



**COLOMBO MUNICIPAL COUNCIL
CENTRAL PROCUREMENT DEPARTMENT**

Tel.: 2686389 Fax: 2662329

BID FOR THE SUPPLY OF : DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF GRID CONNECTED SOLAR POWER SYSTEMS AND LIGHTNING PROTECTION FOR COLOMBO MUNICIPAL COUNCIL'S TOWN HALL BUILDING, TOWN HALL NEW BUILDING, MAYORS RESIDENCE, MUNICIPAL PRESS, PUBLIC LIBRARY, AND COMMISSIONER'S RESIDENCE.

BID NO. : CPD/12/1093/2022

BID OPENING DATE AND TIME : 27.04. 2023. @ 10.00 am

PART I
(For office use only)

Name of the Firm:

Department Receipt No : - **MT's Receipt No :**

.....
Issuing Officer

Date: -.....

PART II
(To be filled by the Tenderer)

1. **Name of the Bidder:** -
 2. **Business Address:** -
.....
 3. **Telephone Numbers:** -
 4. **Fax Numbers:** -
 5. **Email Address :** -
 6. **VAT Registration No:** -
 7. **Bid Security No:** -
 8. **Bid Security Amount:** -
-



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CENTRAL PROCUREMENT DEPARTMENT**

Tel.: 2686389 Fax: 2662329

DESIGN SUPPLY INSTALLATION AND COMMISSIONING OF

**GRID CONNECTED SOLAR POWER SYSTEMS
WITH NET METERING AND LIGHTNING PROTECTION**

FOR

COLOMBO MUNICIPAL COUNCIL

AT

**TOWN HALL BUILDING, TOWN HALL NEW BUILDING, MAYORS
RESIDENCE, MUNICIPAL PRESS, PUBLIC LIBRARY, PUBLIC HEALTH,
MUNICIPAL VETERINARY DEPARTMENT, INDIGENOUS MEDICINE
DEPARTMENT, SPORTS AND RECREATION DEPARTMENT, PUBLIC
ASSISTANCE DEPARTMENT, ENGINEERS DEPARTMENT, DRAINAGE
AND WATER SUPPLY, COMMISSIONER'S RESIDENCE.**

BIDDING DOCUMENT

EMPLOYER:

Colombo municipal council,
Colombo 07.

CONSULTANT:

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MUNICIPAL VETERINARY DEPARTMENT, INDIGENOUS MEDICINE
DEPARTMENT, SPORTS AND RECREATION DEPARTMENT, PUBLIC
ASSISTANCE DEPARTMENT, ENGINEERS DEPARTMENT, DRAINAGE
AND WATER SUPPLY, COMMISSIONER'S RESIDENCE**

BIDDING DOCUMENT

VOLUME - 1

SECTION 1	- INSTRUCTIONS TO BIDDERS
SECTION 2	- STANDARD FORMS (CONTRACT)
SECTION 3	- CONDITIONS OF CONTRACT

EMPLOYER:

Colombo municipal council,
Colombo 07.

CONSULTANT:

SECTION 1
INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO TENDERERS (ITT)/ INSTRUCTIONS TO BIDDERS

Instructions to tenderers/bidders applicable to this contract shall be the Instructions to tenderers/Bidders as given in Section 1 of the Standard Bidding Document for Procurement of Works, ICTAD Publication No. ICTAD/SBD/01, Second Edition, January 2007, published by the Construction Industry Development Authority (CIDA), "Savsiripaya", 123, Wijerama Mawatha, Colombo 07.

This publication will not be issued with the Bidding Document and the Bidder is advised to purchase same from CIDA, if required.

Instructions to Bidders shall be read in conjunction with the Bidding data provided under Section 5 of the Bidding Document (Volume 2).

Instructions to Bidders will not form part of the Contract.

SECTION 2
STANDARD FORMS (CONTRACT)

STANDARD FORMS (CONTRACT)

- Form of Letter of Acceptance
- Form of Agreement
- Form of Performance Security
- Form of Advance Payment Security
- Form of Retention Money Guarantee

FORM OF LETTER OF ACCEPTANCE

(Letter head paper of the Employer)

..... [date]

[LETTER HEADING PAPER OF THE PROCURING ENTITY]

To:

.....
[name and address of the Contractor]

This is to notify you that your bid dated[Insert date] for **Design, Supply, Installation and commissioning of Grid Connected Solar Power Systems (Net metering) and Lightning Protection for Colombo municipal council’s town hall building, town hall new building, mayors residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply, Commissioner’s residence.** for the **Contract price**[name of currency]..... *[amount in figures and words(excluding VAT)]* as corrected in accordance with the Instruction to tenderers/Bidders, and/or modified by a Memorandum of Understanding is hereby accepted.

The adjudicator shall be [name and address of the Adjudicator, if agreed] /shall be appointed by the Institute for Construction Training and Development (ICTAD)

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

The Start Date shall be :..... *(fill the date as per Conditions of Contract).*

The amount of Performance Security is: *(fill the date as per Conditions of Contract).*

The Performance Security shall be submitted on or before *(fill the date as per Conditions of Contract).*

Authorized Signature:

Name and title of Signatory:

Name of Agency:

FORM OF AGREEMENT

THIS CONTRACT AGREEMENT is made

The [day] day of..... [month],..... [year].

BETWEEN

(1)[complete name of Purchaser],
a..... [description of type of legal entity, for example, an agency
of the Ministry of or corporation and having its principal place of
business at[address of Purchaser] (hereinafter called “the
Purchaser”), and

(2)[name of Supplier], a corporation incorporated
under the laws of
.....[country of Supplier] and having its principal
place of business at..... [address of Supplier]
(hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz.,
.....[brief description of Goods
and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services in
the sum of [insert Contract Price in words and figures, expressed in the Contract currency(ies)]
(hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract:
 - (a) This Contract Agreement
 - (b) Contract Data
 - (c) Conditions of Contract
 - (d) Technical Requirements (including Schedule of Requirements and Technical Specifications)
 - (e) The Supplier’s Bid and original Price Schedules
 - (f) The Purchaser’s Notification of Award
 - (g) [Add here any other document(s)]

3. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

4. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

5. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Democratic Socialist Republic of Sri Lanka on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed:[signature]
in the capacity of..... [title or other appropriate designation] in
the presence of[identification of official witness]

For and on behalf of the Supplier

Signed:[signature of authorized representative(s) of the Supplier]
in the capacity of[title or other appropriate designation] in
the presence of[identification of official witness]

FORM OF PERFORMANCE SECURITY

(Unconditional on demand)

.....

[Issuing Agency’s Name, and Address of Issuing Branch or Office]

Beneficiary: **Municipal commissioner
Colombo municipal council,
Colombo 07.**

Date:.....

PERFORMANCE GUARANTEE No......

We have been informed that *[name of Contractor]*
(hereinafter called “the Contractor”) has entered into Contract No. *[reference number of the contract]* dated with you, for execution of **Design, Supply, Installation and commissioning of Grid Connected Solar Power Systems (Net metering) and Lightning Protection** for Colombo municipal council’s town hall building, town hall new building, mayors residence, municipal press, public library, **Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply, Commissioner’s residence.** (Hereinafter called “the Contract”).

Furthermore, we understand that, according to the Conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we *[name of Agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of*[amount in figures]*(.....*[amount in words]*), upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than theday of, 20.... *[insert date, 28 days beyond the Intended Completion Date]* and any demand for payment under it must be received by us at this office on or before that date.

.....

[Signature(s)]

FORM OF ADVANCE PAYMENT SECURITY

..... [Name and address of Agency, and Address of Issuing Branch or Office]

Beneficiary: **Municipal commissioner
Colombo municipal council,
Colombo 07.**

Date:.....

ADVANCE PAYMENT GUARANTEE No......

We have been informed that [Name of Contractor] (Hereinafter called “the Contractor”) has entered into Contract No. [reference number of the contract] dated with you, for execution of Design, Supply, Installation and commissioning of Grid Connected Solar Power Systems (Net metering) and Lightning Protection for **Colombo municipal council’s town hall building, tow hall new building, mayors residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply, Commissioner’s residence.** (Hereinafter called “the Contract”).

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum..... [Amount in figures] (.....) [Amount in words] is to be made against an advance payment guarantee.

At the request of the Contractor, we [Name of issuing agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [Amount in figures] (.....) [amount in words] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation in repayment of the Advance payment under the Contract.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor.

This guarantee shall expire on..... [Insert the date, 28 days beyond the Intended Completion Date]

Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

.....

[Signature(s)]

FORM OF RETENTION MONEY GUARANTEE

..... [Issuing Agency's
Name and Address of Issuing Branch or Office]

Beneficiary: **Municipal commissioner
Colombo municipal council,
Colombo 07.**

Date:.....

RETENTION MONEY GUARANTEE No:.....

We have been informed that [Name of Contractor]
(Hereinafter called “the Contractor”) has entered into Contract No. [reference
number of the contract] datedwith you, for the execution of Design, Supply, Installation
and commissioning of Grid Connected Solar Power Systems (Net metering) and Lightning
Protection for for **Colombo municipal council’s town hall building, tow hall new building, mayors
residence, municipal press, public library, Public health, municipal veterinary department,
Indigenous medicine department, Sports and recreation department, Public assistance department,
Engineers department, Drainage and water supply, Commissioner’s residence.** (Hereinafter called
“the Contract”).

Furthermore, we understand that, according to the Conditions of the Contract, when the works have
being taken over and the first half of the Retention Money has been certified for payment, payment
of the second half of the Retention Money may be made against a Retention Money guarantee.

At the request of the Contractor, we [Name of
agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount
of [Amount in figures](.....
.....) [amount in words] upon
receipt by us of your first demand in writing accompanied by a written statement stating that the
Contractor is in breach of its obligation under the Contract because the Contractor has not attended
to the defects in accordance with the Contract..

This guarantee shall expire, at the latest, [Insert 28 days after the end of the
Defects Liability Period]. Consequently, any demand for payment under this guarantee must be
received by us at this office on or before that date.

.....

[Signature(s)]

SECTION 3
CONDITIONS OF CONTRACT

CONDITIONS OF CONTRACT

Conditions of Contract applicable to this Contract shall be the Conditions of Contract as given in Section 3 of the Standard Bidding Document for Procurement of Works, ICTAD Publication No. ICTAD/SBD/01, Second Edition, January 2007, published by the Construction Industry Development Authority (CIDA) "Savsiripaya", 123, Wijerama Mawatha, Colombo 07.

This publication will not be issued with the Bidding Document and the Bidder is advised to purchase same from ICTAD, if required.

Conditions of Contract shall be read in conjunction with Contract data provided under Section 5 of the Bidding Document.



**COLOMBO MUNICIPAL COUNCIL
CENTRAL PROCUREMENT DEPARTMENT**

Tel.: 2686389 Fax: 2662329

DESIGN SUPPLY INSTALLATION AND COMMISSIONING OF

**GRID CONNECTED SOLAR POWER SYSTEMS
WITH NET METERING AND LIGHTNING PROTECTION**

FOR

COLOMBO MUNICIPAL COUNCIL

AT

**TOWN HALL BUILDING, TOWN HALL NEW BUILDING, MAYORS
RESIDENCE, MUNICIPAL PRESS, PUBLIC LIBRARY, PUBLIC HEALTH,
MUNICIPAL VETERINARY DEPARTMENT, INDIGENOUS MEDICINE
DEPARTMENT, SPORTS AND RECREATION DEPARTMENT, PUBLIC
ASSISTANCE DEPARTMENT, ENGINEERS DEPARTMENT, DRAINAGE
AND WATER SUPPLY, COMMISSIONER'S RESIDENCE**

BIDDING DOCUMENT

VOLUME – 2

INVITATION FOR BIDS

SECTION 4 - FORM OF BID AND QUALIFICATION INFORMATION

SECTION 5 - BIDDING DATA AND CONTRACT DATA

SECTION 6 - SPECIFICATIONS

SECTION 7 - BILL OF QUANTITIES

SECTION 8 - DRAWINGS

SECTION 9 - STANDARD FORMS (BID)

EMPLOYER:

Colombo municipal council,
Colombo 07.

CONSULTANT:

INVITATION FOR BID

INVITATION FOR BIDS (IFB)

COLOMBO MUNICIPAL COUNCIL

DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF GRID CONNECTED SOLAR POWER SYSTEMS AND LIGHTNING PROTECTION FOR COLOMBO MUNICIPAL COUNCIL’S TOWN HALL BULDING, TOWN HALL NEW BUILDING, MAYORS RESIDENCE, MUNICIPAL PRESS, PUBLIC LIBRARY, PUBLIC HEALTH, MUNICIPAL VETERINARY DEPARTMENT, INDIGENIOUS MEDICINE DEPARTMENT, SPORTS AND RECREATION DEPARTMENT, PUBLIC ASSISTANCE DEPARTMENT, ENGINEERS DEPARTMENT, DRAINAGE AND WATER SUPPLY DIVISION AND COMMISSIONER’S RESIDENCE

Contract No.

Dear Sirs,

1. **The municipal commissioner, Colombo municipal council,**.....will receive sealed Bids from contractors specialized in design, supply, installation and commissioning of grid connected solar power system and lightning protection for **Colombo municipal council’s town hall building, town hall new building, mayors residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply division** and Commissioner’s residence. Total estimated cost for the works is..... excluding VAT.
2. Bidding will be conducted through National Competitive Bidding Procedure.
3. Qualifications of Eligible bidders
 - a. A company established in Sri Lanka for last ten (10) years after registration and having a CIDA grading of EM 2 or above.
 - b. Completed at least five (05) nos. of Solar Power System installations during last five (05) years with total capacity of 300 kW or greater in Sri Lanka
 - c. Completed at least one solar power system the value of which shall not be less than Rs. 10 Million during last five (05) years.
4. We now invite bidders to submit sealed Bids for the supply, installation and commissioning of Grid Connected Solar Power System for **Colombo municipal council’s**
5. Bidders may obtain further information from, and inspect and purchase the bidding documents at the office of **Chief Accountant (procurement), central procurement department, Colombo municipal council, town hall, Colombo 07**

6. Bidding documents will be issued on receipt of non-refundable fee of in cash from to..... during office hours on working days by the Chief Accountant (procurement), central procurement department, Colombo municipal council, town hall, Colombo 07 upon receipt of a written request on company letter head.
7. Bidding documents may be inspected free of charge at the office of Chief Accountant(procurement), central procurement department, Colombo municipal council, town hall, Colombo 07
8. Bids shall be valid up to.....days from the closing date of submission.
9. Bids shall be accompanied by a Bid Security of Rs.....and valid until 119 days from the dead line for submission of bids.
10. Sealed Bids shall be delivered in duplicate to the office of Chief Accountant(Procurement), central procurement department, Colombo municipal council, town hall, Colombo 07 before closing time.
11. The deadline for submission of Bids will be on or before and will be opened soon after the closing.
12. Bidders or their authorized representatives are requested to be present at the opening of Bids.
13. Pre- bid meeting will be held on.....
14. The construction period is.....days.
15. For further details, please contact.....on Telephone No.

