NEPAL ELECTRICITY AUTHORITY

(An Undertaking of Government of Nepal)

Generation Directorate
MEDIUM GENERATION OPERATION AND MAINTENANCE DEPARTMENT

Ilam (Puwakhola) Hydropower Station

Golakharka, Ilam

Bid No.: NEA-IHPS-2074/075-CQ/09

SEALED QUOTATION

FOR

Miscellaneous Civil Repair and Maintenance Works

AT

ILAM HYDROPOWER STATION

March, 2018

Issued on:

Name & Address of the Bidder:

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Section I
Invitation for Bids (IFB)

(First date of Publication: 2074/12/01, (15th March, 2018)

1. Nepal Electricity Authority (NEA), Medium Generation, Operation & Maintenance Department, Ilam (Puwakhola) Hydro Power Station, Ilam invites Wax Sealed Quotations from registered firm for Miscellaneous Civil Repair and Maintenance Works at IHPS, Ilam as listed in the table below :

Sealed Quotation No:	Work Description	Last date for Bid Purchase	Last date for Bid Submission	Bid Bond Amount
NEA-IHPS-2074/075–CQ/09	*Miscellaneous Civil Repair and Maintenance Works (Estimated Amount without VAT: NRs.17,66,210.67)*	Up to Chaitra 15, 2074	Upto Chaitra 16 2074,Till 12.00 Noon	**NRs. 55,000.00**

2. A complete set of Bid Documents may be purchased during office hours on all working days by any interested eligible Bidder from **2074/12/01** onwards upon submission of a written application to the addresses below accompanied by a bank voucher (non refundable) of **NRs. 1,000.00** towards the cost of the Bid Documents deposited in ***A/C of Ilam Hydro Power Station, current account no: 05CA063829NPR001 (Dharauti) maintained at NIC Asia Bank Ltd., Ila or Account No. 1206101-001-012-524 at Nepal Rastra Bank, Thapathali, Kathmandu***.The Bid documents shall be available for sale as specified in Table above at the office mentioned below.
3. The Bidders must produce a notarized copy of the certificates of VAT registration and PAN registration and Tax Clearance or Submission of tax return up to 2073/74 at the time of purchase of the Bid Documents.
4. All Bids accompanied by a Bid Bond of an amount equivalent to NRs.55,000.00 with minimum validity period of 75 days must be delivered in accordance with the Instructions to Bidders at or before **12:00** hour local time on or before the dates at **Office of the Ilam Hydropower Station, Golakharka, Ilam .** The Bids shall be opened at **14:00** hours local time on the same date of the Bid submission, in the presence (or without presence) of the authorised representatives of the Bidders who choose to be present. If the specified dates of Bid purchase, submission and opening fall on a public holiday, the same shall be done on the next working day.
5. For the purpose of the bidders who choose to submit their bid electronically through e-procurement section of NEA website **http://www.eproc.nea.org.np**, the bidders may either purchase the hard copy of the bidding documents directly from the office or download the necessary parts of the bidding documents from the website, prepare their bid and submit their electronic bids as specified in the instruction to bidders. In case the bidder chooses to submit the bid electronically, the bidder shall be required to submit an electronic scanned copy (*.pdf format) of the bank deposit voucher of non refundable fee stated above along with the electronic bid files.
6. Interested eligible Bidders may obtain further information on the Bids or inspect the Bid Documents at the office given below or information pertaining to Bid and e-bidding from NEA's website **http://www.eproc.nea.org.np**
7. Bidders are advised to visit the site and assess the actual site conditions before submitting their bid.
8. Any amendment in the tender notice shall be published in the NEA Web Portal and notice board of NEA.
9. NEA reserves the right to accept or reject, wholly or partially, the Sealed Quotations without assigning any reason, whatsoever.
10. Interested eligible Bidders may obtain further information from the Office mention below:

Nepal Electricity Authority
Ilam Hydro Power Station
Golakharka, Ilam
Tel/Fax: 027-520561/520351

Nepal Electricity Authority
Medium Generation, Operation and Maintenance
Office of Deputy Managing Director, NEA
DurbarMarg, Kathmandu, Nepal
Tel: 01-4153081

Nepal Electricity Authority
Generation Directorate
(Publication Date: 2074/12/01)

National Competitive Bidding

Sealed Quotations are invited for the following Schemes of Nepal Electricity Authority, Medium Generation, Operation & Maintenance Department, Ilam (Puwakhola) Hydropower Station, Golakharka ,Ilam

S.No.	Works/Jobs (e-bid)	Bid No.	Sale of Bid Documents till date (Office time)	Last date of Bid Submission, Opening Time & Place	Cost of Bid Documents (Bank deposit)	Bid Security/ Bid Bond (Bank Deposit/ Bank Guarantee)	Bid Documents available at	Bank A/C No
1	Painting Works on Civil Structures (Office, Head Tank and Power House) (Estimated Amount without VAT: Rs. 6,07,844.45)	NEA-IHPS-2074/075-CQ/08	Until 2074/12/15 (within office hrs.)	Until 2074/12/16 within 12:00hrs. & 14:00 hrs. at NEA, Ilam Hydropower Station, Ilam	NRs.1,000.00	NRs. 20,000.00	DMD, Generation Directorate/ Medium Generation OMDepartment or Ilam (Puwakhola) Hydro Power Station	Nepal Rastra Bank, Thapathali, Kathmandu A/C No. 1206101-001-012-524 & Ilam Hydro Power Station, current account no: 05CA063829NPR001 (Dharauti) at NIC Asia Bank Ltd., Ilam.
2	Miscellaneous Civil Repair and Maintenance Works (Estimated Amount without VAT: 17,66,210.67)	NEA-IHPS-2074/075-CQ/09				NRs. 55,000.00		

For Further details and downloading of Bid Documents please visit our Website http//www.nea.org.np or Contact at Tel. No. 027-520561, 520351, E-mail :neapuwakhola@gmail.com

Section II
Instructions to Bidder

1. Scope of Works

The Purchaser stated in the Invitation for Quotation invites bids for the supply and delivery of the goods and related services as detailed in attached specifications, drawings and the bill of quantities provided herein.

2. Eligible Bidder

This Invitation for Bids is open to all registered Bidders with qualifications as described below:

a) Up to date Firm/Company Registration Certificate
b) VAT and PAN Registration Certificates
c) Tax Clearance Certificate up to 073/74
d) A written declaration made by the bidder stating that the bidder is not ineligible to participate in the bid; has no conflict of interest in the bid procurement proceedings and has not been punished for the profession or business or related offence
e) Power of Attorney, if required
f) Other documents as needed

3. One Bid per Bidder

Each Bidder shall submit only one quotation. A Bidder who submits more than one quotation shall cause all the quotations with the Bidder's participation to be disqualified.

4. Content of Quotation Form

The Quotation Form comprise the documents listed below:

1. Invitation for Sealed Quotations
2. Instructions to Bidders
3. General Conditions of Contract (GCC)
4. Form of Agreement
5. Required forms.
6. Technical Specification
7. Drawings (if any)

5. Clarification

A prospective Bidder may obtain clarification on the Quotation Form from the Purchaser stated in Invitation for Quotation. Employer's address for **clarification purposes** is**: Ilam Hydropower Station, Civil Section, Ilam HPS, Ilam Tel: 027-520561**

6. Language of Quotation

All documents relating to the Quotation shall be in English or in Nepali.

7. Documents Comprising Quotation

The Quotation by the Bidder shall comprise the following:

a. Quotation and Price Schedules
b. Bid Security
c. Schedule of Requirements
d. Technical Specifications

8. Quotation Prices

The Bidder shall indicate on the appropriate Price Schedule the unit prices (where applicable) and total price of the job under the contract.

All duties, taxes and other levies payable by the Bidder under the contract shall be included in the rates, prices and total Bid Price submitted by the Bidder. Price quoted by the Bidder shall remain

	fixed and valid until completion of the Contract Performance and will not be subject to variation in any account.
9. Quotation Validity	The Quotation shall remain valid for the period of 45 days after opening of the quotation.
10. Quotation Security	The Bidder shall furnish a Security in Nepali Rupees with an amount of NRs.55,000.00. The Bid Security shall remain valid for a minimum period of 75 days after opening of the quotation. The Security shall be in the form of cash voucher deposited in the Bank Account of the Employer specified in the notice for "Invitation for Quotation" or a bank guarantee from a bank acceptable to the Employer.
11. Format and Signing of Quotations	The Quotation shall be typed or written in indelible ink and shall be signed by an authorized person. Any entries or amendments including alternations, additions or corrections made shall be initialed by the same authorized person.
12. Sealing and Marking of Quotations	The Bidder shall submit his Quotation in sealed envelopes. The envelope shall be addressed to Purchaser specified in the Invitation for Quotation and shall bear the name and identification number of the quotation.
13. Deadline for Submission of Quotations	Quotations shall be delivered to Purchaser at the address no later than the time and date specified in the Invitation for Quotation.
14. Late Quotation	Any Quotation received by Purchaser after the deadline shall not be accepted and shall be returned unopened to the Bidder upon request.
15.Modification And Withdrawal	Quotations once submitted shall not be withdrawn or modified.
16. Bid Opening	Purchaser shall open the Quotations in the presence of the Bidders' representatives who choose to attend at the time and in the place as specified in the Invitation for Quotation. Purchaser shall prepare and provide minutes of the opening including the information disclosed to those present.
17. Process to be Confidential	Information relating to the examination, evaluation and comparison of Quotations and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any efforts by the Bidder to influence Purchaser in the Quotation evaluation, comparison or contract award decisions may result in rejection of Bidder's quotation.
18.Examination of Quotations	Prior to the detailed evaluation of Quotations, Purchaser shall determine whether each Quotation (a) meets the eligibility criteria defined in Clause 2; (b) has been properly signed; (c) is accompanied by the required Securities; and (d) is substantially responsive to the requirements of the Bidding documents.
19. Evaluation	19.1 In evaluating the Quotations, Purchaser shall determine for each

and Comparison of Quotations

Quotation the evaluated Bid Price by adjusting any corrections for errors. Quotations shall be checked by Purchaser for any arithmetic errors. Errors shall be corrected by Purchaser as follows:

a. where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern; and
b. where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted shall govern

19.2 If the Bidder does not accept the corrected amount, the Quotation shall be rejected and the Security pursuant to Clause 10 may be forfeited.

