ staff/ sub-contractors, Salaries, Wages, Overtime, Leave, Provident Fund, Medical facilities, gratuity, Bonus or any other claim as applicable and stipulated in any statutory provisions, rules or order of competent authority.

All materials so far as procurable shall be of the reputed make in the category of manufacture and bear the stamp of quality of the Bureau of Standards wherever applicable. The contractor shall furnish documentary proof, test certificates and guarantees as relevant to such materials from manufacturers, which shall match with the date of procurement.

**Seal & Signature of the Tenderer/s**

**Date:**

**Place:**