Municipal commissioner,
Colombo municipal council,
2022.

.....
.....

SECTION 4
FORM OF BID AND QUALIFICATION
INFORMATION

FORM OF BID

Name of Contract: Design, Supply and Installation of grid connected solar power systems (Net Metering) for Colombo municipal council's town hall building, town hall new building, mayor's residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply division and Commissioner's residence.

To: : Municipal commissioner
Colombo municipal council,
Colombo 07.

Gentlemen,

1. Having examined the Standard Bidding Document- Procurement of Works [ICTAD/SBD/01-Second Edition, January 2007], Specifications, Drawings and Bill of Quantities and Addenda for the execution of the above - named Works, we the undersigned, offer to execute and complete such Works and remedy any defect therein in conformity with the aforesaid Conditions of Contract, Specifications, Drawings, Bill of Quantities, and addenda nos.....for the sum of Sri Lankan Rupees (LKR) Or such other sums as may be ascertained in accordance with the said Conditions.
2. We acknowledge that the Contract Data forms part of our Bid.
3. We undertake, if our bid is accepted, to commence the Works as stipulated in the Contract Data, and to complete the whole of the Works comprised in the Contract within the time stated in the Contract Data.
4. We agree to abide by this Bid for a period of 91 Days from the date fixed for receiving or any extended period and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. Unless and until a formal agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
6. We accept/ we do not accept the Adjudicator.
7. We understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this day of 20.... in the capacity ofduly
authorized to sign tenders for and on behalf of
.....
..... (IN BLOCK CAPITALS)

Signature :

Name :

Designation :

Address :

Witness :

QUALIFICATION INFORMATION

(To be completed by the bidder and submitted with the Bid)

Blacklisted Contractors	
Have you been declared as a defaulted contractor by NPA or any other Agency ? (Yes/No)	
If yes provide details	
VAT Registration Number	
Installation Programme	(Attach as annex)
Legal Status	(Attach relevant status copies, as annex)
Authentication of Signatory	(Attach Power of Attorney or Board Resolution)
Work in Hand	(Fill in Data Sheet I)
Capacities of Five nos. Installations during Last Five years whose total is equal to or greater than 300 kW	3((Fill in Data Sheet II-a)
One grid connected solar power installation whose value is Rs.10 Million or greater during last five years.	(Fill in Data Sheet II-b)
Major items of construction equipment proposed	(Not applicable)
Qualification and Experience of key staff - site & Head Office (Permanent, contract basis & consultants)	(Fill in Data Sheet III)
Audited Financial Statement for last 3 years (2015,2014,2013)	(Attach as annex)
Cash flow Forecast Statement	(Attach as annex)
Arbitration / Litigation history	(Attach as annex)
Method Statement	(Attach as annex)

Signature of the Bidder:

Data Sheet I-a

Work in Hand – Solar Power System

Name of project	Name of Client	Contact details of Client	Value of Contract (Rs.)	kW Rating of the PV Plant	Scheduled date of Completion

Data Sheet I-b

Work in Hand – Lightning Protection System

Name of project	Name of Client	Contact details of Client	Value of Contract (Rs.)	Scheduled date of Completion

Data Sheet II-a

Capacities of Five nos. Installations during Last Five years whose total is equal to or greater than 300 kW – Solar Power System

Year	Name of Project	Name of Client and Contact Tel. No.	Value of Work	kW Rating of PV Plant	Date of Completion

Data Sheet II-b

Five nos. Installations during Last Ten years – Lightning Protection System

Year	Name of Project	Name of Client and Contact Tel. No.	Value of Work	Date of Completion

Data Sheet II-c

One grid connected solar power installation whose value is Rs.10 Million or greater during last five years.

Year	Name of Project	Name of Client and Contact Tel. No.	Value of Work	Date of Completion

Data Sheet III

QUALIFICATIONS AND EXPERIENCE OF KEY MANAGEMENT AND TECHNICAL PERSONNEL PROPOSED

(a) Professional Staff

Name	Proposed Position	Qualifications	Post Qualification Experience	Engagement With Company (Permanent / Part Time)	Proposed Period for this Project

(b) Technical Staff

Name	Position	Qualifications	No of years of Post Qualification Experience	Engagement With Company (Permanent / Part Time)	Proposed Period for this Project

SECTION 5
BIDDING DATA AND CONTRACT DATA

BIDDING DATA

Instructions to Bidders

Clause Reference

(1.1)

Name : The Employer's name and Address

.....,

Address:

.....,

.....,

.....,

Colombo 07.

The Works consist of Supply, installation and commissioning of grid connected solar power systems (Net metering) and lightning protection for Colombo municipal councils' town hall building, town hall new building, mayor's residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply division and Commissioner's residence.

(1.2)

Intended Completion Date is.....Days from the Start Date.

(1.3)

The office for collection of bid forms is the Office of Chief Accountant (procurement), Central procurement department, Colombo municipal council, town hall, Colombo 07.

The non-refundable fee is Sri Lanka Rupees

The Bid forms will be issued until hrs on20....

(4.2)

CIDA registration is not required.

(4.3)

The following information shall be provided in Section 4:

- VAT Registration Number
- Installation Programme
- Legal Status (Sole proprietor, Partnership, Company etc.)
- Authentication for signatory (Power of Attorney or Board Resolution)
- Availability of liquid assets/credit facilities
- Total monetary value of grid connected solar power Installations performed for each of the last five years;
- Affidavit for works in hand, nature of work, monetary value and value of remaining works
- Audited financial statements for last three years (2015, 2014, 2013).
- Experience in works of a similar nature and size for each of the works carried out last five years
- Experience in lightning protection system installations of the bidder or experience of subcontractor
- Qualifications and experience of key site management and technical personnel proposed for the Contract (submit CVs)

- The parent company guarantee from the manufacturer
- Technical schedules as requested with the tender indicating make, brand, country of origin and country of manufacture
- Technical literature and drawings for the mounting structure on the roof.
- Supportive manufacturer’s technical literature, brochures, test reports
- Method Statements for installation
- Samples of Aluminium supporting materials of mounting structure.

(4.4) include:

Qualification requirements to qualify for contract award shall

- A company established in Sri Lanka for last ten (10) years after registration and having a CIDA grading of EM 2 or above.
- At least five (05) nos of Solar Power System installations during last five (05) years with total capacity of 300 kW or above in Sri Lanka
- At least one grid connected solar power system installation value of which shall not be less than Rs. 10 Million during last five years.
- Average annual turnover of last 5 years exceeding Rs.10 million.
- Minimum amount of liquid assets shall not be less than Rs. 30 million.

(9.1)

Employer's address for the purpose of clarification is ;

Name of Officer :

.....

Address :

.....Town hall,

Colombo 07.

Phone :

(11.1)

The language of the bidding document shall be English

(13.3)

VAT component shall not be included in the rates. The amount written in the Form of Bid shall be without VAT.

If the bidder is registered for the purpose of VAT, the bidder shall indicate the amount of VAT claimed separately at the end of the Bill of Quantities, in addition to the net value of bid, along with VAT registration number. The amount written on the Form of Bid shall be without VAT.

(13.4) Bidders whose bids are over Rs. 5 Million should submit PCA (3) registration under the public contract act No 03 of 1987 and PCA (4) registration certificate should be submitted when claim the payment

(15.1) The Bid shall be valid up to 91 Days from the dead line for submission of bids

(16.1) Bid shall include a Bid Security using the form included in Section 9.

(16.2) Bid Security shall be :

- for an amount of Rupees
(Rs.....)
- Valid until 119 Days from the dead line for submission of Bids up to
- Issued by a Commercial Bank approved by the Central Bank of Sri Lanka or the Construction Guarantee fund. Bid Security shall be submitted in the format given in Section 9.

(17.0) Pre Bid meeting : Venue :

Date : Time :am

(19.2) a The Employer's address for the purpose of Bid submission is

.....
.....

..., **Town hall,**
Colombo 07.

(19.2)b Contract name : Supply, Installation and commissioning of grid connected solar power systems for **Colombo municipal council's town hall building, town hall new building, mayors residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and Water supply division and Commissioner's residence.**

Contract no. _____

(20.1)

The deadline for submission of bids shall be hrs

(34.0) The amount of Performance Security is 10% of the Initial contract Price. Performance security shall be valid until a date 28 days beyond the date of expiry of defects liability period.

(36.0) The Adjudicator proposed by the Employer is a nominee of Construction Industry Development Authority (CIDA).
Fees and types of reimbursable expenses to be paid to the Adjudicator shall be on a case to case basis and shall be shared by the Contractor and the Employer.

CONTRACT DATA

(1.) The Employer's name and Address
Name:,
Address:,
,
, Town hall,
 Colombo 07.

The Works consist of Supply, installation and commissioning of grid connected solar power systems (net metering) and lightning protection for Colombo municipal council's town hall building, town hall new building, mayors residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply division and Commissioner's residence.

(1.) The Sites are located at: Refer Annex 1 in Section 8

(1.) The Start Date shall be 14 Days from the Letter of Acceptance.

(9.1) Schedule of Key Personnel:
 Minimum persons with qualifications and experience:

<u>(minimum)</u>	<u>Academic Qualifications</u>	<u>Experience</u>	
years	Project Manager	BSc Eng. or Equivalent	5
years	Site Engineers	NDT or equivalent	3

(13.1) The minimum insurance covers shall be:

- (a) • The minimum cover for insurance of the Works and of Plant and Materials is 110% of Initial Contract Price
 - The maximum deductible for insurance of the Works and of Plant and Materials is 5% of Initial Contract Price
- (b) • The minimum cover for loss or damage to Equipment is 5% of Initial Contract Price
 - The maximum deductible for insurance of Equipment is 10% of Initial Contract Price
- (c) • The minimum cover for insurance of other property (other than the Site) is Rs.500,000.00
- (d) The minimum cover for personal injury or death,
 - For third party and employees of the Employer and other persons engaged by the Employer in the Works is Rs.500,000.00 per person per event.

- (13.2) (a) the minimum cover for personal injury or death,
- For the Contractor's workmen is Rs.500, 000.00 per person per event
 - Contractor's employees other than workmen is Rs.500, 000.00 Per person per event.
- (17.1) The Intended Completion Date for the whole of Works shall be 90 Days from the Start Date.
- (21.1) The Site Possession Date shall be 7 Days from Letter of Acceptance.
- (27.1) The Contractor shall submit a programme for the Works within 14 Days of delivery of the Letter of Acceptance.
- (27.3) The period between Programme update is one month.
- (27.4) The amount to be withheld for late submission of a Programme is Sri Lanka Rupees 2% of Initial Contract Price
- (35.1) The Defects Liability Period is 365 Days.
- (39.2) Engineer may order variations up to a total cumulative value of not exceeding 10% of the Contract Price.
- (47.) Delete the entire Sub Clause.
- (48.1) The retention from each payment shall be 10% of the certified work done.
- The limit of retention shall be 5% of the Initial Contract Price.
- (49.1) The liquidated damages shall be Rs. 10,000/- per Day.
- The maximum amount of liquidated damages for the whole of the Works shall be 10% of the Initial Contract Price.
- (52.1) The Performance Security shall be 10% of the Initial Contract Price. Performance security shall be valid until a date 28 days beyond the intended completion date of defect liability period.

- (58.1) One copy of as built drawings shall be submitted for Engineers approval within 14 days after completion of works. Three copies each of as built drawings which are approved by the Engineer together with a soft copy in CD shall be submitted to the Employer within 14 days after receiving of such approval.
- (60.1) The percentage to apply to the value of the work not completed, representing the Employer's additional cost for completing the Works, is 25% of Initial Contract Price.
- (63.7) Deleted

SECTION 6
SPECIFICATIONS

SPECIFICATIONS

The Works under this Contract shall be executed in accordance with the Specifications given in the following document issued by the Institute for Construction Industry Development Authority (CIDA), “Savsiripaya”, Wijerama Mawatha, Colombo 07. The specifications given in the bidding document shall take precedence over the above document wherever relevant.

Publication No.

Description

SCA/8

Specifications for Electrical & Mechanical Works
Second Edition (Revised), August 2000

It is presumed that the eligible bidders are fully acquainted with the above Documents which therefore, will not be issued to bidders with this bidding document.

However, bidders may purchase the ICTAD Publication if necessary, from CIDA, “Savsiripaya”, Wijerama Mawatha, Colombo 07.

SPECIFICATIONS**GRID CONNECTED SOLAR POWER SYSTEM (Net metering)****1. General**

This specification covers the technical specifications for Design, Supply, Installation, Testing and commissioning of Grid connected solar power plants and relevant accessories for Colombo municipal councils' town hall building, town hall new building, mayor's residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply division and commissioner's residence on turnkey basis. Bidders shall quote for the tender accordingly.

- i. Bidder shall provide brand new equipment with all the accessories required for proper installation and commissioning.
- ii. The Contractor shall take all necessary steps to minimize the disturbances to the bank staff and the customers including parked vehicles in the premises during the installation is in progress. Contractor must also take care not to damage exterior and interior walls, ceilings, furniture etc. Repair cost of such damages will be recovered from the Contractor.
- iii. Contractor must take prior permission from the Bank Manager of the branch before starting the works each day and any builders work.

2. Technical requirements**2.1 Solar Photovoltaic (SPV) array**

- 2.1.1 Completion of grid connected solar power systems of capacitykW (town hall building), kW (New town hall building), kW (Mayor's residence), kW (Municipal press) and kW (Public library),kW (Public health),kW(municipal veterinary department),kW(Indigenous medicine department),kW(Sports and recreation department),kW(Public assistance department),kW(Engineers department),.....KW(Drainage and water supply division) and.....kW(Commissioner's residence) . Bidder must consider shading losses as per the relevant Industry Standard & Practice which designing the proposed power plant. The drawings of buildings can be inspected at the Premise department of central procurement, Colombo municipal council, Colombo 7. Photo copies may be obtained from those drawings at bidders cost. **However Bidders are requested to inspect each and every roof of the buildings before bidding with prior appointment from premises division of the bank.**
- 2.1.2 Bidders shall have experience in installation of Grid connected solar power systems of a minimum total of 300kW in Sri Lanka during last five (05) years.
- 2.1.3 Minimum rating of a solar module shall not be less than 260Wp.
- 2.1.4 SPV module shall contain mono/poly crystalline high power silicon solar cells. The solar cells shall have surface anti-reflective coating to help to absorb more light in all weather conditions.