20. Award of Contract

Purchaser shall decide the award of the contract, within 15 days of the opening of the quotation, to the Bidder whose Quotation is within the approved estimate and who has offered the lowest evaluated Bid Price, provided that such Bidder has been determined to be eligible in accordance with the provisions of Clauses 2.

21. Right to Accept or Reject

Purchaser reserves the right to accept or reject any Quotation or to cancel the bidding process and reject all Quotations, at any time prior to the award of the contract, without assigning any reasons whatsoever and without thereby incurring any liability to the affected Bidder or Bidders.

22. Notification of Award and Signing of Agreement

22.1 The Bidder whose Quotation is accepted and all other participating bidders shall be notified of the award by Purchaser. Within 7 days of receipt of the notification, the successful Bidder shall deliver the Performance Security pursuant to Clause 23 and sign the Agreement.

22.3 Inability of the Bidder to make an Agreement within the above stated period shall result in cancellation of the Contract Award and forfeiture of the Bidder's Security, upon which the Contract shall then be awarded to the next successive successful Bidder.

23. Performance Security

The successful Bidder shall deliver to Purchaser a Performance Security in cash or Bank Guarantee acceptable to Purchaser as below:

i. If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent less than the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price.
ii. For the bid price less than 15 percent of the cost estimate, the performance security amount shall be determined as follows: Performance Security Amount = [(0.85 x Cost Estimate – Bid Price) x 0.5] + 5% of Bid Price. The Bid Price and Cost Estimate shall be inclusive of Value Added Tax.

24.Additional Securities

The Bidder may be required to provide additional Performance Security if the Employer determines that the rate quoted by the Bidder in the Bill of Quantities, are too low for execution of the contract. In such case, the Employer shall instruct the Bidder to provide additional 8% security for signing of the Contract Agreement. Bidder's failure to do provide additional security shall result in forfeiture of the Bid Security and award of the Contract to the next

lowest evaluated Bidder.

25.Corrupt or Fraudulent Practices

The Employer shall reject a bid for award if it determines that the Bidder recommended for award of contract has engaged in corrupt or fraudulent practices in competing for the contract in question.

26.Conduct of Bidders

28.1 The Bidder shall be responsible to fulfill his obligations as per the requirement of the Contract Agreement, Bidding documents, GoN's Procurement Act and Regulations.

28.2 The Bidder shall not carry out or cause to carryout the following acts with an intention to influence the implementation of the procurement process or the procurement agreement :

a) give or propose improper inducement directly or indirectly,

b) distortion or misrepresentation of facts

c) engaging or being involved in corrupt or fraudulent practice

d) interference in participation of other prospective bidders.

e) coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings,

f) collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial/uncompetitive bid price with an intention to deprive the Employer the benefit of open competitive bid price..

g) contacting the Employer with an intention to influence the Employer with regards to the bid or interference of any kind in examination and evaluation of the bids during the period after opening of bids up to the notification of award of contract

27. Blacklisting Bidder

29.1 Without prejudice to any other right of the Employer under this Contract, GoN, Public Procurement Monitoring Office may blacklist a bidder for his conduct up to three years on the following grounds and seriousness of the act committed by the bidder:

a) if it is proved that the bidder committed acts pursuant to the Sub - Clause 28.2,
b) if the bidder fails to sign an agreement pursuant to Sub - Clause 24.2,
c) if it is proved later that the bidder/contractor had committed substantial defect in implementation of the contract or had not substantially fulfilled his obligations under the contract or the completed work is not of the specified quality as per the contract ,
d) if convicted by a court of law in a criminal offence which disqualifies the bidder from participating in the contract.
e) if it is proved that the contract agreement signed by the bidder was based on false or misrepresentation of bidder's qualification information,
f) other acts mentioned in the Bidding Data

29.2 A firm declared blacklisted and ineligible by the GON shall be

ineligible to bid for a contract during the period of time determined by the PPMO.

30. Provision of PPA and PPR

If any provision of this document is inconsistent with Public Procurement Act (PPA), 2063 or Public Procurement Regulations (PPR), 2064, the provision of this document shall be void to the extent of such inconsistency and the provision of PPA and PPR shall prevail.

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Special Instructions to Bidders for E-Bidding

General procedures for electronic bid submission (e-submission) are described below.

Bid preparation

A Bidder who wish to submit the bid electronically may purchase the Bid Document directly from the Employer office or may download the bid document from the website and deposit the equivalent amount in the Revenue account of the employer as specified in the notice or/and Bid Document.

Description of bid submission procedure through electronically (e-submission) only:

i) Interested bidders shall, either purchase the Bid Document directly from the Employer office or may download the bid document from the website and deposit the equivalent amount in the Revenue account of the employer as specified in the notice or/and Bid Document.

ii) The Bidder shall fill the following documents and forms (in hard copy of issued bid documents), signed by the authorized representative with seal of the company
   a) Bill of Quantity (BOQ) with rate, amount
   b) Forms of Bid, Qualification Information

iii) The Bidder shall then scan the completed original documents, forms in PDF files with appropriate filename shown in the table below.

S No	Document	PDF File Name	Requirement	Remarks
1	Letter of Bid	Letter of Bid-1	Mandatory	
2	Bid Security (Bank Guarantee)	Bid Security-2	Mandatory	
3	Company Registration	Company Reg-3	Mandatory	All firms of JV
4	VAT Registration	VAT Reg-4	Mandatory for National firms	All firms of JV
5	Tax clearances certificate	Tax-5	Mandatory for National firms	All firms of JV
6	Power of Attorney of Bid Signatory	Power of Att-6	Mandatory, if applicable	
7	Business Registration (License) Certificate	License-7	Mandatory	
8	Bank Voucher for Cost of Bidding document	Voucher-8	Mandatory	
9	Joint Venture Agreement	JV-Doc-9	Mandatory for JV Firm	In case of JV
10	Qualification Information	Qualifications-10	Not Mandatory	
11	Applicable Price Adjustment Table	Price adjust-11	Mandatory if applicable	
12	Complete BOQ	BOQ-12	Mandatory	

13	Eligibility Information	Eligibility-13	Mandatory	Additional Documents as asked in technical Data Sheet
14	Schedule of Requirement	Sch. Of Req.-14	Mandatory	
15	Manufacturers Authorization	Auth-15	Mandatory where applicable	
16	Technical Data Sheet	TDS-16	Not Mandatory	
17	Catalogues mentioned in Technical Specification	Catalogues-17	Mandatory where applicable	
18	Type Test Certificate	Certificate-18	Not Mandatory	
19	ISO or any international standard certificates	ISO-19	Mandatory where applicable	

Note; Mandatory means the mentioned files shall be in e-submission and non-submission of such file shall be considered as non-responsive.

iv) For e-submission purpose the Bidder shall, at first, register in the e-procurement section of NEA Web site http://www.nea.org.np

v) After preparing all the required bidding documents in PDF scan files as specified in (ii) and (iii), the Bidder shall upload the PDF bid files and submit his complete bid online through e-procurement section of NEA website http://www.nea.org.np within the specified date and time.

The Employers address for the purpose of e-submission of bid:

The Employers address for the purpose of electronic Bid submission is e-procurement section of **http://www.eproc.nea.org.np**.

In case of e-submission of bid, the bidder shall submit his bid electronically in PDF files in the manner as specified above and additional submission of hard copy of "Original plus one copy of bid" is not mandatory.

In case both the electronic bid and original bid in hard copy are submitted to the Employer within the specified time period, the Bidder's electronic bid and original bid in hard copy will be accepted for evaluation provided the Bid price in Bill of Quantity Sheet is same. If there is any discrepancy in Bid price in Bill of Quantity between the electronic and original bid in hard copy it will be treated as two separate bids from one Bidder and hence, both the electronic bid and original bid in hard copy shall be disqualified, as per ITB Clause.

However, for electronically submitted bid in PDF files, the bidder shall be required to submit documents/clarifications as specified in ITB Clause.