- 2.1.5 Photo electrical conversion efficiency of SPV module shall not be less than 14%
- 2.1.6 Fill factor of the modules shall not be less than 0.70.
- 2.1.7 The rated output of any supplied module shall not vary by more than 5% from the average power rating of all ratings. Test certificate confirming the rating shall be submitted with the offer.
- 2.1.8 Solar modules shall perform satisfactorily under following weather conditions
- i. Relative humidity up to 95%
 - ii. Temperature between 10⁰C and 85⁰C.
 - iii. Shall be able to withstand wind gusts up to 38m/s.
- 2.1.9 Solar PV modules shall be highly reliable, light weight and shall have more than 10 years product warranty (materials and workmanship) and 25 years power output warranty. Certificate confirming the warranty conditions shall be submitted with the offer.
- 2.1.10 Solar modules offered shall be certified as per latest edition of IEC61215-2, IEC 61730-1, IEC61730-2 for safety qualification testing. Shall meet the ISO 9001 : 2008, ISO 14001 : 2004 and 17025 : 2005 international standards. Copies of the certification should be submitted with the offer.
- 2.1.11 Marking : Each module shall carry the following clear and indelible markings:
- i. Name, monogram or symbol of manufacturer
 - ii. Type or model number
 - iii. Serial number
 - iv. Maximum system voltage for which the module is suitable
 - v. Year of manufacture
- 2.1.12 Solar modules shall have the type approval certificates. **Offers without the type approval certificates will be rejected.**
- 2.1.13 Bidder shall submit the duly filled Compliance certificate for the Solar Array and original catalogue of the offered brand / copy certified by supplier.

2.2 Module mounting structure

- 2.2.1 The array structure shall be so designed to occupy minimum space without scarifying the output from SPV panels.
- 2.2.2 The structure shall be designed to allow easy replacement of any module & shall be in line with the site requirement.
- 2.2.3 Array structure shall be fabricated out of anodized aluminium extrusions specially made for solar panel installations or hot dipped galvanized steel channels of thickness 3 mm as appropriate.
- 2.2.4 The support structure design & foundation shall be designed to withstand wind speed up to 38m/s using relevant wind load codes.
- 2.2.5 The module alignment and tilt angle shall be calculated to provide the maximum annual energy output.

- 2.2.6 Generally PV modules can be installed on the existing roofs of buildings without any correction for tilt angle. However if Bidder find corrections are required to correct the tilt angle Bidder shall propose practical and feasible solutions where such roofs are exist. The additional cost shall be indicated in the BOQ and added to the total price.
- 2.2.7 The array structure shall be grounded properly using a suitable earthing arrangement or connect to the lightning protection system of the building. However Contractor shall ensure earth electrode resistance is below 10 ohms.
- 2.2.8 The mounting of solar modules shall be done on Zn-AL roofing sheets/asbestos roofing sheets/concrete rooftop and entire fabrication of elevated structure if required shall be done by the Contractor.
- 2.2.9 The contractor shall submit detailed drawings of the mounting structure for approval of the structural engineer before fabrication.

2.3 Grid tie Inverter

- 2.3.5 Rating of the Inverter shall be same as minimum output as per 2.1.1 or greater.
- 2.3.6 Inverter unit shall convert DC produced by SPV array and adjust the voltage and frequency levels to suit the Grid.
- 2.3.7 Nominal AC voltage shall be Single Phase or 3 Phase, 230V/400V
- 2.3.8 AC grid frequency shall be 50 Hz.
- 2.3.9 Inverter voltage & frequency shall supervise with respect to rise/falling programmable threshold values of frequency & the power. Section of the plant. The plant shall get disconnected/connected from the grid in case of a grid fault after normal grid conditions have resumed. The grid supervision must comply with relevant local regulations.
- 2.3.10 The electrical safety of the array installation is of the utmost importance. Array electrical configuration shall be in such a way that, the MPPT shall operate with maximum efficiency between the low and high temperature of the site.
- 2.3.11 DC voltage ripple content shall not be more than 3%
- 2.3.12 Efficiency of Inverter shall not be less than 97%.
- 2.3.13 Operating temperature range shall be 5 to 60 deg. C.
- 2.3.14 DC-AC conversion efficiency shall be 93% for output ranging from 20% to full load. Idling current at no load shall not exceed 2% of the full load current.
- 2.3.15 Inverter shall be housed in a suitable switch cabinet, with min. IP54 degree of Ingress Protection, Weatherproof, rodents & insect proof and Components and circuit boards mounted inside the enclosures clearly identified with appropriate permanent designations.

2.3.16 The Inverter shall have following protection features

- i. Appropriate self-protective and self-diagnostic feature to protect itself and the PV array from damage in the event of Inverter component failure or from parameters beyond the Inverter's safe operating range due to internal or external causes. The self-protective features shall not allow signals from the Inverter front panel to cause the Inverter to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the Inverter, including commutation failure, shall be cleared by the Inverter protective devices and not by the existing site utility grid service circuit breaker.
- ii. Protection features such as DC reverse-polarity, reverse current protection, AC short circuit protection, Ground fault monitoring, overvoltage etc.
- iii. Islanding protection.
- iv. Facility to reconnect the Inverter automatically to the grid following restoration of grid, subsequent to grid failure condition.
- v. Authentic tracking of the solar arrays maximum power operation (MPPT).
- vi. Automatic fault conditions reset for all parameters like voltage, frequency and /or blackout.
- vii. Parallel operation with Grid & capable of interrupting line-to-line fault currents and line to line ground fault currents.
- viii. Withstand an unbalanced output load to the extent of 30%.

2.3.17 Inverter generated harmonics shall not exceed a total harmonic current distortion of 5%, a single frequency current distortion of 3%, and single frequency current distortion of 1%, when the first through the fifth integer harmonics of 50Hz are considered.

2.3.18 Inverter shall not produce Electromagnetic interface (EMI) which cause malfunctioning of electronic & electrical instruments including communication equipment which are located within the facility in which the Inverter is housed.

2.3.19 Color Display on front panel

- i. Display indicators
 - a. Front panel should have the following output indicators
 - i. Inverter power feeding to the grid.
 - ii. Daily amount of energy fed into the grid
 - iii. Total energy fed into the grid
 - b. Display shall show the overview of the plant such as Input voltage, Output voltage etc.
 - c. Display visible from outside the Inverter enclosure.
 - d. Operational status of the Inverter, alarms, trouble indicators and AC and DC disconnect switch positions shall also be communicated by appropriate messages or indicator lights.

2.3.20 Inverter shall have an Emergency OFF button located at an appropriate position of the unit.

2.3.21 Code & Standards : Inverter shall meet the following,

- i. CE
- ii. VDE0126
- iii. G83/1
- iv. IEC 61727
- v. IEC62116

- 2.3.22 The ratio of the Inverter continuous power rating and the array peak power rating shall be between 80 to 90% or any other value found suitable. This is because better overall annual yield can be obtained by allowing the Inverter to operate for longer periods closer to optimal efficiency.
- 2.3.23 Maximum power point tracker (MPPT) has to be integrated in the Inverter unit to maximize energy drawn from the array. The MPPT shall be microprocessor based to minimize power losses. The MPPT shall have provision (manual setting) for constant voltage operation.
- 2.3.24 Metering :
- i. PV array energy production: Meter to log the actual amount of AC energy generated/consumed by the PV system shall have to be provided.
 - ii. Solar irradiance: An integrating measuring device to be provided with the sensor mounted in the plane of the array. Readout shall be integrated with data logging.
- 2.3.25 Inverter shall be covered under the warranty period of 10 years from the date of commissioning of the system.

3. System monitoring, Remote diagnosis and Data storage

- 3.1 Suitable mechanism shall be provided to monitor the plant performance, to log plant data, to access at any time the current values, previous values for up to a month and the average values.
- 3.2 Bidder shall offer an outdoor wall mounting Visualization Display showing the yield, performance and CO₂ reduction of the PV plant. Location of the display panel shall be in ground floor.
- 3.3 Supply and installation of Digital Energy Meter for the system.
- 3.4 Arrangements shall be made in the equipment and any connections required for remote monitoring of each of the plant from the NSB Head Office. Contractor shall inform the Client in advance for any facilities to be provided by the Client.

4. Cables & Accessories

- 4.1 All the cables supplied shall be conforming to BS 5467 for XLPE insulated cables and BS 6346 as per requirement. Only PVC copper cables shall be used.
- 4.2 The size of the cables between array interconnections, array to junction boxes, junction boxes to Inverter shall be so selected to keep the voltage drop and losses to the minimum.
- 4.3 Cables exposed to outdoor shall be installed in steel conduits or electro galvanized steel trunking. Indoor cables may be installed PVC conduits or PVC trunking. Cables laid underground shall be at a depth of minimum 600mm and protected by concrete cable tiles and warning tape.
 - 4.3.1 The array junction boxes shall be dust, vermin & waterproof made of FRP/ABS plastic.
 - 4.3.2 The array junction box will also have suitable surge protection.
 - 4.3.3 The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables.
 - 4.3.4 Suitable markings shall be provided on the bus bar for easy identification & cable ferrules shall be fitted at the cable termination points for identification
- 4.4 All AC & DC breakers be housed in suitable switch cabinet, with min. IP54 degree of Ingress Protection, Weatherproof, rodents & insect proof and Components inside the enclosures clearly identified with appropriate permanent designations.
- 4.5 Complete cable sizing calculations shall be submitted with the offer.
- 4.6 Schematic diagram (design concept) for the whole grid connected solar power plant including all PV panels shall be submitted with the offer

5. Spare Parts

Essential spares for the system shall be provided free of cost by the supplier and replaced if required during the warranty period. Spares support shall be made available for at least 10 years.

6. Training

- 6.1 Supplier shall offer a training package at the foreign equipment supplier's facility for 2 people on operation and maintenance of the power plant.
- 6.2 Supplier shall bear the cost of,
 - 6.2.1 Round trip air flights charges
 - 6.2.2 Board and lodging in the country of the foreign supplier
 - 6.2.3 All travelling within the country

7. Submission for Approval

The Contractor shall make for approval by the Engineer of the following, but shall not be limited to same.

- ✓ Samples of Materials, Component and Fixtures and Equipment
- ✓ Detail and/or Shop Drawings
- ✓ Layout of solar modules on the roof of the building
- ✓ Technical literature / catalogues for equipment supplied (Highlight the module no.)
- ✓ Schematic diagram of the inverter
- ✓ Schematic & Interconnection Diagrams
- ✓ Certificate of Compliance/Test Reports
- ✓ Operation and Maintenance Manuals complete with system details for inverter, PV module array, working principle, trouble shooting, etc
- ✓ Price schedule for maintenance agreement for ten years after defect liability period.

7.1 Shop Drawings

Shop drawings of solar power systems, electrical circuit and wiring diagram, builders work and any other drawings necessary for fabrication and installation of the system shall be supplied in triplicate to the Engineer to determine the adequacy and suitability of the layouts of the proposed grid connected solar power system.

7.2 Technical Literature of Equipment

Technical literature of all equipment proposed to be used in the system inclusive of dimensional drawings, catalogue, test reports and other relevant information shall be supplied in triplicate for the Engineer to determine the adequacy and suitability of the equipment for the proposed grid connected solar power system.

7.3 Maintenance & Operating Manuals

Maintenance and operating manuals of all equipment supplied shall be furnished in triplicate with detailed diagrams of the equipment, equipment arrangements and instructions of the regular maintenance of the equipment. All manuals should be printed, and ring bound with hard cover.

A schedule which may be in the form of a material list giving all particulars together with ordering references of all replaceable parts for all the equipment which will be supplied shall include in the O&M manual.

Contractor is requested to sign agreement with Central Engineering Consultancy Bureau for a comprehensive agreement after defect liability period.

Tenderer shall submit the terms and charges for service and maintenance contract along with the tender.

7.4 As-Built Drawings

On completion of the installation, the Contractor shall prepare a set of As-built Drawings incorporating all changes made to the original design and drawings, which shall represent an accurate description of the installed systems. These drawings shall be bound with covers in to an album and handed over to the Engineer.

7.5 Handing Over Documents

The final handing over documents to be submitted by the Contractor on completion of the installation shall comprise the following:

- a) Operation and Maintenance Manuals (3 copies)
- b) Commissioning Sheets (3 copies)
- c) Test Reports (3 copies)
- d) As Built Drawings (3 copies)

These documents in required number of copies specified should be supplied to the Engineer within 30 days on issue of taking over certificate. All documents submitted shall be of hard bound cover.

7.6 Site Testing and Commissioning

Tenderer shall submit with the tender, a complete proposal with time schedule for testing and commissioning of the grid connected solar power system. The program shall include a trial operation of all main equipment with any necessary adjustments to ensure that the system is working correctly. The Contractor shall provide all instruments and equipment together with commissioning engineers and adequate assistance for carrying out the commissioning and testing activity which shall be done in accordance with the recommendations of relevant Standards. If any portion of the works fails to pass the tests, the Contractor shall, at his own expense carry out such alterations or replacements as are required to the satisfaction of the Engineer. The Engineer shall be at liberty to call for further commissioning when such alterations have been completed to their satisfactory. The Contractor shall provide commissioning spares at his own expense. Spare parts earmarked for maintenance shall not be used during this period

SPECIFICATIONS

GRID CONNECTED SOLAR POWER SYSTEM (Net metering)

8. General

- iv. This specification covers the technical specifications for Design, Supply, Installation and commissioning of Grid connected solar power plant and relevant accessories for Colombo municipal councils' town hall building, town hall new building, mayor's residence, municipal press, public library, Public health, municipal veterinary department, Indigenous medicine department, Sports and recreation department, Public assistance department, Engineers department, Drainage and water supply division and commissioner's residence turnkey basis... Bidders shall quote for the tender accordingly.
- v. Bidder shall provide brand new equipment with all the accessories required for proper installation and commissioning.
- vi. The Contractor shall take all necessary steps to minimize the disturbances to the bank staff and the customers including parked vehicles in the premises during installation is in progress. Contractor must also take care not to damage exterior and interior walls, ceilings, furniture etc. Repair cost of such damages will be recovered from the Contractor.
- vii. Contractor must take prior permission from the Bank Manager of the branch before starting the works each day and any builders work.

9. Technical requirements

2.2 Solar Photovoltaic (SPV) array

- 2.2.1 Completion of grid connected solar system of capacitykW (town hall building), kW (New town hall building), kW (Mayor's residence), kW (Municipal press) and kW (Public library),kW (Public health),kW(municipal veterinary department),kW(Indigenous medicine department),kW(Sports and recreation department),kW(Public assistance department),kW(Engineers department),.....KW(Drainage and water supply division) and.....kW(Commissioner's residence).

16. Bidder must consider shading losses as per the relevant Industry Standard & Practice which designing the proposed power plant. The drawings of buildings can be inspected at the central procurement department, Colombo municipal council, town hall, Colombo 07. Photo copies may be obtained from those drawings at bidders cost. **However Bidders are requested to inspect each and every roof of the buildings with prior appointment from the Premises Division of the bank.**

- 2.2.2 Minimum rating of a Solar module shall not be less than 260Wp.
- 2.2.3 SPV module shall contain mono/poly crystalline high power silicon solar cells. The solar cells shall have surface anti-reflective coating to absorb more light in all weather conditions.
- 2.2.4 Photo electrical conversion efficiency of SPV module shall not be less than 14%
- 2.2.5 Fill factor of the modules shall not be less than 0.70.

- 2.2.6 The rated output of any supplied module shall not vary by more than 5% from the average power rating of all ratings. Test certificate confirming the rating shall be submitted with the offer.
- 2.2.7 Solar modules shall perform satisfactorily under following weather conditions
- iv. Relative humidity up to 95%
 - v. Temperature between 10⁰C and 85⁰C.
 - vi. Shall be able to withstand wind gusts up to 50km/hr.
- 2.2.8 Solar PV modules shall be highly reliable, light weight and shall have more than 5 years product warranty (materials and workmanship) and 25 years power output warranty. Certificate confirming the warranty conditions shall be submitted with the offer.
- 2.2.9 Solar modules offered shall be certified as per latest edition of IEC61215-2, IEC 61730-1, IEC61730-2 for safety qualification testing. Shall meet the ISO 9001 : 2008, ISO 14001 : 2004 and 17025 : 2005 international standards. Copies of the certification should be submitted with the offer.
- 2.2.10 Marking : Each module shall carry the following clear and indelible markings:
- vi. Name, monogram or symbol of manufacturer
 - vii. Type or model number
 - viii. Serial number
 - ix. Maximum system voltage for which the module is suitable
 - x. Year of manufacture
- 2.2.11 Solar modules shall have the type approval certificates and **offers without the type approval certificates will be rejected.**
- 2.2.12 Bidder shall submit the duly filled Compliance certificate for the Solar Array and original catalogues of the offered brand or copy certified by the manufacturer.

2.3 Module mounting structure

- 2.3.1 The array structure shall be so designed to occupy minimum space without scarifying the output from SPV panels.
- 2.3.2 The structure shall be designed to allow easy replacement of any module & shall be in line with the site requirement.
- 2.3.3 Array structure shall be fabricated out of Aluminium specially made for solar power installations or hot dip galvanized steel channels of thickness 3mm as appropriate.
- 2.3.4 The support structure shall be designed to withstand wind speed up to 40km/h using relevant wind load codes.
- 2.3.5 Then module alignment & tilt angle shall be calculated to provide the maximum annual energy output.
- 2.3.6 Generally PV modules can be installed on the existing roofs of buildings without any correction for tilt angle. However if Bidder find corrections are required to correct the tilt angle Bidder shall propose practical and feasible solutions where such roofs are exist. The additional cost shall be indicated in the BOQ and added to the total price.
- 2.3.7 The array structure shall be grounded properly using a suitable earthing arrangement or connect to the lightning protection system of the building. However Contractor shall ensure earth electrode resistance is below 10 ohms.

- 2.3.8 The mounting of solar modules shall be done on Zn-AL roofing sheets/asbestos roofing sheets. Where roof is a concrete slab entire fabrication of elevated structure shall be done by the Contractor.
- 2.3.9 The Contractor shall submit detail drawings of the mounting structure with total weight of PV panels for approval of structural Engineer before fabrication.

2.4 Grid tie Inverter

- 2.4.1 Rating of the Inverter shall be same as minimum output as per 2.1.1
- 2.4.2 Inverter unit shall convert DC produced by SPV array and adjust the voltage & frequency levels to suit the Grid.
- 2.4.3 Nominal AC voltage shall be 3 Phase, 230V/400V
- 2.4.4 AC grid frequency shall be 50 Hz.
- 2.4.5 Inverter voltage & frequency shall supervise with respect to rise/fall in programmable threshold values of frequency & the power section of the plant. The plant shall get disconnected / connected from the grid in case of a grid fault/after normal grid conditions have resumed. The grid supervision must comply with relevant local regulations.
- 2.4.6 Inverter shall be based on transformerless circuit topology and components suitable for meeting the specifications.
- 2.4.7 The electrical safety of the array installation is of the utmost importance. Array electrical configuration shall be in such a way that, the MPPT shall operate with maximum efficiency, between the low and high temperature of the site.
- 2.4.8 DC voltage ripple content shall not be more than 3%
- 2.4.9 Efficiency of Inverter shall not be less than 97%.
- 2.4.10 Operating temperature range shall be 5 to 60 deg. C.
- 2.4.11 DC-AC conversion efficiency shall be 93% for output ranging from 20% to full load. Idling current at no load shall not exceed 2% of the full load current.
- 2.4.12 Inverter shall be housed in suitable switch cabinet, with min. IP 54 degree of Ingress Protection, Weatherproof, rodents & insect proof and Components and circuit boards mounted inside the enclosures clearly identified with appropriate permanent designations.

2.4.13 The Inverter shall have following protection features

- ix. Appropriate self protective and self diagnostic feature to protect itself and the PV array from damage in the event of Inverter component failure or from parameters beyond the Inverter's safe operating range due to internal or external causes. The self-protective features shall not allow signals from the Inverter front panel to cause the Inverter to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the Inverter, including commutation failure, shall be cleared by the Inverter protective devices and not by the existing site utility grid service circuit breaker.
- x. Protection features such as DC reverse-polarity, reverse current protection, AC short circuit protection, Ground fault monitoring, overvoltage etc.
- xi. Islanding protection.
- xii. Facility to reconnect the Inverter automatically to the grid following restoration of grid, subsequent to grid failure condition.
- xiii. Authentic tracking of the solar arrays maximum power operation (MPPT)
- xiv. Automatic fault conditions reset for all parameters like voltage, frequency and /or black out.
- xv. Parallel operation with Grid & capable of interrupting line-to-line fault currents and line to ground fault currents.
- xvi. Withstand an unbalanced output load to the extent of 30%.

2.4.14 Inverter generated harmonics shall not exceed a total harmonic current distortion of 5%, a single frequency current distortion of 3% , and single frequency current distortion of 1% , when the first through the fifth integer harmonics of 50Hz are considered.

2.4.15 Inverter shall not produce Electromagnetic interface (EMI) which cause malfunctioning of electronic & electrical instruments including communication equipment which are located within the facility in which the Inverter is housed.

2.4.16 Display on front panel

- ii. Display indicators
 - e. Front panel should have the following output indicators
 - i. Inverter power feeding to the grid.
 - ii. Daily amount of energy fed into the grid
 - iii. Total energy fed into the grid
 - f. Display shall show the overview of the plant such as Input voltage, Output voltage etc.
 - g. Display visible from outside the Inverter enclosure.
 - h. Operational status of the Inverter, alarms, trouble indicators and AC and DC disconnect switch positions shall also be communicated by appropriate messages or indicator lights

2.4.17 Inverter shall have an Emergency OFF button located at an appropriate position of the unit.

2.4.18 Code & Standards : Inverter shall meet the following,

- vi. CE
- vii. VDE0126-1
- viii. G83/1-1
- ix. IEC 61727
- x. IEC62116

- 2.4.19 The ratio of the Inverter continuous power rating and the array peak power rating shall be between 80 to 90% or any other value found suitable. This is because better overall annual yield can be obtained by allowing the Inverter to operate for longer periods closer to optimal efficiency.
- 2.4.20 Maximum power point tracker (MPPT) has to be integrated in the Inverter unit to maximize energy drawn from the array. The MPPT shall be micro processor based to minimize power losses. The MPPT shall have provision (manual setting) for constant voltage operation.
- 2.4.21 Metering :
- iii. PV array energy production : Meter to log the actual amount of AC energy generated/consumed by the PV system shall have to be provided.
 - iv. Solar irradiance : An integrating measuring device to be provided with the sensor mounted in the plane of the array. Readout shall be integrated with data logging.
- 2.4.22 Inverter shall be covered under the warranty period of 5 years from the date of commissioning of the system.

10. System monitoring, Remote diagnosis and Data storage

- 3.5 Suitable mechanism shall be provided to monitoring the plant performance, to log plant data, to access at any time the current values, previous values for up to a month and the average values.
- 3.6 Bidder shall offer an outdoor wall mounting Visualization Display showing the yield, performance and CO₂ reduction of the PV plant.

11. Cables & Accessories

- 4.7 All the cables which shall be supplied shall be conforming to BS 5467 for XLPE insulated cables and BS 6346 as per requirement. Only PVC copper cables shall be used.
- 4.8 The size of the cables between array interconnections, array to junction boxes, junction boxes to Inverter etc shall be so selected to keep the voltage drop and losses to the minimum.
- 4.9 Junction Boxes
- 4.9.1 The array junction boxes shall be dust, vermin & waterproof made of FRP/ABS plastic.
- 4.9.2 The array junction box will also have suitable surge protection.
- 4.9.3 The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables.
- 4.9.4 Suitable markings shall be provided on the bus bar for easy identification & cable ferrules shall be fitted at the cable termination points for identification
- 4.10 All AC & DC breakers be housed in suitable switch cabinet, with min. IP 54 degree of Ingress Protection, Weatherproof, rodents & insect proof and Components inside the enclosures clearly identified with appropriate permanent designations.

12. Spare Parts

Essential spares for the system shall be provided free of cost by the supplier and replaced if required during the warranty period. Spares support shall be made available for at least 10 years.

13. Training

Contractor shall provide training for the employer's staff at each branch on operation and maintenance of the plant.

14. Submissions

The bidders shall submit the following documents and details in quantities as indicated:

- Design concept in schematic form including net metering arrangement
- Layout of solar modules on the roof of the building
- Technical literature / catalogues for equipment supplied (Highlight the module no.)
- Schematic diagram of the inverter
- Commissioning report format

Contractor shall submit the following documents details in quantities as indicated at the installation:

- Commissioning report
- Two sets of installation manual /user manual complete with system details for inverter, PV module array, working principle, trouble shooting, etc.

SECTION 7
BILL OF QUANTITIES AND TECHNICAL
SCHEDULES

BILL OF QUANTITIESGENERAL NOTES

- 1 **Bidders shall refer the Conditions of Contract, ICTAD Specification SCA/8:2000, and relevant British Standard Code of Practice in addition to the descriptions in the BOQ and drawings prior to pricing of this BOQ.** List of tender drawings is given in **Section 8**. Aforesaid documents shall be considered complementary and mutually explanatory. Bidder's price for each item shall include for the completion of the entire system to working order as described in these bidding documents, including testing and commissioning and maintaining.
- 2 The cost of complying with all conditions, obligations and liabilities described in the Conditions of Contract, Specifications and the Bill of Quantities including all overhead charges and profit in carrying out the Works shall be deemed to be spread over and included in the prices of sums stated by the Bidder in the Bill of Quantities unless separately measured.
3. Bidder's price for each item of work shall not only include for cost of plant and equipment, but also other material, and labour for installations required for total completion of the said items of work.
- 4 If the specifications, capacities and sizes given for any equipment have to be increased to suit any other equipment offered by the bidder in this BOQ (or product required to satisfy the design conditions), the bidder shall be deemed to have included the cost of such changed equipment in his price.
5. Prior to the pricing and selection of equipment, bidder shall **inspect the site and existing arrangement of the buildings and the roofs of each branch with prior appointment from the premises division of the bank.**
- 6 When selecting the solar panels and associated equipment bidder shall consider the possibility of installing the equipment in the available space as given in the drawings.
- 7 Bidders shall fill technical data pertaining to equipment offered in Schedule I given in **Section 7** and provide supporting catalogues pertaining to same. **Failure to fill technical schedules may be considered as grounds for rejection of the Bid.**
- 8 All materials and equipment supplied shall be brand new, unused and without any defects, and shall be approved by the Engineer.
- 9 Prices and rates quoted for equipment and other materials to be imported shall include for custom duty, taxes, transport charges, handling and clearing charges, shipping or air lifting charges, bank charges etc.
- 10 Prices and rates quoted for plant and equipment shall include for all necessary items for connections, and for provision of such equipment and construction materials including scaffolding, ladders etc.

- 11 Bidders shall take into consideration that rates and prices quoted will be deemed to cover the entire work to be carried out under the scope of work whether such items have been specifically mentioned in the BOQ or not.
- 12 Bidder's price for each item of work shall include for cost for scaffolding and builders work such as making plinths, making and closing up holes, openings & block outs, drilling, boring, anchoring, chasing covering up etc., including restoring all finishes and the like to the entire satisfaction of the Engineer.
- 13 **Unpriced Items :** Cost relating to items which are not priced will be deemed to have been included in the Total Amount of the Bill of Quantities.
- 14 **Unit Rates :** shall be used for valuation of variations in accordance with the provisions of the Conditions of Contract.
- 15 **Unit Rates for Extra Works :** when the Bill of Quantities does not include a measured rate for any extra work instructed to be done, or for deductions to be made, the rate to be paid shall be determined in accordance with the provisions of the Conditions of Contract.
- 16 **Bid Price :** The Bidder must satisfy himself that the Bid Amount arrived at by adding of the measured items and Provisional Sums, accurately represents the full and final cost of the works. No claims for misguidance or misinterpretation will be considered under any circumstance.
- 17 **Method of Measurements:** This Bill of Quantities has been prepared generally in accordance with the principals of the Standards Method of Measurements for Building Works in Sri Lanka (SLS: 573:1999). Bidders are to note that the measurements are taken absolute units unless otherwise stated and they must, therefore allow in their prices for all straight cutting and waste etc., throughout even though not specifically mentioned.
- 18 Method and certification of payment to be made to the contractor shall be as follows.

Technical Schedule I

No	Description	Complied (C) / Not complied (N)	Reference Page No. Catalogue/ Drg. No
1	Scope of Work		
1.1	This specification covers the technical specifications for Design, Supply, Installation, Testing and commissioning of Grid connected Solar power plant and relevant accessories at the Colombo municipal council . Bidders shall quote for the tender accordingly.		
1.2	Bidder shall provide brand new equipment with all the accessories required for proper installation and commissioning.		
1.3	Solar installation System / equipment complete to working order with all other connections as per the Drawings and Technical Specifications and CEB Regulations and to the entire satisfaction of the Engineer.		
2	Technical requirements		
2.1	Solar photovoltaic (SPV) array		
2.1.1	Brand: Model: Country of Origin Country of Manufacture:		
2.1.2	The minimum power output of solar arrays shall not be less than values given in Annex 2 for each of the buildings.		