The deadline for e-submission of bids shall be;

- Bidders shall be also explained about the details of e-submission procedures in the pre-bid meeting.
- The e-procurement system will accept the e-submission of bid during office hours from the date after publishing the notice and will automatically not allow the e-submission of bid after the deadline for submission of bid, as specified above.
- The standard time for e-submission is Nepalese standard time as set out in the server of NEA.
- In case of e-submission of bid, the Bidder shall submit his bid electronically in PDF files in the manner as specified in ITB Clause only, and submission of "original plus one copy" shall not be required before deadline for submission time as per ITB Clause.

Provision for Substitution or Modification or Withdrawal of Bid

When a bidder submits his bid in hard copy the e-procurement section does not allow the Bidder to submit his Substitution, or Modification, or Withdrawal through e-procurement section of NEA's Web site.

In case of e-submitted bid;

- Bidders may submit his Substitution or Modification or Withdrawal either in hard copy or through e-submission.
- For Substitution of Bid the Bidder shall follow similar steps as specified in ITB - Clause with a Substitution letter in PDF file.
- For Modification or Withdrawal of bid the Bidder is required to submit PDF scan copy of their Modification or Withdrawal letter and a written Power of Attorney of the signatory for Modification/ Withdrawal, duly signed by Authorized Representative/s of the Firm / all authorized Joint Venture partners.

Bid opening for e-submitted bid;

- Electronically submitted bid shall be opened first at the same time and date as specified in the ITB and IFB notice.
- The e-procurement system allows the Employer to download and open the e-submitted bid files from bidders only after the time for opening the bids.
- The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files (not complying the ITB Clauses) shall be considered incomplete and rejected for further bid evaluation.
- After opening of e-submitted bids files, all files shall be printed and recorded at the time of bid opening.

In case of "WITHDRAWAL" or "MODIFICATION" or "SUBSTITUTION" by the Bidder through e-submission, the e-submitted PDF files under "WITHDRAWAL" or "MODIFICATION" or "SUBSTITUTION" shall be opened and read out first. Bids for which acceptable notice of "WITHDRAWAL" or "SUBSTITUTION" has been submitted pursuant to ITB Clause shall not be opened.

Clarification of Bid

In case of e-submission of bid, the Bidder shall be required to submit the original completed Bid consisting of Forms of Bid, Qualification Information, Special Conditions of Contract, Bill of Quantities, Supplementary Information and other clarifications for verification purpose upon notification to do so from the Employer.

The bidder shall be required to submit documents/clarifications as specified in the ITB clause within 3 days.

Examination of e-submitted Bids and Determination of Responsiveness

For a e-submitted bid to be substantially responsive the requirement as specified in the ITB Clauses shall be fulfilled.

Evaluation and Comparison of e-submitted Bids

In case of e-submitted bids, the Employer evaluates the bid based on the information as per electronically submitted bid files. For clarification/ verification purpose, the Employer may request the Bidder to submit documents/ clarifications as specified in ITB Clause.

In case, the Bidder could not substantiate or provide evidence to prove the information provided in e-submitted bid through documents/ clarifications as per ITB Clause, the bid shall not be considered for further evaluation and respective ITB Clause for forfeiture of bid security shall be applicable.

Steps to be followed by a Bidder to submit the electronic bid submission

1. Prepare the paper bid document
   - Either purchase the Bid Document directly from the Employer office or may download the bid document from the website and deposit the equivalent amount in the Revenue account of the employer as specified in the notice or/and Bid Document.

- Fill the rates and amount in BOQ,
- Fill the Bid Form,
- Prepare the necessary copy of Company registration, VAT/PAN registration, Tax clearance certificate,
- Prepare the necessary specific papers like Power of Attorney for bid signatory, Joint Venture agreement, if bidding in JV,
- Prepare summary of qualification information sheet (Financial turnover, Experience, Manpower, Equipment, Credit line, Litigation etc) in the specified format,
- Prepare the bid guarantee letter for the specified bid security amount and in the specified format,

2. Prepare the Electronic bid files in pdf format

Once prepared the above paper documents the bidder shall prepare the electronic bid files in pdf format as follows;

- Scan the above documents in pdf format, give the specific file name for each document,
- Prepare all scanned bid files in pdf format and save them in a separate folder in own computer to ease bid uploading process.

3. Electronic bid submission

- Once the electronic bid files are ready the Bidder shall connect to internet,
- Open the NEAs website www.nea.org.np and open E-procurement section,
- Register in the Bidders name and get User name and Password for Login,
- Confirm the registration by clicking the specified link in auto generated e-mail from NEAs web site,
- After confirmation for bidder's registration click Bidder, fill User name, Password and Login,
- Choose and click the specific tender notice for which the electronic bid files has been prepared,
- Click the Bid now button to submit the electronic bid files,
- Upload each specified electronic bid files by clicking the Upload button and select the respective bid files by Browsing,
- Once all the electronic bid files are uploaded, click the Submit the Bid button for final e-submission of electronic Bid,
- Once the e-submission is successfully completed the Bidder shall receive a auto generated confirmation e-mail from the NEAs website,
- Bidder to keep the conventional paper bid document, qualification information, and other related documents safe as the Buyer may seek the supporting bid documents and clarifications, as necessary during bid evaluation process.
- The Bidder shall submit the necessary supporting documents and clarifications (conventional bid document)

SECTION III
BID FORM
LETTER OF ACCEPTANCE
AGREEMENT
ELIGIBILITY REQUIREMENTS

BID FORM

To :
Ilam Hydropower Station
Generation Directorate
Nepal Electricity Authority
Ilam, Nepal
Tel.: -027-520561

Gentlemen:

We have examined the documents listed in Instruction to Bidders, Clause II and offer to execute the ***Miscellaneous Civil Repair and Maintenance Works, NEA-IHPS-2074/075-CQ/09*** in conformity with the Contract for the sum of ……..…….. (in words) …….. (in figures) or such other sum as may be ascertained under the contract.

This bid shall remain binding until _____ *days*. This bid and your written acceptance of it shall constitute a binding contract between us.

We understand that the NEA is not bound to accept the lowest or any offer received for the Works.

Signature _____

Date: _____

Name: _____

Authorized to sign on behalf of (organization name): _____

Designation: _____

Office Stamp of the Organization: _____

Letter of Acceptance

[Letterhead of the NEA]

Date: _____

To: *[name and address of the contractor]*

This is to notify you that your Quotation (Bid) dated *[date]* for execution of ***Miscellaneous Civil Repair and Maintenance Works***, *Quotation ID:* ***NEA-IHPS-2074/075-CQ/09*** for the Contract Price of *[insert the amount in Nepalese Rupees in numbers and words]* as corrected and modified in accordance with the Instructions to *Bidder*s is hereby accepted by our Agency.

You are hereby instructed to contact NEA, Ilam Hydropower Station, Ilam to sign the formal agreement on *[date]* at *[time].* As per the Instructions to Bidders you are also required to submit Performance Security, as specified in the Section - 9 Sample Forms of Securities, consisting of a Bank Guarantee in an approved format or cash deposit voucher in favor of the **NEA in Dharauti *A/C of Ilam* Hydropower Station, Ilam*, Account No. 05CA063829NPR001 at NIC Asia Bank ltd, Ilam*.**

The NEA shall forfeit the bid security, in case you fail to furnish the Performance Security and to sign the contract.

Please convey our unconditional acceptance by signing on the original of this letter and submit the required Performance Security at the time of formal agreement.

Authorized Signature: _____

Name: _____

Designation: _____

Contract Agreement

This Agreement, made the *[day]* day of *[month]*, *[year]* between *NEA, Ilam Hydropower Station,* Ilam *(*hereinafter called "NEA") and *[name and address of contractor]* (hereinafter called "the contractor") of the other part.

Whereas the NEA is desirous that the contractor execute ***Miscellaneous Civil Repair and Maintenance Works,*** *Quotation ID:* ***NEA-IHPS-2074/075-CQ/09*** (hereinafter called "the Works") and the NEA has accepted the bid for _____ *[insert the amount in Nepalese Rupees in numbers and words]* by the contractor for the execution and completion of such Works and the remedying of any defects therein.

Now this Agreement witnesses 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 hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the NEA to the contractor as hereinafter mentioned, the contractor hereby covenants with the NEA to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
3. The NEA hereby covenants to pay the contractor in consideration of the execution and completion of the Works and the remedying of defects wherein, 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 thereto have caused this Agreement to be executed the day and year first before written.

Signed by for and on behalf of the NEA

_____

[Signature]

_____

[Title]

in the presence of _____

Company Seal :

Signed by for and on behalf of the Contractor

_____

[Signature]

_____

[Title]

in the presence of _____

Company Seal :

ELIGIBILITY INFORMATION

1. Eligibility Requirements:

All Bidders shall submit following documents as pre- requisites for eligibility:
Constitution or legal status of Bidder: [attach copy]

a. Up to date Registration Certificate: [attach copy]
b. Pan Registration Certificate: [attach copy]
c. Tax Returns/Clearance certificate (upto 2073/74) or as stated in IFB/ITB : [attach copy]
d. Power of Attorney: [attach copy], if required
e. Place of registration: [insert]
f. A written declaration made by the Bidder stating that the Bidder is not ineligible to participate in the bid; has no conflict of interest in the bid procurement proceedings and has not been punished for the profession or business related offence.
g. Principal Place of business: [insert]
h. All the attach copy of the documents shall be legally notarized

SECTION IV
GENERAL CONDITIONS OF CONTRACT (GCC)

1. General Provisions

1.1 Definitions

In the Contract as defined below, the words and expressions defined shall have the following meanings assigned to them, except where the context requires otherwise:

The Contract

1.1.1 "**Contract**" means the Agreement signed between the Employer and the contractor and the other documents listed in the Special Conditions of Contract (SCC).

1.1.2 "**Specification**" means the document as listed in the SCC, and any variation to such document.

1.1.3 "**Drawings**" means the Employer's drawings of the Works as listed in the SCC, and any variation to such drawings.

1.1.4 "**Bill of Quantities**" means the priced and completed bill of quantities forming part of the Tender.

1.1.5 "**Bid or Quotation**" means the contractor's priced offer to the Employer for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance.

1.1.6 "**Letter of Acceptance**" means the formal acceptance by the Employer of the **bid** or Tender.

Persons

1.1.7 "**Employer**" means the person named in the Agreement and the legal successors in title to this person, but not (except with the consent of the contractor) any assignee.

1.1.8 "**Contractor**" means the person named in the Agreement and the legal successors in title to this person, but not (except with the consent of the Employer) any assignee.

1.1.9 "**Party**" means either Employer or the contractor.

Date, Times and Periods

1.1.10 "**Commencement Date**" means the date stated in the SCC after the date the Agreement comes into effect or any other date agreed between the Parties.

1.1.11 "**Day**" means a calendar day.

1.1.12 "**Time for Completion**" means the time for completing the Works as stated in the SCC (or as extended under Sub-Clause 6.3), calculated from the Commencement Date.

Money and Payments

1.1.13 "**Cost**" means all expenditure properly incurred (or to be incurred) by the contractor, whether on or off the Site, including overheads and similar charges, but does not include profit.

1.1.14 "**Contract Price**" means the sum stated in the Letter of Acceptance as payable to the contractor and adjusted

with any Variation Orders and Other Adjustments upon completion of the works and the remedying of any defects therein in accordance with the provisions of the Contract.

1.1.15 "**Retention Money**" means the aggregate of all monies retained by the Employer pursuant to Sub-Clause 10.3

Other Definitions

1.1.16 "**Contractor's Equipment**" means all apparatus, machinery, vehicles, facilities and other things required for the execution of the Works but does not include Materials or Plant.

1.1.17 "**Country**" means Nepal.

1.1.18 "**Employer's Liabilities**" means those matters listed in Sub-Clause 5.1.

1.1.19 "**Materials**" means things of all kinds (other than Plant) intended to form or forming part of the permanent work.

1.1.20 "**Plant**" means the machinery and apparatus intended to form or forming part of the Permanent Works.

1.1.21 "**Site**" means the places provided by the Employer where the Works are to be executed, and any other places specified in the Contract as forming part of the Site.

1.1.22 "**Variation**" means any change which is a result of unforeseen circumstances that arise as a result of instruction by the Employer/ Supervisor under Sub-Clause 9.1.

1.1.23 "**Works**" means all the work and design (if any) to be performed by the contractor including temporary work and any Variation.

1.1.24 "**Permanent Works**" means the permanent works to be executed (Including Plant) in accordance with the Contract.

1.1.25 "**Temporary Works**" means all temporary works of every kind (other than contractor's Equipment) required in or about the execution and completion of the Works and the remedying of any defects therein.

1.1.26 "**Adjudication**" means the procedure to be adopted by the contractor and the Employer in solving the dispute if it is not solved amicably pursuant to Sub-Clause 13.1.

1.2 Interpretation

Words importing persons or parties shall include firms and organizations. Words importing singular or one gender shall include plural or the other gender where the context requires.

1.3 Priority of Documents

The documents forming the Contract shall to be taken as mutually explanatory of one another. If an ambiguity or discrepancy is found in the documents, the Employer shall issue any necessary instructions to the contractor, and the priority of the documents shall be in accordance with the

order as listed in the SCC.

1.4 Law The law of the Contract is stated in the SCC.

1.5 Communications Where provision is made for the giving or issue of any notice, instruction, or other communication by any person, unless otherwise specified such communication shall be written in the language stated in the SCC as shall not be unreasonably withheld or delayed.

If a notice given pursuant to Sub Clause 1.5 fails to be delivered due to failure to trace the address of the party then the notice shall be published as public notice in a National daily newspaper and when the notice is so published then the notice shall be considered to be delivered to the concerned party.

1.6 Statutory Obligations The contractor shall comply with the laws of the countries where activities are performed. The contractor shall give all notices and pay all fees and other charges in respect of the Works.

2. The Employer

2.1 Provision of Site The Employer shall provide the Site and right of access thereto at the times stated in the SCC.

2.2 Permits and Licenses The Employer shall, if requested by the contractor, assist him in applying for permits, licenses or approvals which are required for the Works.

2.3 Employer's Instructions The contractor shall comply with all instructions given by the Employer in respect of the Works including the suspension of all or part of the Works.

2.4 Approvals No approval or consent or absence of comment by the Employer or the Employer's representative shall affect the contractor's obligations.

3. Employer's Representatives

3.1 Authorized Person One of the Employer's personnel shall have authority to act for him. This authorized person shall be as stated in the SCC, or as otherwise notified by the Employer to the contractor.

3.2 Employer's Representative The Employer may also appoint a firm or individual to carry out certain duties. The appointee may be named in the SCC, or notified by the Employer to the contractor from time to time.

The Employer shall notify the contractor of the delegated duties and authority of this Employer's representative.

4. The Contractor

4.1 General Obligations

The contractor shall carry out the Works properly and in accordance with the Contract. The contractor shall provide all supervision, labor, Materials, Plant and contractor's Equipment which may be required. All Materials and Plant on Site shall be deemed to be the property of the Employer.

During continuance of the of the contract, the contractor and his sub-contractors shall abide at all times by all labor laws, including child labor related enactments, and rules made there under.

A child who has not attained the age of fourteen years shall not be employed in any work as a laborer.

4.2 Contractor's Representative

The contractor shall submit to the Employer for consent the name and particulars of the person authorized to receive instructions on behalf of the contractor.

4.3 Subcontracting

The contractor shall not subcontract the whole of the Works. The contractor shall not subcontract any part of the Works without the consent of the Employer.

4.4 Performance Security

As stated in the SCC, the Contractor shall deliver to the Employer no later than the date specified in the Letter of Acceptance.

5. Employer's Liabilities

5.1 Employer's Liabilities

In this Contract, Employer's Liabilities mean:

a. war, hostilities (whether war be declared or not), invasion, act of foreign enemies, within the Country,

b. rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war, within the Country,

c. riot, commotion or disorder by persons other than the contractor's personnel and other employees, affecting the Site and/or the Works.

d. use or occupation by the Employer of any part of the Works, except as may be specified in the Contract,

e. design of any part of the Works by the Employer's personnel or by others for whom the Employer is responsible,

f. any operation of the forces of nature affecting the Site and/or the Works, which was unforeseeable or against which an experienced contractor could not reasonably

have been expected to take precautions

g. a suspension under Sub-Clause 2.3 unless it is attributable to the contractor's failure,

h. any failure of the Employer,

i. physical obstructions or physical conditions, other than climatic conditions, encountered on the Site during the performance of the Works, which obstructions or conditions were not reasonably foreseeable by an experienced contractor and which the contractor immediately notified to the Employer,

j. any delay or disruption caused by any Variation,

k. any change to the law of the Contract after the date of the contractor's offer as stated in the Agreement,

l. losses arising out of the Employer's right to have the permanent work executed on, over, under, in or through any land, and to occupy this land for the permanent work, and

m. damage which is an unavoidable result of the contractor's obligations to execute the Works and to remedy any defects.

6. Time for Completion

6.1 Execution of the Works

The contractor shall commence the Works on the Commencement Date and shall proceed expeditiously and without delay and shall complete the Works within the Time for Completion.

6.2 Programmed

The contractor shall submit to the Employer a programmed for the Works within the time stated in the SCC

6.3 Extension of Time

The contractor shall be entitled to an extension to the Time for Completion if he is or shall be delayed by any of the Employer's Liabilities.

The contractor shall submit an application to the Employer for extension of time, stating the causes for delay, 7 days before the expiry of the Contract completion date.

On receipt of an application from the contractor, the Employer shall consider all supporting details provided by the contractor and shall extend the Time for Completion as appropriate.

6.4 Liquidated Damages for Delay

If the contractor fails to complete the Works within the Time for Completion, the contractor's liability to the Employer for such failure shall be to pay the amount stated in the SCC for each day for which he fails to complete the Works.

7. Taking-Over

7.1 Completion

The contractor may notify the Employer when he considers that the Works are complete.

7.2 Taking-Over Notice

The Employer shall notify the contractor when he considers that the contractor has completed the Works stating the date accordingly. Alternatively, the Employer may notify the contractor that the Works, although not fully complete, are ready for taking over, stating the date accordingly.

The Employer shall take over the Works upon the issue of this notice. The contractor shall promptly complete any outstanding work and, subject to Clause 8, clear the Site.