No	Description	Complied (C) / Not complied (N)	Reference Page No. Catalogue/ Drg. No
2.1.3	Bidder must consider shading losses as per the relevant Industry Standard & Practice which designing the proposed power plant. Space available for the solar array installation is shown in the drawings attached.		
2.1.4	Minimum rating of a Solar panel should be more than 400 Wp and should not exceed 550Wp		
2.1.5	The solar cells shall have surface anti-reflective coating to heal to absorb more light in all weather conditions.		
2.1.6	Photo electrical conversion efficiency of SPV module shall not be less than 14%		
2.1.7	Fill factor of the modules shall not be less than 0.70		
2.1.8	The rated output of any supplied module shall not vary by more than 5% from the average power rating of all ratings. Test certificate confirming the rating shall be submitted with the offer.		
2.1.9	Solar modules shall perform satisfactorily under following weather conditions		
i.	Relative humidity up to 95%		
ii.	Temperature between 10 ⁰ C and 85 ⁰ C.		
iii.	Shall be able to withstand wind gusts up to 38 m/s.		
2.1.10	Solar PV modules shall be highly reliable and shall have more than 10 years product warranty (materials and workmanship) and 25 years power output warranty. Certificate confirming the warranty conditions shall be submitted with the offer.		
2.1.11	Solar modules offered shall be certified as per latest edition of IEC61215-2, IEC 61730-1 for safety qualification testing. Shall meet the ISO 9001: 2008, ISO 14001: 2004 and 17025: 2005 international standards. Copies of the certification should be submitted with the offer.		

No	Description	Complied (C) / Not complied (N)	Reference Page No. Catalogue/ Drg. No
2.1.12	Marking : Each module shall carry the following clear and indelible markings: xi. Name, monogram or symbol of manufacture xii. Type or model number xiii. Serial number xiv. Maximum system voltage for which the module is suitable xv. Year of manufacture		
2.1.13	Solar modules shall have the type approval certificates and offers without the type approval certificates will be rejected.		
2.1.14	Bidder shall submit the duly filled Compliance certificate for the Solar Array in Annex – 1		
2.2	Module mounting structure		
2.2.1	The array structure shall be so designed to occupy minimum space without scarifying the output from SPV panels.		
2.2.2	The structure shall be designed to allow easy replacement of any module & shall be in line with the site requirement		
2.2.3	Array structure shall be made of hot dipped galvanized or anodized aluminum after fabrication		
2.2.4	The support structure design & foundation shall be designed to withstand wind speed up to 38 m/s using relevant wind load codes.		
2.2.5	Then module alignment & tilt angle shall be calculated to provide the maximum annual energy output.		
2.2.6	The array structure shall be grounded properly using a suitable earthing kit.		
2.2.7	The mounting of solar panel shall be done on roofs covered with Zn-AL roofing sheets. Mounting structure shall be done by the bidder.		
2.3	Grid tie Inverter		

No	Description	Complied (C) / Not complied (N)	Reference Page No. Catalogue/ Drg. No
2.3.1	Brand: Model: Country of Origin: Country of Manufacture:		
2.3.2	Rating of the Inverter shall be decided by the bidder based on total generating capacity of the solar array also based on consumption of energy in building.		
2.3.3	Inverter unit shall convert DC produced by SPV array and adjust the voltage & frequency levels to suit the Grid.		
2.3.4	Nominal AC voltage shall be Single Phase or 3 Phase, 230V/400V		
2.3.5	Inverter voltage & frequency shall supervise with respect to rise/fall in programmable threshold values of frequency & the power section of the plant. The plant shall get disconnected / connected from the grid in case of a grid fault/after normal grid conditions have resumed. The grid supervision must comply with relevant local regulations.		
2.3.6	The electrical safety of the array installation is of the utmost importance. Array electrical configuration shall be in such a way that, the MPPT shall operate with maximum efficiency, between the low and high temperature of the site.		
2.3.7	DC voltage ripple content shall not be more than 3%		
2.3.8	Efficiency of Inverter shall not be less than 97%.		
2.3.9	Operating temperature range shall be 5 to 60 deg. C		
2.3.10	DC-AC conversion efficiency shall be 93% for output ranging from 20% to full load. Idling current at no load shall not exceed 2% of the full load current.		
2.3.11	Inverter shall be housed in suitable switch cabinet, with min. IP 65 degree of Ingress Protection, Weatherproof, rodents & insect proof and Components and circuit boards mounted inside the enclosures clearly identified with appropriate permanent designations.		

No	Description	Complied (C) / Not complied (N)	Reference Page No. Catalogue/ Drg. No
2.3.12	<p>The Inverter shall have following protection features</p> <p>i. Appropriate self protective and self diagnostic feature to protect itself and the PV array from damage in the event of Inverter component failure or from parameters beyond the Inverter's safe operating range due to internal or external causes. The self-protective features shall not allow signals from the Inverter front panel to cause the Inverter to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the Inverter, including commutation failure, shall be cleared by the Inverter protective devices and not by the existing site utility grid service circuit breaker.</p>		
	<p>ii. Protection features such as DC reverse polarity, reverse current protection, AC short circuit protection, Ground fault monitoring, overvoltage etc.</p>		
	<p>iii. Islanding protection.</p>		
	<p>iv. Facility to reconnect the Inverter automatically to the grid following restoration of grid, subsequent to grid failure condition.</p>		
	<p>v. Authentic tracking of the solar arrays maximum power operation (MPPT)</p>		
	<p>vi. Automatic fault conditions reset for all parameters like voltage, frequency and /or black out.</p>		
	<p>vii. Parallel operation with Grid & capable of interrupting line-to-line fault currents and line to ground fault currents.</p>		
2.3.13	<p>Inverter generated harmonics shall not exceed a total harmonic current distortion of 5%, a single frequency current distortion of 3% , and single frequency current distortion of 1% , when the first through the fifth integer harmonics of 50Hz are considered.</p>		

No	Description	Complied (C) / Not complied (N)	Reference Page No. Catalogue/ Drg. No
2.3.14	Inverter shall not produce Electromagnetic interface (EMI) which cause malfunctioning of electronic & electrical instruments including communication equipment which are located within the facility in which the Inverter is housed.		
2.3.15	<p>Display on front panel</p> <ul style="list-style-type: none"> i. Front panel should have the following output indicators <ul style="list-style-type: none"> i. Inverter power feeding to the grid. ii. Daily amount of energy fed into the grid iii. Total energy fed into the grid j. Display shall show the overview of the plant such as Input voltage, Output voltage etc. k. Display visible from outside the Inverter enclosure. l. Operational status of the Inverter, alarms, trouble indicators and AC and DC disconnect switch positions shall also be communicated by appropriate messages or indicator lights 		
2.3.16	Inverter shall have an Emergency OFF button located at an appropriate position of the unit.		
2.3.17	Inverter 10 years full system should be covered under warranty period of 5 years from the date of commissioning of the system		
3.	Cables & Accessories		
3.1	All the cables which shall be supplied shall be conforming relevant BS 5467 for XLPE insulated cables and BS 6346 standards as per requirement. Only PVC copper cables shall be used.		
4.	Spare Parts		
4.1	Essential spares for the system shall be provided free of cost by the supplier and replaced if required during the warranty period. Spares support shall be made available for at least 10 years.		

No	Description	Complied (C) / Not complied (N)	Reference Page No. Catalogue/ Drg. No
5.	<p>Documentation</p> <p>Two sets of installation manual / user manual shall be supplied along with the power plant. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals.</p>		

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Name & Signature of the Bidder
Official Frank

Date

Schedule II**Recommended spares, Test Equipment and Special Tools**

The Bidder shall provide an item wise breakdown of prices in the list below of recommended spares (for five years), test equipment and tools.

No	Description	Qty	Unit Price Rs.	Amount Rs.

Technical Schedule III

SERVICE AND MAINTENANCE AFTER FREE MAINTENANCE PERIOD

Annual fee for providing **maintenance service for solar power system**

The work shall include the sending of Contractor’s personnel once every three months during normal working hours of a normal working day to inspect, clean, and replacement of spares where necessary, adjust the machinery and equipment and attending to emergency call back service immediately the owner notifies the contractor.

The amount quoted for the servicing and maintenance shall include the cost of supply of all replacement spares except PV panels and Inverters.

Total per annum without VAT

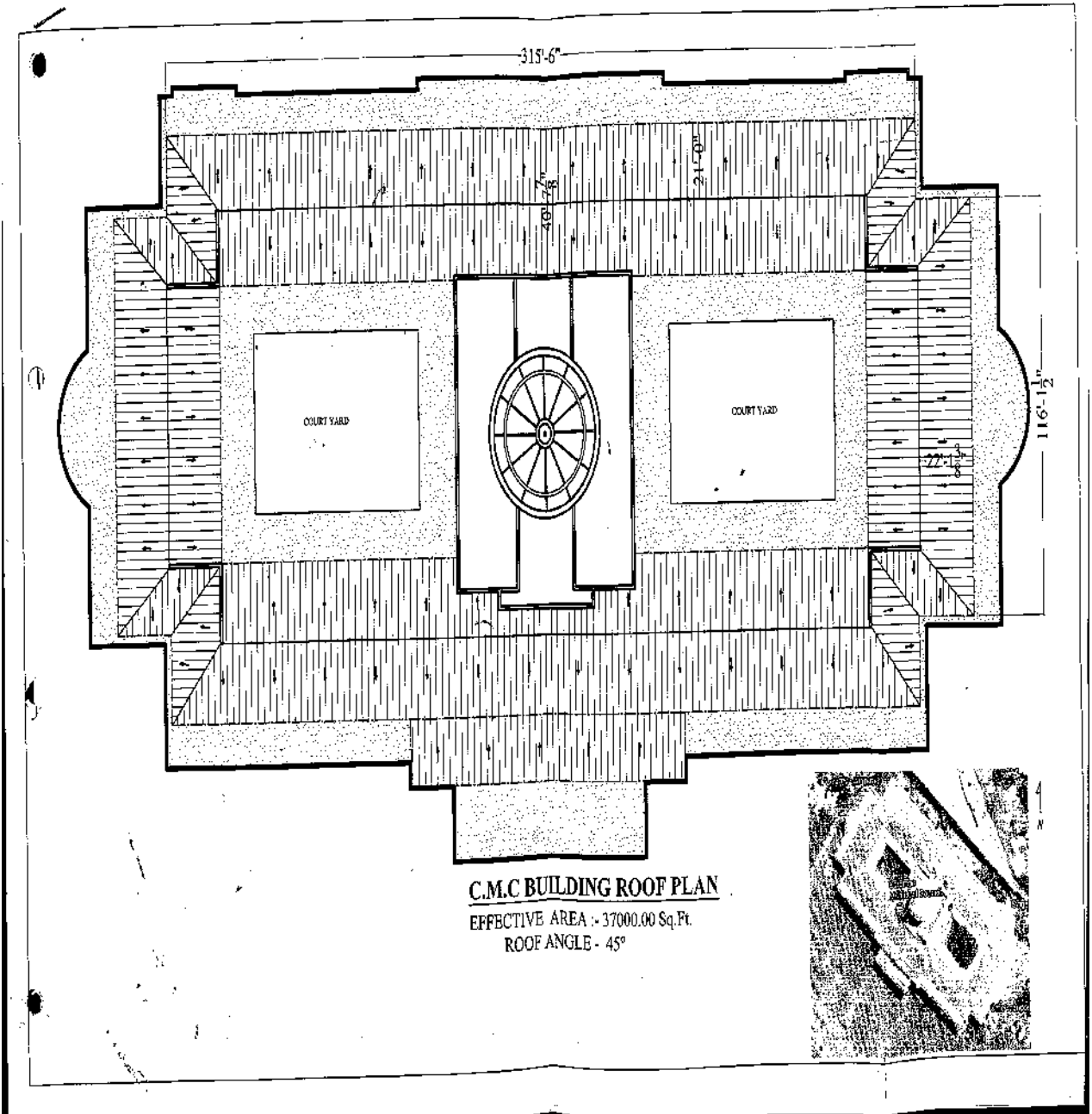
(After free maintenance period)	1 st year	Rs.
	2 nd year	Rs.
	3 rd year	Rs.
	4 th year	Rs.
	5 th year	Rs.
	6 th year	Rs.
	7 th year	Rs.
	8 th year	Rs.
	9 th year	Rs.
	10 th year	Rs.

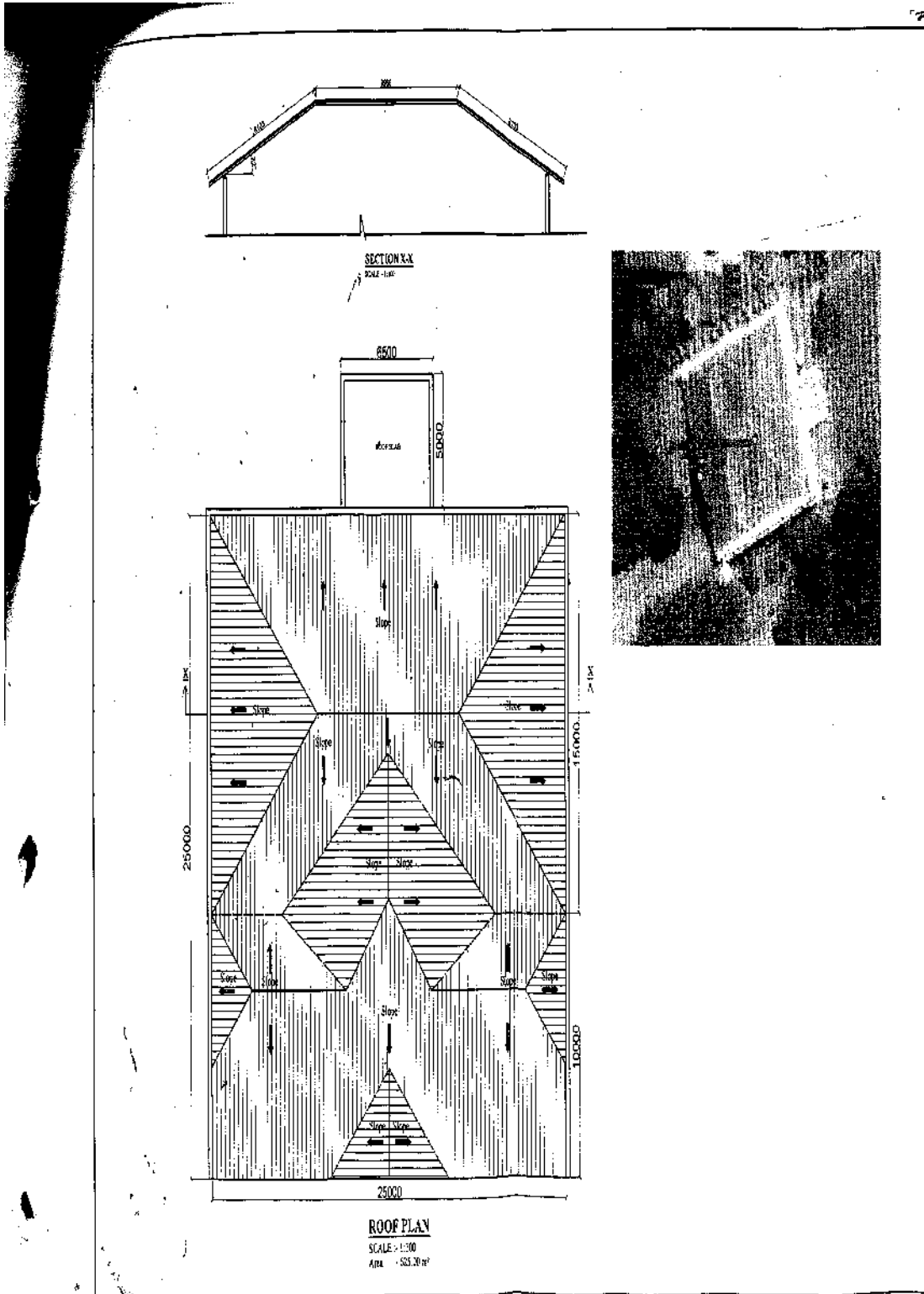
The tenderer shall supply a sample of his proposed service and maintenance contract document with the Bid.