8. Remedying Defects

8.1 Remedying Defects

The Employer may at any time prior to the expiry of the period stated in the SCC, notify the contractor of any defects or outstanding work. The contractor shall remedy at no cost to the Employer any defects due to the contractor's design, materials, plant or workmanship not being in accordance with the Contract.

Failure to remedy any defects or complete outstanding work within a reasonable time of the Employer's notice shall entitle the Employer to carry out all necessary work at the contractor's cost.

8.2 Uncovering and Testing

The Employer may give instruction as to the uncovering and/or testing of any work. Unless as a result of any uncovering and/or testing it is established that the contractor's design, materials, plant or workmanship are not in accordance with the Contract, the Contractor shall be paid for such uncovering and/or testing as a Variation in accordance with Sub-Clause 9.2.

9. Variations and Claims

9.1 Right to Vary

The Employer may instruct Variations.

9.2 Valuation of Variations

Variations shall be valued as follows:

a. where appropriate, at rates in the Contract, or

b. in the absence of appropriate rates, the rates in the Contract shall be used as the basis for valuation or

c. at appropriate new rates, as may be agreed or which the Employer considers appropriate.

9.4 Right to Claim

If the contractor incurs cost as a result of any of the

Employer's Liabilities, the contractor shall be entitled to the amount of such cost. If as a result of any of the Employer's Liabilities, it is necessary to change the Works, this shall be dealt with as a Variation.

9.5 Variation and Claim Procedure

The contractor shall submit the Employer an itemized make-up of the value of Variations and claims within 7 days of the instruction or of the event giving rise to the claim. The Employer shall check and if possible agree the value. In the absence of agreement, the Employer shall determine the value.

10. Contract Price and Payment

10.1 Valuation of the Works

The Contract Bill of Quantities and the approved Variation quantities shall be used to calculate the valuation of the works completed .The contractor shall be paid for the quantity of work done at the rate in the Bill of Quantities or rate agreed pursuant to clause 9.2 for varied works.

10.2 Payments Certificates

The Contractor shall submit to the Employer monthly statements of the estimated value of the works completed less the cumulative amount certified previously. The Employer shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor

10.3 Payments

The Employer shall pay to the contractor the amount certified less retention at the rate stated in the SCC within 30 days of the date of each certificate.

10.4 Payment of Retention

One half of the retention shall be repaid by the Employer to the contractor within 30 days upon expiry of Defects Liability Period—and the Employer has certified that the notified defects have been corrected.

The remainder of the retention shall be paid by the Employer to the contractor within 7 days after submission of evidence document from the concerned Internal Revenue Office that the contractor has submitted his Income Returns

10.5 Advance Payment

a The Employer may make advance payment to the contractor of the amounts stated in the SCC within 30 days, against provision by the contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts

repaid by the contractor. Interest will not be charged on the advance payment.

b. The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the contractor, following the schedule of completed percentages of the Works as indicated in SCC

0.6 Local Taxation & Value Added Tax

a. The prices quoted by the Contractor shall include all taxes that may be levied in accordance to the laws and regulations in being in Nepal.

b. The Contract is not exempted from value added tax. The Contractor shall pay VAT in the concerned VAT office within time frame specified in VAT regulation.

11. Termination of Contract

11.1 Default by Contractor

If the contractor abandons the Works, refuses or fails to comply with a valid instruction of the Employer or fails to proceed expeditiously and without delay or is, despite a written complaint, in breach of the Contract, the Employer may give notice referring to this Sub-Clause and stating the default.

If the contractor has not taken all practicable steps to remedy the default within 15 days after the contractor's receipt of the Employer's notice, the Employer may, by a second notice given within a further 22 days, terminate the Contract. The Contractor shall then demobilize from the Site leaving behind Materials and Plant and any contractor's Equipment which the Employer instructs in the second notice to be used until the completion of the Works.

11.2 Default by Employer

If the Employer fails to pay in accordance with the Contract, or is, despite a written complaint, in breach of the Contract, the contractor may give notice referring to this Sub-Clause and stating the default. If the default is not remedied within 7 days after the Employer's receipt of this notice, the contractor may suspend the execution of all or parts of the Works.

If the default is not remedied within 30 days after the Employer's receipt of the contractor's notice, the contractor may, by a second notice given within a further 22 days, terminate the Contract. The contractor shall then demobilize from the Site.

11.3 Insolvency

If a Party is declared insolvent under any applicable law, the other Party may by notice terminate the Contract immediately. The contractor shall then demobilize from the

Site leaving behind, in the case of the contractor's insolvency; any contractor's Equipment which the Employer instructs in the notice is to be used until the completion of the Works.

11.4 Termination by Convenience

Notwithstanding the above, the Employer shall be entitled to terminate the Contract in public interest, at any time at the Employer's convenience, by giving notice of such termination to the contractor.

11.5 Payment upon Termination

After termination, the contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

a. any sums to which the contractor is entitled under Sub-Clause 9.4,

b. any sums to which the Employer is entitled,

c. if the Employer has terminated under Sub-Clause 11.1 or 11.3, the Employer shall be entitled to a sum equivalent to 20% of the value of those parts of the Works not executed at the date of the termination,

d. if the contractor has terminated under Sub-Clause 11.2 or 11.4, the contractor shall be entitled to the Cost of his suspension and demobilization together with a sum equivalent to 10% of the value of those parts of the Works not executed at the date of termination

The net balance due shall be paid or repaid within 30 days of the notice of termination.

12. Risk and Responsibility

12.1 Contractor's Care of the Works

The contractor shall take full responsibility for the care of the Works from the Commencement Date until the date of the Employer's notice under Sub-Clause 7.2. Responsibility shall then pass to the Employer. If any loss or damage occurs to the Works during the above period, the contractor shall rectify such loss or damage so that the Works conform to the Contract.

12.2 Force Majeure

If a Party is or shall be prevented from performing any of its obligations by Force Majeure, the Party affected shall notify the other Party immediately. If necessary, the contractor shall suspend the execution of the Works and, to the extent agreed with the Employer, demobilize the contractor's Equipment.

If the event continues for a period of 90 days, either Party may then give notice of termination which shall take effect 30 days after the giving of the notice.

After termination, the contractor shall be entitled to payment of

the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

a. any sums to which the contractor is entitled under Sub-Clause 9.4,

b. the Cost of his suspension and demobilization,

c. any sums to which the Employer is entitled.

The net balance due shall be paid or repaid within 30 days of the notice of termination.

13. Resolution of Disputes

13.1 Adjudication

If any dispute shall arises out of or in connection with the Contract, including any valuation or other decision of the Employer, then the parties shall attempt to settle such dispute amicably. However if the dispute is not settled amicably then the dispute shall be referred to the Adjudicator. The adjudicator shall be any person agreed by the Parties. In case of disagreement the Employer shall request Nepal Council of Arbitration (NEPCA) for appointment of the Adjudicator.

13.2 Amicable Settlement

If either Party is dissatisfied with the decision of the adjudicator attempt shall be made to resolve the dispute amicably.

14. Conduct of Bidders

14.1 The Bidder shall be responsible to fulfill his obligations as per the requirement of the Contract Agreement, Bidding documents, GoN's Procurement Act and Regulations.

14.2 The Bidder shall not carry out or cause to carryout the following acts with an intention to influence the implementation of the procurement process or the procurement agreement :

h) give or propose improper inducement directly or indirectly,

i) distortion or misrepresentation of facts

j) engaging or being involved in corrupt or fraudulent practice

k) interference in participation of other prospective bidders.

l) coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings,

m) collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial/uncompetitive bid price with an intention to deprive the Employer the benefit of open

competitive bid price..

n) contacting the Employer wit an intention to influence the Employer with regards to the bid or interference of any kind in examination and evaluation of the bids during the period after opening of bids up to the notification of award of contract

15. Blacklisting Bidder

15.1 Without prejudice to any other right of the Employer under this Contract, GoN, Public Procurement Monitoring Office may blacklist a bidder for his conduct up to three years on the following grounds and seriousness of the act committed by the bidder:

g) if it is proved that the bidder committed acts pursuant to the Sub - Clause 14.2,
h) if the bidder fails to sign an agreement pursuant to Instruction to Bidders Sub - Clause 24.2,
i) if it is proved later that the bidder/contractor had committed substantial defect in implementation of the contract or had not substantially fulfilled his obligations under the contract or the completed work is not of the specified quality as per the contract ,
j) if convicted by a court of law in a criminal offence which disqualifies the bidder from participating in the contract.
k) if it is proved that the contract agreement signed by the bidder was based on false or misrepresentation of bidder's qualification information,
l) other acts mentioned in the Bidding Data

15.2 A firm declared blacklisted and ineligible by the GON shall be ineligible to bid for a contract during the period of time determined by the PPMO.