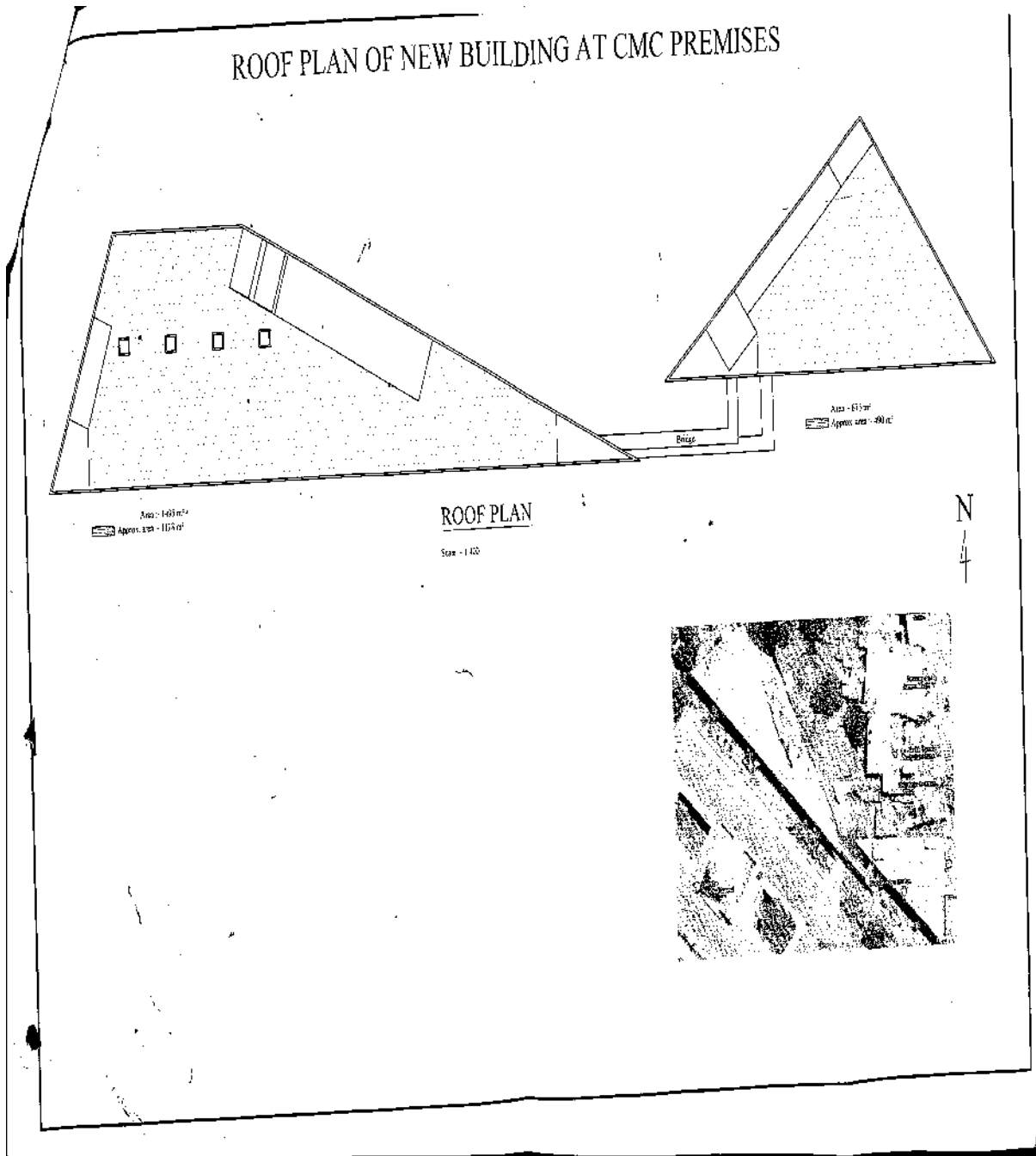
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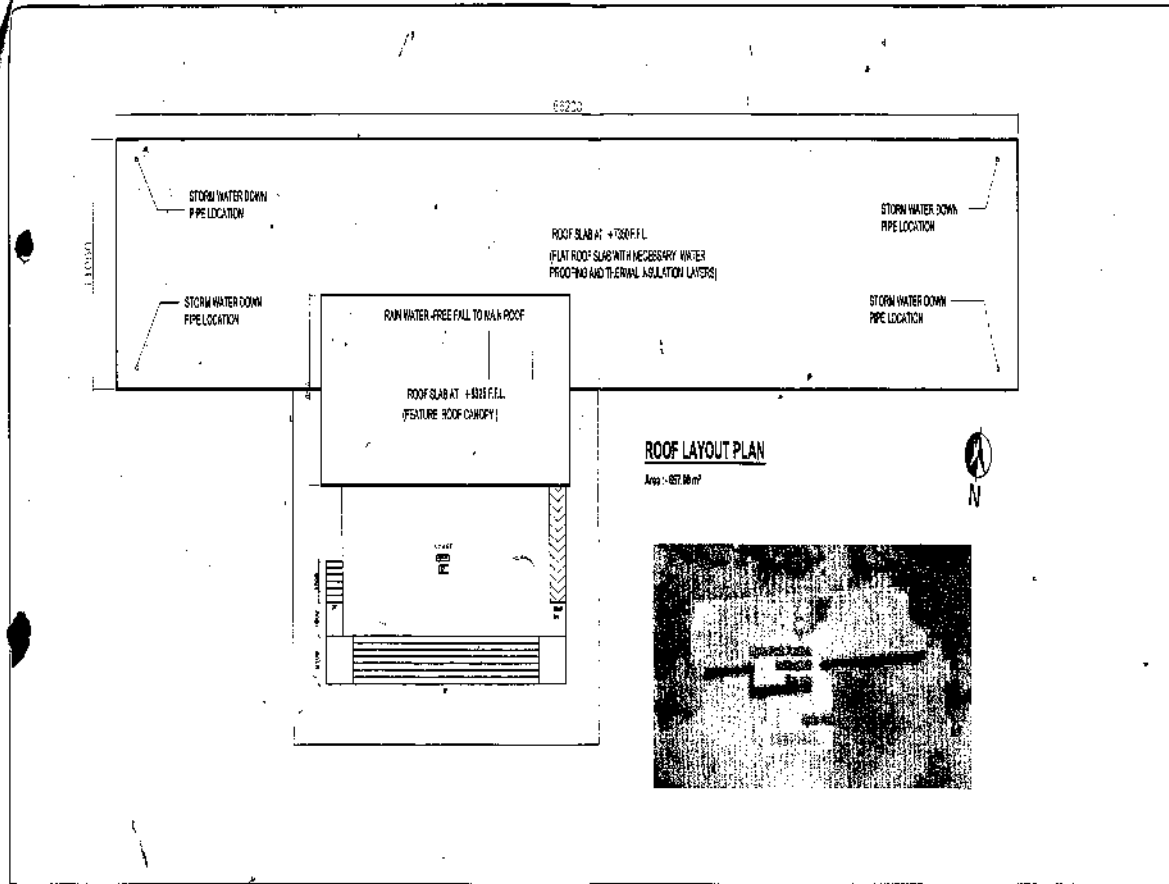
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SECTION 8
DRAWINGS



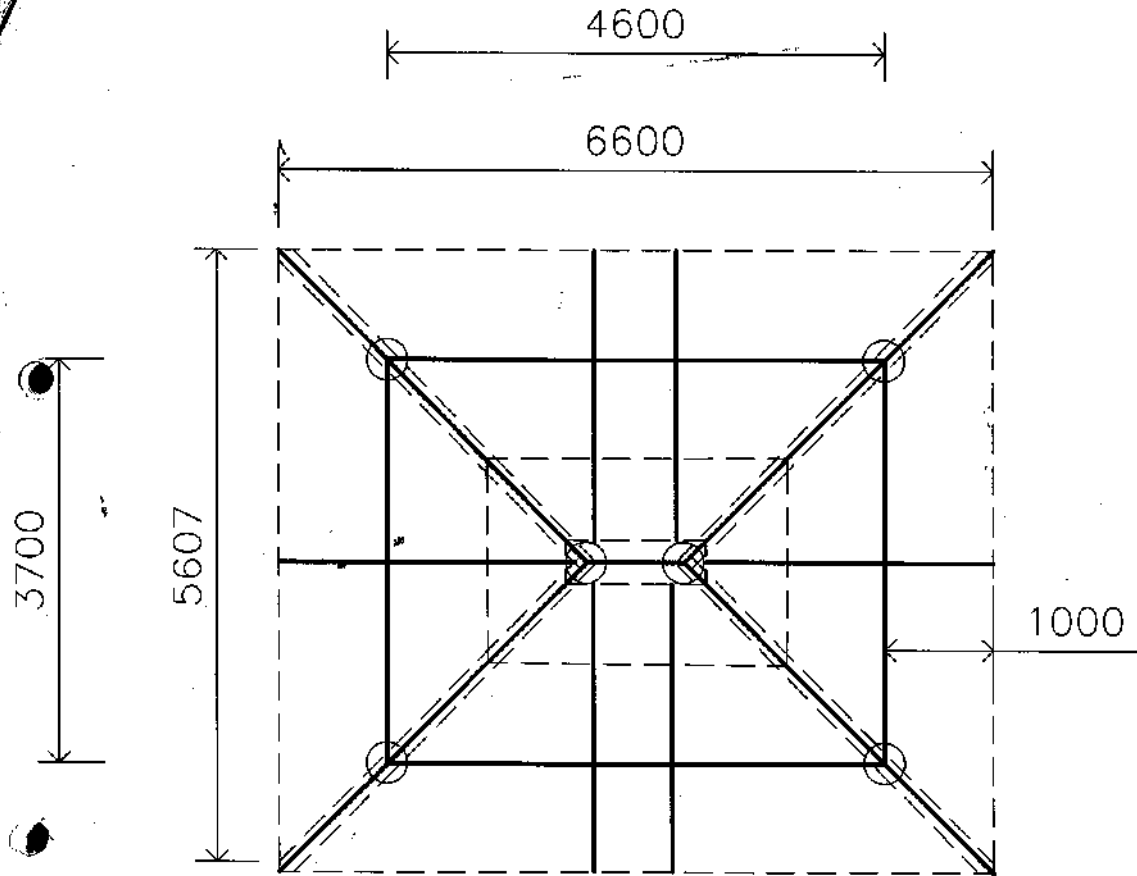






(69)

LIBRARY BUILDING ROOF



----- 25 x 25 x 2mm Box Bar

————— 40 x 40 x 2mm Box Bar

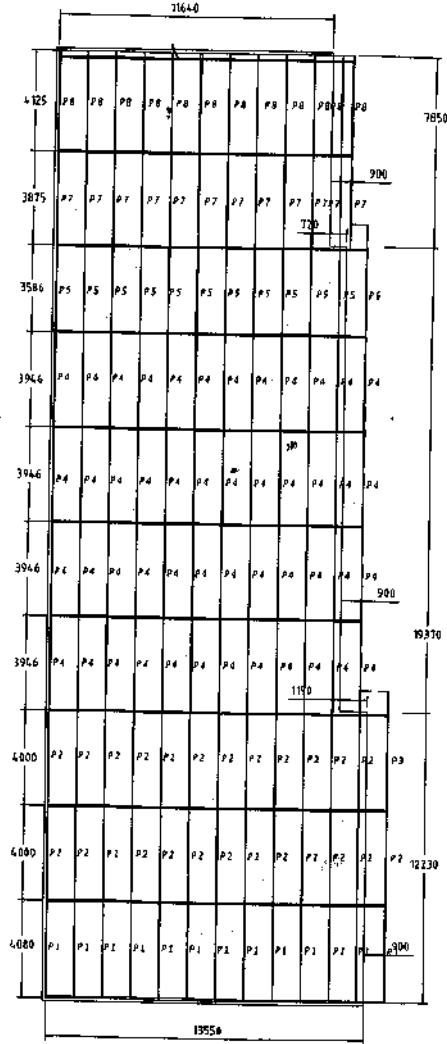
○ Supporting points

එකම උස - 37006200 mm

STUDY HALL BUILDING ROOF

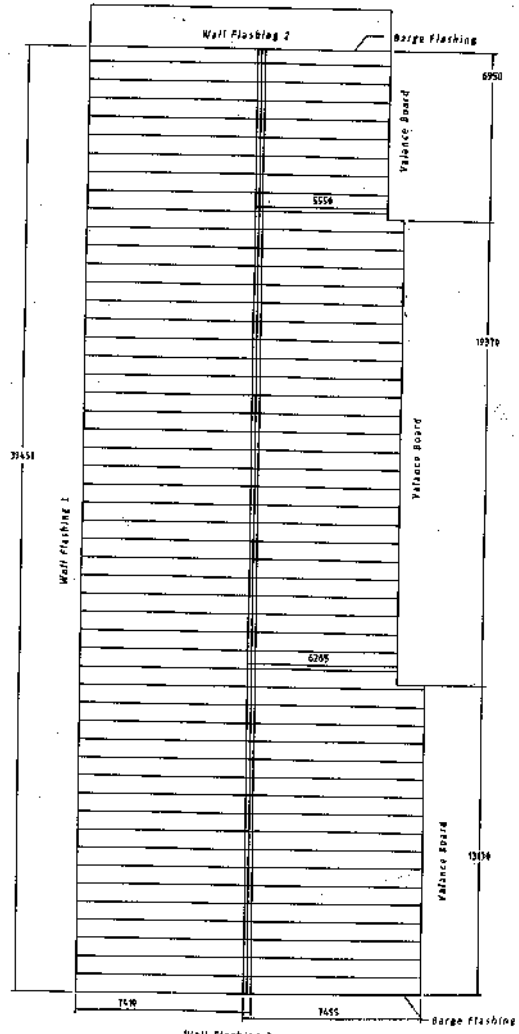
(10)

- P1 - 4070mm - 13 Nos
- P2 - 3990mm - 25 Nos
- P3 - 5050mm - 01 Nos
- P4 - 3936mm - 48 Nos
- P5 - 3576mm - 11 Nos
- P6 - 4636mm - 01 Nos
- P7 - 3865mm - 12 Nos
- P8 - 4120mm - 12 Nos



PURLIN LAYOUT

මහල දිග: 262463500 mm



ROOF LAYOUT

මහල දිග 550134200 mm

ශ්‍රී. ජී. ජේ. කලකාරී,
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ජනවාර්ගික සේවා දෙපාර්තමේන්තුව,
මහලය.