SECTION – V
SPECIAL CONDITIONS OF CONTRACT (SCC)

This SCC forms part of the Agreement

Item	**Clause**	**Data**
Documents forming the Contract listed in the order of Priority **Document** a) The Agreement b) Special Conditions of Contract c) General Conditions of Contract d) The Technical Specifications e) The Drawings f) The Bill of Quantities	1.1.1	Applicable
Time for Completion	1.1.12	**75 Days after issuance of work order/s, if shutdown of generating unit/s required for execution of works**
Law of Contract	1.4	Applicable Law of Nepal
Language	1.5	English
Provision of Site	2.1	Ilam HPS, Ilam
Authorized Person	3.1	**Station Chief, Ilam HPS, NEA**
Name and address of NEA's Representative	3.2	Medium Generation, Operation and Maintenance Department, NEA, Kathmandu
Performance Security Amount: Form:	4.4	As per ITB Clause 23 of the Bidding Document Security format Attached in Section 9
Time for the submission of Program	6.2	**Within 4 days after work order**
Liquidated Damages for Delay	6.4	0.05% of the Contract Price per day up to a maximum of 10% of sum stated in the Agreement
Period for notifying defects	8.1	365 days after completion date
Percentage of Retention	10.3	5% of each payment made to the Contractor
Advance Payment	10.5(a)	(Not applicable)
Deduction of Advance Payment	10.5(b)	(Not applicable)

A. INTRODUCTION

Nepal Electricity Authority (NEA), Generation Directorate, Ilam (Puwakhola) Hydro Power Station, intends to carryout repair and maintenance of miscellaneous civil works at Office cum Guest House, Head Tank and Power House Building and other structures located there on. The works shall be carried out according to this specification whether specifically mentioned elsewhere or not.

The goods and services applied under this contract shall meet the quality standards or equivalent standard in all respect of engineering design, manufacturing and application point of view.

These General, Material and standard Technical Specifications whether mentioned in this section or not, cover principles, responsibilities and requirements for items which are of general nature and which will be applicable to all civil engineering works pertinent to workmanship, materials and standards. They shall be read in conjunction with the Technical Specification, the Conditions of Contract, the Bills of quantities (BOQ) and the Drawings, if any. The bidders are requested to visit the site before bidding to access the exact site conditions, especially the intake area and power house.

1. Whenever the specifications are not given or when the specifications are ambiguous, the relevant **Nepalese standard or Indian Standard or British Standard** and further amendment will be considered as final and binding.

2. Nothing extra shall be paid for any item because of its shape, location, or other difficult circumstances, even if the schedule makes no distinction, as long as the scope of works has been stated here.

3. The source of material stated in the specifications is those from which materials are generally available. However, material not confirming to specifications shall be rejected even if they come from the stated sources. The Contractor should satisfy him that sufficient quantity of material of acceptable specification from the stated or other sources.

4. "Site Engineer" shall mean the engineer or other employees deputed by the Employer.

5. The requirements of the specifications under (A) General, (B) Materials shall be fulfilled by the contractor without extra charge i.e. the item rate quoted shall be deemed to have taken these specifications into account.

A) General

1. Office Accommodation and W.C. for Contractor:

The Contractor shall provide at his own expense adequate temporary accommodation facilities, if required for his workmen and keep the same in good order. This may be done to suit site condition with the approval of Site Engineer. The above-mentioned temporary structures shall be removed on the completion of work at Contractor's own costs. All materials shall belong to the Contractor.

2. Drawing, Instruction, Measurements:

All the engineering construction drawings, if any as required for work execution should be submitted by the contractor. All the works shall be done according to the drawing, if any and instruction of the site engineer and the contractor shall arrange to test materials and portion of the work at his own costs, if required in order to prove their soundness and sufficiency. If any

work and portion of work is found to be defective or unsound, the contractor shall pull down and re-execute the same at his own costs. The defective material shall be removed from the site.

3. Preparing and Clearing the Site:

The site all around the work area shall be cleared of all obstructions, loose stones, materials, rubbish and dirt of all kinds as well as bushes. No extra shall be paid for these except as stated in the BoQ.

4. Rate for Materials, Equipments and Labor:

The unit rates quoted by the contractor for the agreed works shall be inclusive of supply of materials, overhead as well as transport and unloading, storing, hire and use of the equipments and tools to be employed and cost of the wages of labor, local taxes and levies other than VAT, price escalation risk, loss, wastage, to fulfill all the duties and liabilities as specified in the conditions of Contracts.

All the works shall be carried out during normal working hours and the contractors shall responsibly supervise all the works. In special, if the works demand the continuous or further time requirements to execute and complete the works, even after it is late in evening or unfavorable condition, the contractor shall continue or execute the work with the approval and as directed by the Engineer even up to late or start at night in the Contractor's own risks and costs.

5. Work Execution Schedule:

The contractor shall submit detail work schedule, within 4 days from the date of agreement meeting the requirements of the Employer to complete the scope of Work within Seventy five (75) days from the date of agreement.

6. Variation:

The Quantity provided in BOQ are estimated only. Due to difference between the actual condition and the minor change in scope or minor design change, the quantity may be vary up to 5% of the total amount. The Contractor shall be not entitled to claim for any loss or profit due to such variations in quantity.

7. Quality of Works:

Materials, tools and plants and workmanship shall be the best of several kinds obtainable in the market and as approved by the site Engineer.

8. Leave Clean:

On completion, all works must be cleaned down, rubbish removed and the works and land cleared off rubbish, surplus materials, debris and other accumulations and everything left in a clean and orderly condition.

9. Sample:

Sample of any material as deemed necessary, shall be submitted by the contractor for the approval to the site Engineer. The Contractor will be required to perform all work under the contract in accordance with these approved samples.

10. Storage

Safe dry and proper storage shall be provided for all materials, particularly for cement and steel.

11. Curing of works:

Work requiring curing, if any, shall be carried under the direct supervision of site representative of Employer with contractor's own cost.

12. Electricity and Fuels:

The Contractor shall make his own arrangement for Electricity and other fuels such as diesel, petrol etc. that may be required for the execution of the works.

13. First Aid, Safety and insurance

The Contractor shall make best efforts to carry out the works in the safest way as far as practicable. Responsibility of arranging for treatment of casualties on the Site in such first-aid units as may be thought necessary lies to the contractor. The Contractor shall be responsible for the construction of such first aid units and their management and operation and the removal by ambulance of injured or sick employees to nearby hospitals. The first-aid and insurance services shall cover the Contractor's own personnel as well as that of the Employer, the Engineer and all Subcontractors. For any sorts of mishaps, accidents and death of persons at work or site, the responsibility of such shall be borne by the contractor.

Prior to the agreement of the contract, the contractor shall submit documents of insurances from registered insurance companies valid for the duration of work for construction of Metallic Staircase at Intake from start to completion for all no. of workers that is likely to be involved in the work that proves the insurance of workers related to the stated work under this contract.

Technical Specifications

1. Earthwork

1.1 Scope

Excavation shall be executed for bases, footings, grounds, foundation trenches and other underground works according to the drawings, Bill of Quantities or as directed by the Engineer.

Any increase or decrease of the excavated quantities resulting from alterations and as directed by the Supervisor and any change in composition will not affect the Contract as it's already approved unit rate. Hence rate shall be independent of the materials to be excavated.

1.2 Liability for

Notwithstanding any authorization, approval, or direction given by the Supervisor with regard to the excavation or any matter connected therewith, the Contractor shall be responsible for taking the necessary safety precautions and for any damage arising from the operation.

The sides of excavation trenches, pits for gabion & masonry walls etc. shall be protected if necessary in such a way as will be sufficient to maintain them from falling by providing timbering and propping etc. as per requirements.

1.3 General Requirements

The whole of the excavation both under water and in dry surface for the works shall be executed accurately to the dimensions, levels, lines and profiles of the designed structures indicated in the drawings and as directed by the Supervisor.

In case where bad ground occurs at formation level, such material shall be excavated and replaced by approved filling with full compaction as directed by the Supervisor up to the required level. The face and beds of all excavation whether in trench or in excavation to the required size shall be cleaned of all loose dirt and other debris.

The whole of the excavated materials shall be brought to the surface with sufficient leading as directed. Selected and approved materials from excavation suitable for backfilling etc. shall be kept separately for re-use if approved and instructed.

The method of all excavation and leveling of the sites shall be as per the approval of the Supervisor. No work on the excavated foundation should be executed, may this be soling work or concreting, until approved by the Supervisor.

Excavation taken wider than actually required for civil work shall be filled in with selected material thoroughly compacted in 150mm layers. Excavations taken deeper than required shall be filled in with the approved materials. Hence the actually required works to the exact depth, dimensions only shall be measured to the true line as per drawing or site instruction net. Any extra cut and then fill with material required due to negligence of the Contractor shall not be taken into account while measuring works. Nevertheless the extra work in excavation, filling with approved fill materials and concrete works on the Supervisor's direction shall be measured and paid with the rate as per Bill of Quantity.

1.4 Filling and Disposal of Excavated Materials

Backfilling to foundations, walls trenches etc. and general filling over the site shall be compacted in layers not exceeding 15 cm thick. Each layer shall extend over the whole width of the excavation before the next layer is spread.

All materials from excavation which are still surplus after re-using for filling and leveling shall be removed from the site and disposed off.

1.5 Stockpiles and Disposal

Excavated material selected by the Contractor and approved by the Supervisor for reuse shall be placed in its final position, or otherwise may be stockpiled or deposited on site as directed by the Supervisor.

Disposal of the excavated materials and unwanted deposits of any materials shall be done as shown in the drawing and as directed by the Supervisor on the Contractor's own cost. Waste shall be located in those places where they do not interfere either with the natural flow of water or with structures and where they cannot impair the general appearance of the completed structures, or impede access to the different structures.