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සම්බන්ධව.

අංක: 44. මේල්ලුමාන පොදුපොළ, දොරොත්ත පිහිටි. ජන. සේ. දෙ.
මහජන තාක්ෂණාගාරයේ මහල ප්‍රදාන දිග, පළල දිග වශයෙන්
ප්‍රාග්ධන දීමා සේවාව.

A. ප්‍රදාන හොඳකැප්පුම්

i. ඉදිරිපස හොඳකැප්පුම

දිග - 78'
පළල - 47'

3256

ii. මැද පසේ හොඳකැප්පුම (කොටස් 2 කණ්ඩායම්)

දිග - 40' + 48'
පළල - 37' + 37'

3256

iii. පසේ පසු කොටසේ හොඳකැප්පුම

දිග - 30'
පළල - 26'

780

iv. නව හොඳකැප්පුම ඉදිරිපස පිහිටි හොඳකැප්පුම

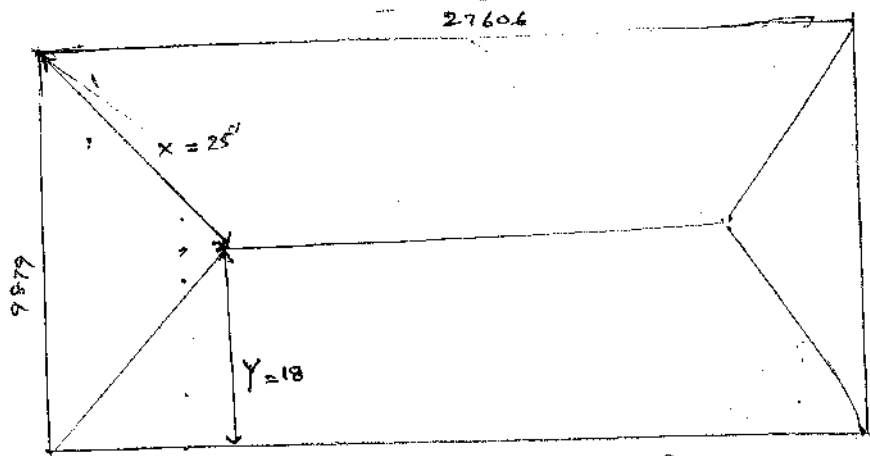
දිග - 66'
පළල - 28'

1848

8. නව හොඩිකැණල්ල.

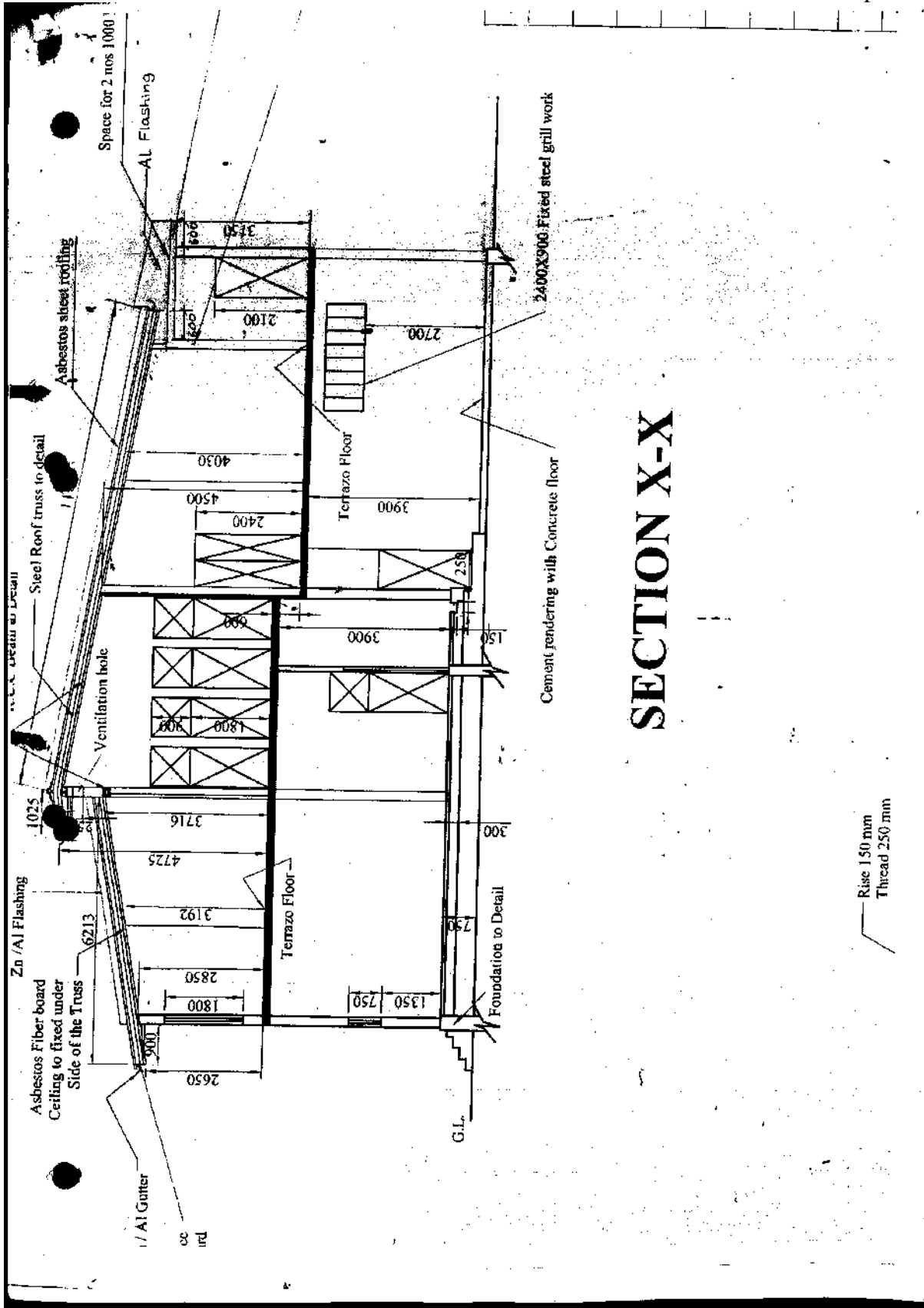
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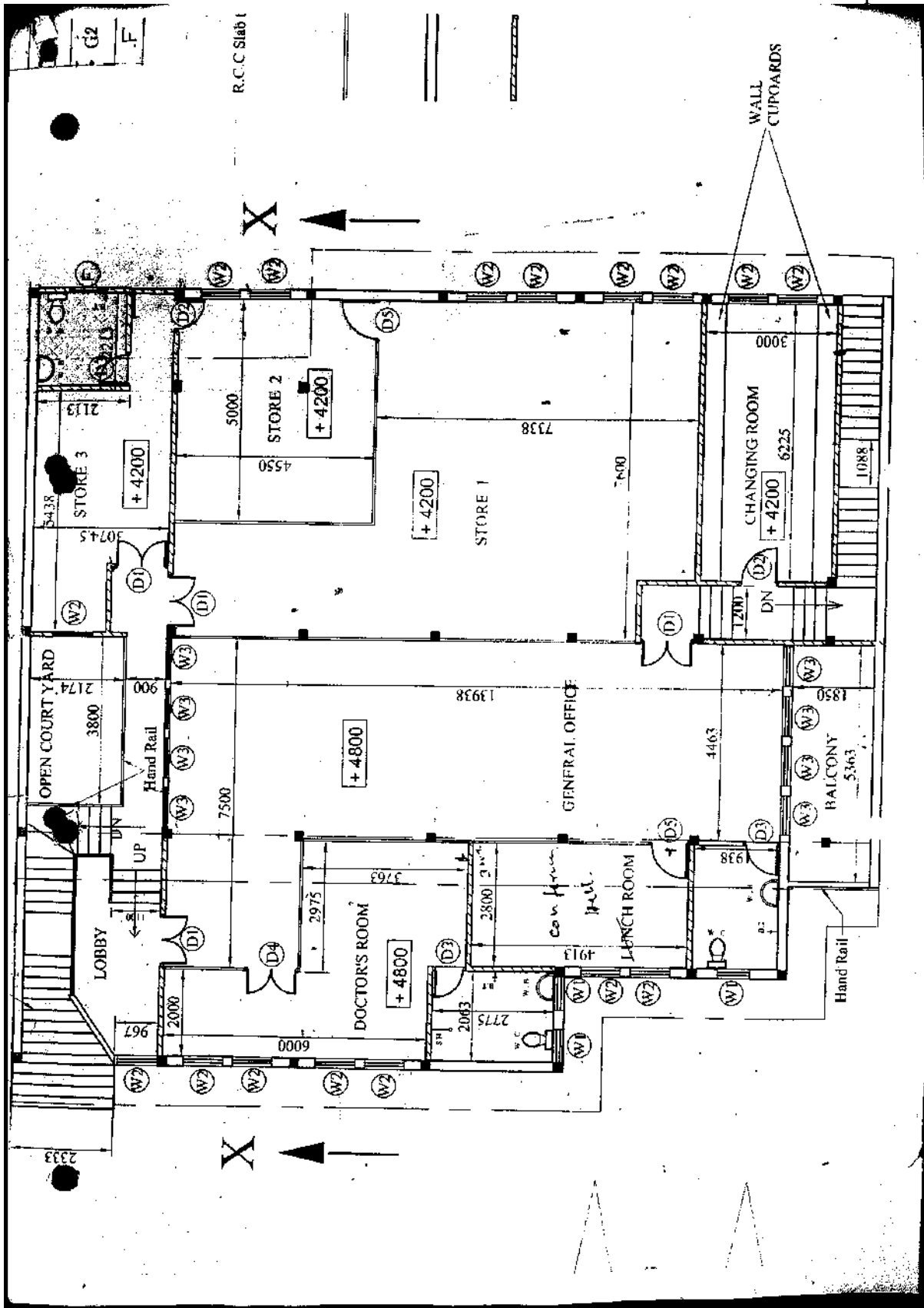
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[Signature]
 සේවක: ආර්. ඩී. එම්. ගමගේ
 මායාන්ත ප්‍රධාන ආයුර්විද්‍යා ජ්‍යෙෂ්ඨ වෛද්‍ය විද්‍යාඥයා
 ආයුර්විද්‍යා මාලිගා විශ්වවිද්‍යාලය
 සර්වදේශීය වෛද්‍ය දෙපාර්තමේන්තුව
 කොළඹ මහ නගර සභාව



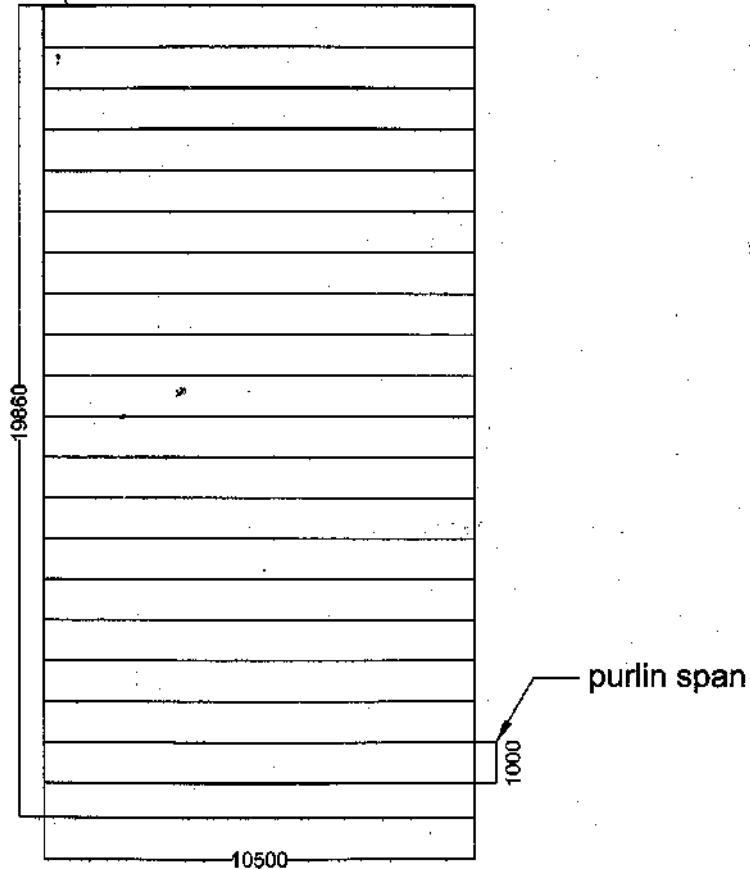
SECTION X-X

Rise 150 mm
Thread 250 mm



File
For draft
21/10/22

Child And Maternity Center,
Kirulapone



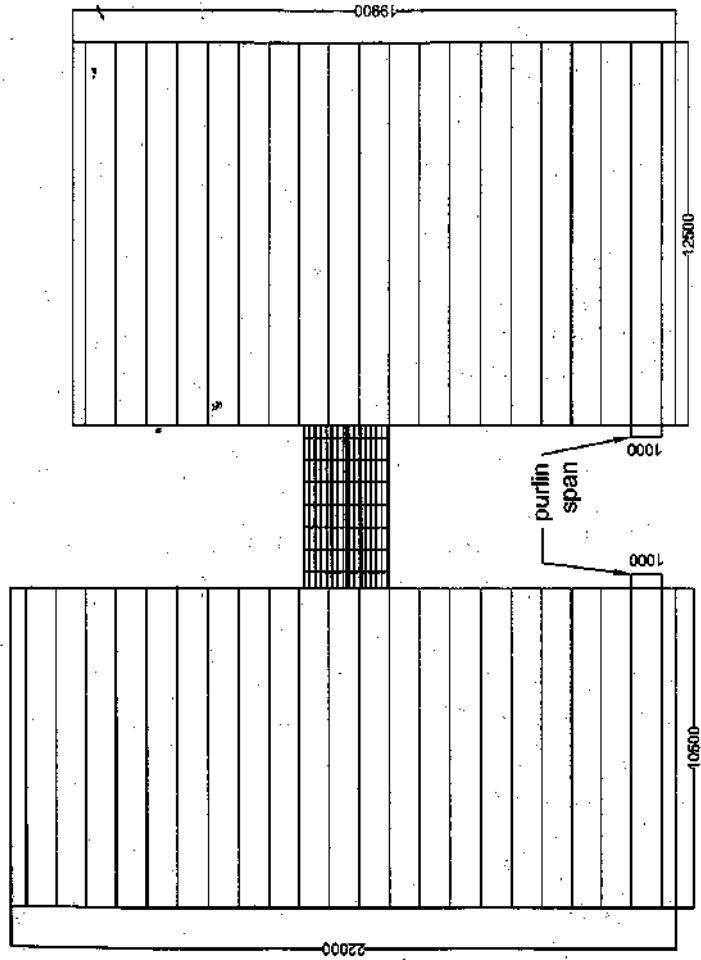
One Way Span Roof Layout

Area = 208530000mm²

Area = 2244.59 Sq.Ft

D.P. PIYASENA
SLTS(civil)
District Engineer's Office 04
Colombo municipal Council
No. 147, Awissavella Road
Kirulapone Colombo 06