1.6 Payment

The measurement for excavation shall be taken as cubic meter of the finished excavation as per the approved drawings. Payment for excavation for structures shall be at the unit rates per cubic meter approved in the Bill of Quantities separately for under water & in surface excavation. Such unit rate shall include the costs of all labor, materials and construction plant necessary for

excavation, placing the material in the spoil banks directed, disposing the unsuitable or surplus material, disposing ground & surface water excavated, and all the works necessary to maintain the excavation in good order during construction.

The measurement for filling shall be taken as cubic meter measured true to line as shown on the approved drawings or as directed by the Supervisor. Payment for filling and embankment shall be made at the unit rate per cubic meter approved in the Bill of Quantity, which unit rate shall include all costs of transportation of materials from excavation sites, from temporary stockpiles or from burrow area including handling if required, to place of final use, and the cost of placing material in layers, furnishing water, moistening or drying the materials and compacting the materials.

2. CONCRETE WORKS

2.1 General

2.1.1 Standards and Codes of Practice

All concrete work shall be carried out in accordance with relevant Nepalese or Indian or British Standard unless otherwise specified herein. Conversion of stresses and densities in kN shall be made using the following factor:

1 kN = 102.0 kg (force)

2.1.2 Failure to Meet Specified Requirements

If the specified requirements have not been met, the Contractor shall take such remedial action as the Supervisor or Supervisor's Representative may order, and shall, before proceeding further with concreting, submit for their approval details of the action proposed to ensure that the concrete still to be placed in the Works shall comply with the Specifications.

2.2 Materials

2.2.1 Cement

2.2.1.1 Quality and Type

The cement to be used in the Works shall be ordinary Portland cement complying in all respects with relevant standards. For the purposes of cement testing under relevant standards, the Site shall be deemed to have a tropical climate.

2.2.1.2 Delivery and Storage of Cement

Cement shall be delivered to the site in properly sealed bags or other approved containers, stamped with date of delivery and marked sound. Cement from abroad, except from Nepal/India, shall be packed in sealed plastic bags inside the paper bag. Cement shall be delivered in quantities sufficient to ensure the proper progress of the Works and the quantities held in stock on site shall be to the approval of the Supervisor.

Each consignment of cement shall be stored separately so as to provide easy access for inspection and testing. After they have been approved by the Supervisor, consignments shall be used in the order in which they were delivered. Any cement which shall prove to have been exposed to damage by water will be rejected upon delivery.

Cement delivered in bags shall be stored in a weatherproof, waterproof and reasonably airtight building provided solely for that purpose. The floors of the building shall be raised at least 30 cm above the ground level to prevent the absorption of

moisture. It is not permitted to store bags to a greater height than 2 metres. Storage in the open may be permitted on small works by the written authority of the Supervisor, in which case the cement shall be placed on a raised platform and amply protected by waterproof coverings to the approval of the Supervisor.

Cement, when being conveyed to the site in lorries or other vehicles, shall be adequately protected from the weather and from contamination by dust, sand or any organic materials. In the case of delivery of cement in bulk, the cement shall be stored in a properly designed silo. The silo must be provided with walls properly insulated against sun radiation.

No cement shall be taken from the storage, unless it is needed for immediate use and place for storage of cement safely shall be managed by the contractor.

2.2.1.3 Cement Measured by Weight

All cement used in the Works shall be measured by weight. Cement from partly filled or unsealed bags shall not be used.

2.2.2 Aggregates

2.2.2.1 Supply and Classification

The Contractor shall make his own arrangements for procuring, crushing, grading and delivering aggregate for the Works, as required from sources to be approved by the Supervisor. Separate fine and coarse aggregate shall be used for the manufacture of concrete. Aggregates shall be graded to produce a workable dense concrete.

(a) Coarse Aggregates

The term "coarse aggregate" is used to designate well graded aggregate mainly retained on a 5.00 mm, NS:305-2050 or IS:460 test sieve and mainly passing a 40 mm, NS:305-2050 or IS:460 test sieve. Coarse aggregate shall be supplied in the following primary sizes:

Size designation	Normal size range
10 mm 20 mm 40 mm	*5* mm to 10 mm 5 mm to 20 mm 5 mm to 40 mm

Coarse aggregate shall consist of natural gravel or crushed rock. Friable and flaky pieces such as mica and shale shall not be present. Coarse aggregates shall be well graded within grading given in Table 5.1 and to the satisfaction of the Supervisor.

Table 5.1: Percentage by Weight Passing Standard Sieves

Sieve Size (mm)	Size Designation		
	5 mm to 10 mm	**5 mm to 20 mm**	**5 mm to 40 mm**
50.0 37.5 20.0 10.0 5.0	- - 100 85 - 100 0 - 25	- 100 95 - 100 30 - 60 0 - 10	100 95 - 100 37 - 70 10 - 40 0 – 5

The aggregate shall be free from adherent coatings and shall, if necessary, be washed for this purpose and shall be free from sulphates.

Clay or silt lumps shall not exceed 0.25 per cent and material passing a BS sieve No. 200 shall not exceed 1.0 per cent, both by weight. The content of coal and lignite shall not exceed 0.5 per cent by weight.

(b) Fine Aggregates

The term "fine aggregates" is used to designate aggregate mainly passing a 0.075 mm, NS:305-2050 or IS:460 test sieve and containing only that much coarser material as is permitted for the various grading zones.

Fine aggregate shall consist of natural sand, or a mixture of natural sand and crushed gravel or crushed rock. The aggregate shall not contain any flint, chirt or lime. The quantity of silt, clay and dust, determined in accordance with the decantation method given in NS:305-2050 or IS:460, shall not exceed 3% by weight of the sample. The content of mica shall not exceed 3% by weight of the sample. The aggregate shall not contain any deleterious material in such form or in sufficient quantity as to affect adversely the quality of concrete.

The Supervisor shall permit the addition of crushed gravel or crushed rock fine aggregates to the natural sand only where, in his opinion, it is impracticable to obtain the required fine aggregate grading other than by such addition. The grading of the fine aggregates shall lie within one of the grading zones as set out in Table 5.2 and specified in BS 882.

Table 5.2 Percentage by Weight Passing Standard Sieves

BS 410 Standard Mesh	Grading Zone 1	Grading Zone 2	Grading Zone 3	Grading Zone 4
10.0 mm	100	100	100	100
5.0 mm	90 - 100	90 – 100	90 - 100	95 - 100
2.36 mm	60 - 95	75 – 100	85 - 100	95 - 100
1.18 mm	30 - 70	55 – 90	75 - 100	90 - 100
600 µm	15 - 35	35 – 60	60 - 80	80 - 100
300 µm	5 - 20	8 – 30	12 - 40	15 - 50
150 µm	0 - 10	0 – 10	0 - 10	0 – 15

2.2.2.2 Quality

All aggregates to be used in concrete shall be clean, hard, dense, sound, chemically inert, or limited porosity and uncoated particles free from clayey or organic matter. Aggregates for concrete shall comply with related codes and the following:

- Grading: in accordance with Tables 5.1 and 5.2 herein.
- Mechanical Properties: when tested, the "Ten per cent Fines Value" shall be not less than 50 KN.
- mica content test
- Silt, Clay and Dust Fraction: when determined in accordance with the decantation method given in BS 882:1992 Fines.
- Water Absorption: when tested in accordance with BS 812 Part 2 the water absorption after 24 hours shall not exceed 4%.
- Soundness: when tested in accordance with the sodium sulphate soundness test specified in ASTM C88 the aggregate shall have a percentage loss of less than 15.
- Alkali-Aggregate Reactivity: when tested in accordance with ASTM C 289 aggregates exhibiting evidence of alkali-aggregate reactivity will not be acceptable unless the Contractor can show that the proposed cement aggregate combination, when tested in accordance with ASTM C227 or other

tests, will not produce deleterious alkali-aggregate reactivity, as to which the Supervisor shall be the sole judge.

- Shrinkage: when determined in accordance with the BRE Digest 35 test the drying shrinkage shall not exceed 0.065%.
- Flaking Index shall not exceed 40.
- Elongation shall not exceed 40.
- Aggregate Crushing Value (ACV) shall not be more than 30%.

2.2.2.3 Washing and Screening

Aggregates shall be washed and screened as necessary, to produce aggregates meeting the specified requirements. All such washing and screening shall be to the satisfaction of the Supervisor.

Should mica be present in unacceptable quantities, its removal shall be effected by techniques approved by the Supervisor. The costs of all washing and screening shall be included in the unit rates for concrete in the Bill of Quantities.

2.2.2.4 Storage

Aggregates shall be stored in separate stockpiles in such a manner that the intermingling of materials from separate stockpiles or bins is not possible, and so as to prevent contamination by mud, rubbish, windblown dust or vegetation. Aggregate stockpiles shall be provided with adequate drainage to ensure rapid drainage of the aggregates. The storage arrangements shall be to the approval of the Supervisor.

2.2.3 Water

Water used in mixing and curing of concrete shall be subject to approval, and shall be reasonably clean and free of oil, salt, acid, alkali, sugar, vegetable or other substances injurious to the finished project.

-In no case shall the water contain an amount of impurities which will cause a change in the time of initial or final set of the cement of more than 30 minutes, nor a reduction in the compressive strength of mortar of more than 10 per cent at any time of testing, when compared to the results obtained with distilled water.