Maternity Home, Kirula



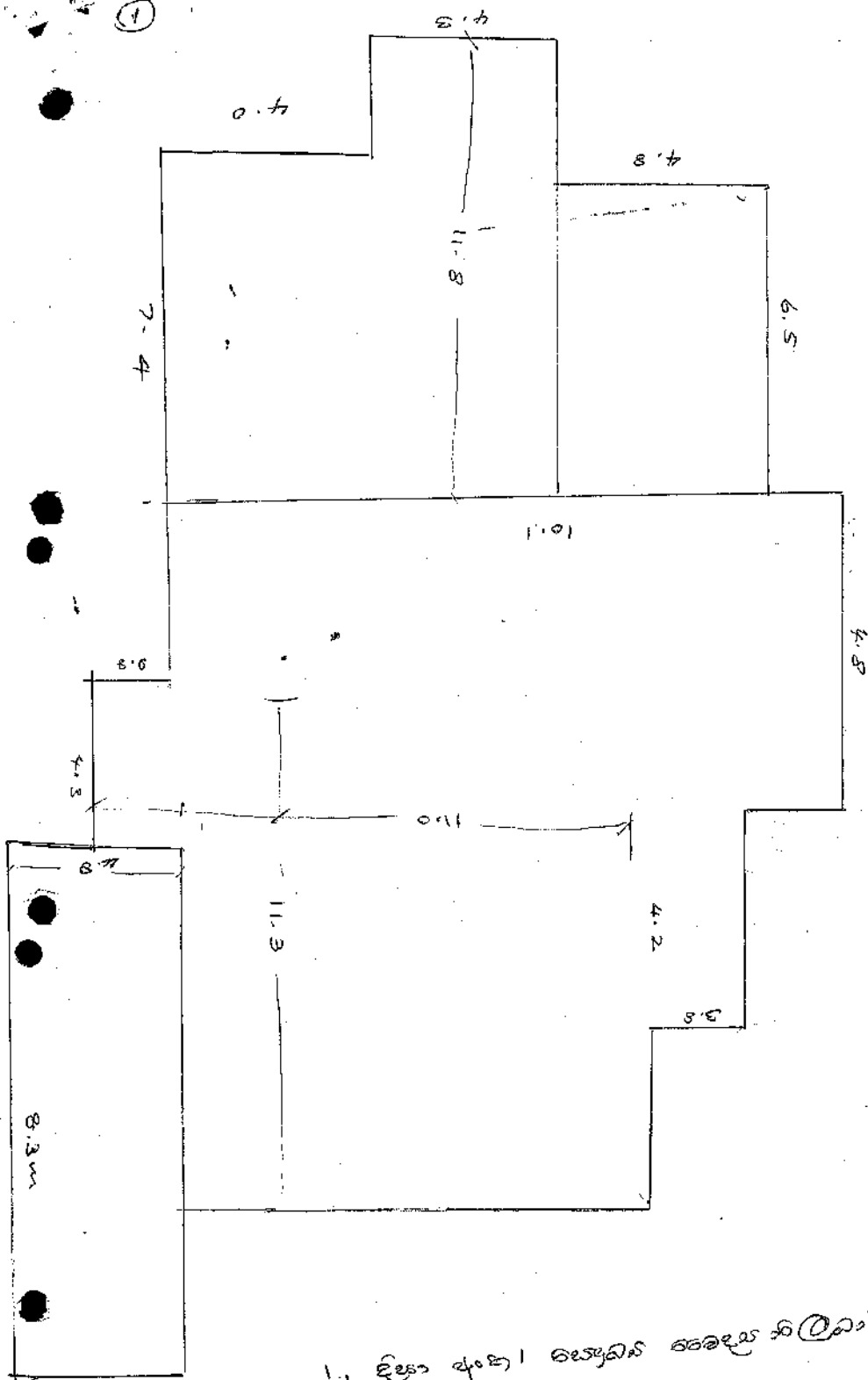
One Way Span Roof (1) Layout

Area = 231000000mm²
Area = 2486.46 Sq.Ft

One Way Span Roof (2) Layout

Area = 248750000mm²
Area = 2677.52 Sq.Ft

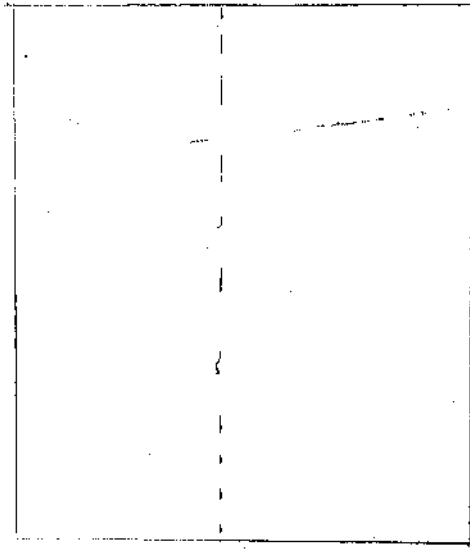
D.P. PIYASENA
SLTS(civil)
District Engineer's Office-04
Colombo Municipal Council
No. 147, Awissavella Road
Kirulapane, Colombo 06



1. ഈ ചുവട് / ചെട്ടിയിൽ അടയാളപ്പെടുത്തിയിരിക്കുന്ന
 കിടപ്പുമുറി

② ③ ③

7.6 m

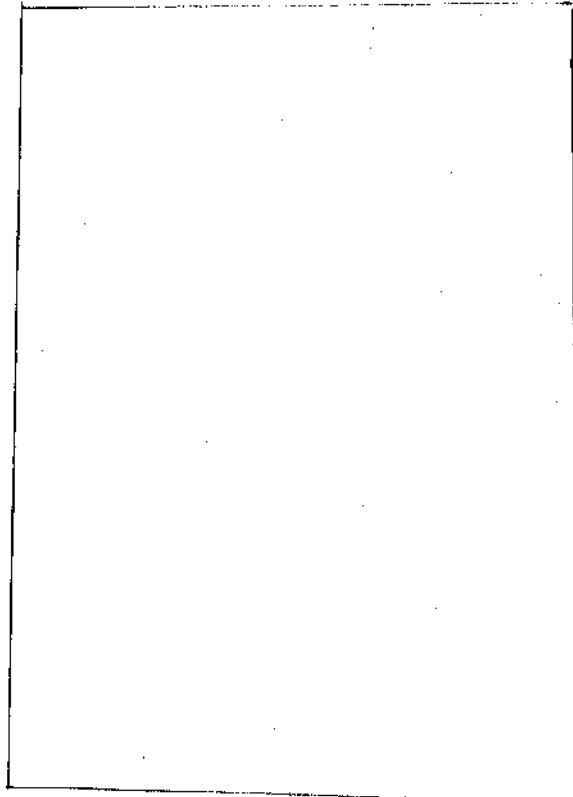


7.8 m

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3/ Roofs



20 m

② ③ ③

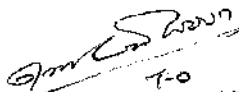
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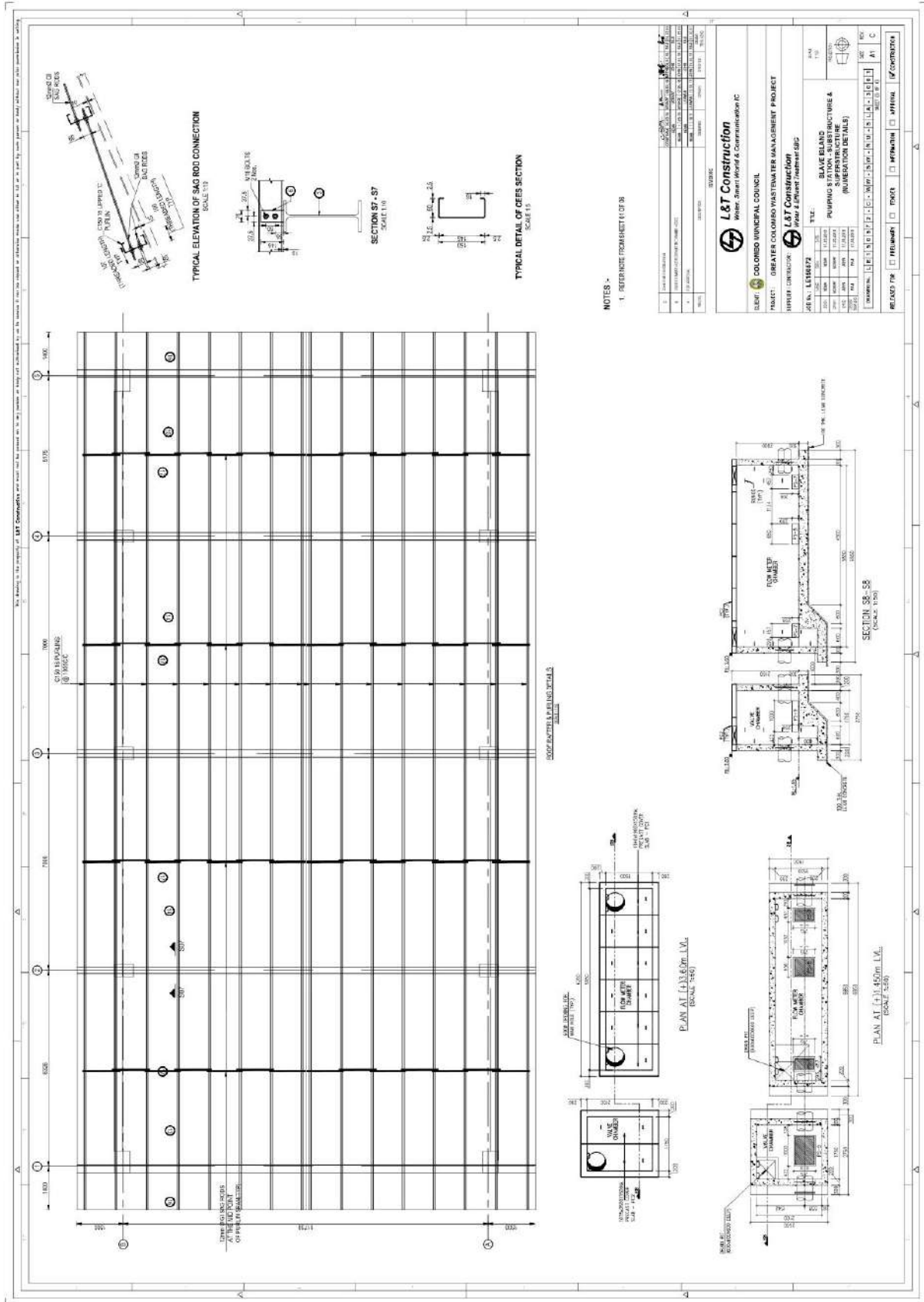
9.6 m

2/ Roofs

$$\begin{aligned}
 \textcircled{1} \quad & 6.5 \times 4.8 \text{ m} = 31.2 \\
 & 11.8 \times 4.3 \text{ m} = 50.74 \\
 & 7.4 \times 4.0 \text{ m} = 29.6 \\
 & 10.1 \times 4.8 \text{ m} = 48.48 \\
 & 4.3 \times 2.8 \text{ m} = 12.04 \\
 & 11.8 \times 11.0 \text{ m} = 129.80 \\
 & 4.2 \times 3.8 \text{ m} = 15.96 \\
 & 8.3 \times 4.8 \text{ m} = 39.84 \\
 & 11.6 \times 6.4 \text{ m} = 74.24 \\
 & 9.0 \times 7.5 \text{ m} = 67.50 \\
 & 9.8 \times 7.5 \text{ m} = 73.50 \\
 & 4.1 \times 3.4 \text{ m} = 13.94 \\
 & 3/7.8 \times 7.6 \text{ m} = 177.84 \\
 & 2/20.0 \times 9.6 \text{ m} = \frac{384.00}{1143.18 \text{ m}^2}
 \end{aligned}$$

$$\underline{\underline{11,43,180 \text{ m}^2}}$$


 T-0
 2022.10.12



SECTION 9
STANDARD FORMS (BID)

FORM OF BID SECURITY

[this Guarantee form shall be filled in accordance with the instructions indicated in brackets]
..... [insert
issuing agency’s name, and address of issuing branch or office]

Beneficiary: Municipal commissioner
Colombo municipal council,
Colombo 07.

Date:..... [insert (by issuing agency) date]

BID GUARANTEE No:[insert
(by issuing agency) number] We have been informed that
.....[insert (by
issuing agency) name of the bidder] (hereinafter called “the
bidder”) has submitted to you its bid dated [insert (by
issuing agency) date] (hereinafter called “the Bid”) for the
execution of Supply, Installation and commissioning of grid
connected solar power systems (Net metering) for Colombo
municipal council’s town hall building, town hall new building,
mayor’s residence, municipal press, public library, Public health,
municipal veterinary department, Indigenous medicine
department, Sports and recreation department, Public assistance
department, Engineers department, Drainage and water supply
division and Commissioner’s residence.

[insert IFB number] (“the IFB”).

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we [insert name of
issuing agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in
total an amount of[insert amount in figures]
..... [insert amount in words] upon receipt by us
of your first demand in writing accompanied by a written statement stating that the Bidder is
in breach of its obligation(s) under the bid conditions, because the Bidder:

- a) has withdrawn its Bid during the period of bid validity specified; or
- b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter “the ITB”); or
- c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire: (a) if the bidder is the successful bidder, upon our receipt of copies of the Contract signed by the bidder and of the Performance Security issued to you by the bidder; or (b) if the bidder is not the successful bidder, upon the earlier of the successful bidder furnishing the performance security, otherwise it will remain in force up to (*insert date*)

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

[Signature(s) of authorized representative(s)]