2.2.4 Water Cement Ratio

The maximum water cement ratios 0.4 shall be the ratios by weight of free water to cement in the mix based on the aggregates being in a saturated surface dry condition. Throughout concrete production the actual water cement ratio shall be strictly monitored and the batch quantities of aggregates and water regularly adjusted to maintain the design water cement ratio.

2.3 Placing and Compaction

2.3.1 Preparatory Works

The Supervisor's approval in writing shall always be obtained before any concrete is placed in the Works.

The formwork or area of disposition shall be cleaned as specified by supervisor.

All construction equipment and materials required, or which may be required, during the concreting work and for cooling and curing, shall be on site and fully prepared for the work. The Supervisor's approval to place concrete will only be given after all these preparations and other relevant requirements of the Technical Specifications have been carried out and complied with.

If concreting is to be executed at night or when otherwise daylight is not sufficient, the Contractor shall provide for sufficient lamps on site so that all elements of the site relevant for the concreting will be clearly visible.

Struts, stays and braces, serving temporarily to hold the formwork for structures in correct shape and alignment, pending the placing of concrete at their locations, shall be removed when the concrete placing has reached an elevation rendering their services unnecessary. These temporary members shall be entirely removed from the formwork and not buried in the concrete. If necessary and/or directed by the Supervisor, the Contractor shall cool any formwork that has become overheated or exceptionally dry through prolonged exposure to the sun. The Contractor shall ensure that all shuttering retains sufficient humidity content and does not become shrunken or warped. All soaking or spraying of shuttering shall be done with pure water. The Supervisor may forbid altogether the placing of concrete in any formwork which he judges has become too hot and/or dry and that concrete members cannot be satisfactorily produced there from.

No extra payment for cooling or soaking formwork shall be claimed, and costs incurred by the Contractor, due to shuttering becoming too hot or dry, shall be deemed to be included in the rates.

2.3.2 Depositing in Works

The methods of conveying and depositing concrete shall be such as to prevent segregation of the materials, and shall be approved by the Supervisor before concreting begins.

Concrete shall be deposited directly in the Works, without the need for rehandling, as soon as possible and not more than 20 minutes after mixing and, in any case, before the initial set has taken place. If any delay has occurred after mixing and the concrete has begun to set, it shall not be used in the Works and shall be removed from the Site. Normally, concrete for structures may be deposited at a maximum vertical height of 1.50 metres without the use of tubes, provided suitable measures are taken to prevent segregation and premature coating of upper reinforcing steel.

When placing operations involves dropping concrete from more than 1.50 m height, it shall be deposited through sheet metal slides or other approved pipes. As far as practical, the pipes shall be kept full of concrete during placing and their lower ends shall be kept buried in the newly placed concrete.

Concreting of any section or unit of the Works shall be carried out in one continuous operation and no interruption of the concreting will be allowed without the approval of the Supervisor.

When concrete is being placed, a competent steel fixer shall be in continuous attendance to adjust and correct the position of any reinforcement which may be displaced. The Contractor shall take care that during, and immediately after, depositing in the work of the concrete, the concrete will not be contaminated by dust, organic matter or other foreign material.

Transportation of concrete directly over the fixed reinforcement during the depositing shall not be allowed without proper provisions to avoid displacing or any other harm to the reinforcement.

2.3.2.1 Depositing in Layers

Concrete shall be deposited in approved quantities and in horizontal layers of such thickness as to permit thorough compaction, expel air and bond with the layers below.

However, in no case shall the thickness of the layer be deeper than 0.30 m. Each layer shall be placed and consolidated before the preceding batch has started it's initial set.

If, for unforeseen reasons, it is necessary to stop concreting before completion of the layer then construction joints as specified shall be formed and further concreting will be suspended for at least 24 hours.

2.3.2.2 Construction Joints

Construction joints shall be made only where located on the drawings prepared by the Contractor and approved by the Supervisor. Construction joints shall be formed as directed by site Engineer.

2.3.2.3 Curing of Concrete

Until a period of 7 days has elapsed from the time of placing the concrete, it shall be kept protected against loss of moisture, rapid temperature change, rain and flowing water, mechanical injury and contamination by airborne dust and/or sand. All methods to be used for curing and protection of freshly placed concrete shall be subject to the prior approval of the Supervisor. These methods shall include the use of curing membranes, watering, damp covers, shades and/or any other precautions that the Supervisor may require.

Curing membranes shall be sprayed on the surface of the concrete as soon as all free water has evaporated from the surface. In the case of forms that have been eased or struck before 7 days have elapsed from the date of placing concrete, the curing membranes shall be applied immediately after the shutter has been removed.

In the case rain falls on the newly coated concrete before the film has dried sufficiently to resist damage, or if the film is damaged in any other manner, a new coat of the solution shall be applied to the affected portions.

The Contractor shall submit details of the curing procedure he proposes to use, to the supervisor for his approval.

During very hot weather conditions, the Contractor may be required to cool and/or wet formwork containing concrete by spraying with water and this shall be carried out where directed notwithstanding and whatever other measures the Contractor may employ for the curing of the concrete.

All materials, spray equipment and an ample supply of water for curing shall be ready on site before any concreting starts.

The Contractor may submit for the Supervisor's consideration alternative methods of curing which will achieve a result at least as good as those specified, and the Supervisor shall approve or reject such alternative methods without any reason being given.

2.3.2.4 Faulty Work

Any portion of the work which is honeycombed or otherwise inferior shall, on the written instruction of the Supervisor, immediately be cut out and reconstructed in an approved manner without extra charge. Plastering of defective Works shall not be permitted.

2.3.2.5 Record of Concreting

All pre-cast concrete elements shall have the date of casting engraved on them before the concrete has fully hardened. Any undated elements may be liable to be rejected by the Supervisor. The Contractor shall take all measures necessary for the curing and protection of the elements after fabrication.

2.3.4 Measurement and Payment of Concrete

Measurement of concrete for payment shall be made only to the neat lines of the structures as shown in the Drawings or as established by the Supervisor. In measuring concrete for payment, the volume of all cavities, depressions, openings, embedded pipes, woodwork and metalwork, except reinforcement bars, anchor bolts and bars, shall be deducted.

Payment for concrete will be made at the unit rate per cubic metre for Items respectively of the Bill of Quantities. The unit rate shall include the cost of all labour and materials including water required in the construction, including furnishing and handling cement, curing and exclude the costs of furnishing and placing concrete forms and reinforcement bars which shall be made at the unit rate of as mentioned in the Bill of Quantities. No separate payment shall be made except for items expressed in Bill of Quantities for construction joints, grouting, and other incidentals and all costs in connection therewith shall be considered to be covered by the unit rate of concrete.

2.4 Formwork

2.4.1 General

Formwork shall include all temporary moulds for forming the concrete, including the 'herring bone' steel, together with all temporary structures required to support such moulds.

The Contractor shall submit drawings and calculations showing details of the formwork he intends to use, to the Supervisor for approval. The drawings and calculations shall be in accordance with the provisions stipulated in Sub-Clause 1.04.3 of these Technical Specifications.

The drawings shall show the materials proposed and indicate details of construction, such as sizes of members and spacing, and position of waling, struts, bolts and wedges.

Formwork shall not be constructed until the drawings and the calculations, if applicable, have been approved by the Supervisor. Such approval shall not relieve the Contractor of the responsibility for the sufficiency of the formwork. Any changes or modifications to the formwork required by the Supervisor shall be borne by the Contractor.

Formwork shall be of suitable design and substantial construction to carry the loads resulting from placing and vibrating wet concrete and any incidental loads such as construction loads, wind and other forces, without inadmissible bulging, distortion or deflection.

Formwork shall be sufficiently tight to prevent loss of water or mortar from the concrete. Special attention shall be paid to formwork where pokers or shutter vibrators are to be used.

2.4.2 Materials for Formwork

Formwork for the concrete structures shall be made from plywood.

The plywood shall be resistant to deterioration by water and shall be fixed and jointed in such a manner as to give a perfectly smooth and even finish to the concrete. It shall have a thickness of not less than 17.5 mm and shall be used in conjunction with good quality wooden planks.

Only with the approval of the Supervisor can formwork be made from good quality seasoned timber, free from loose knots, shakes and warped surfaces.

This timber shall not be less than 30 mm in thickness and the board faces in contact with concrete and the board edges shall be planed smooth and joints shall be tongued and grooved.

The Contractor shall submit to the Supervisor, before commencing construction, a set of forms complying with the above requirements, but such submission to the Supervisor or approval by him shall not relieve the Contractor of any of his responsibilities under the Contract for the successful completion of the structure.

2.4.3 Fixing of Formwork

Formwork shall be fixed in perfect line and true plane, with no crevices and joints, and shall be securely braced, supported and wedged so as to retain its position without displacement or deflection during the placing and compaction of the concrete.

Joints in formwork shall be made so that no leakage of grout can occur from the concrete. All joints shall be either horizontal or vertical, unless the form of the finished concrete requires them to be otherwise. Chamfers measuring 30 mm by 30 mm are to be made to all exposed edges of concrete, unless otherwise indicated in the Technical Specifications or ordered by the Supervisor.

Subject to the approval of the Supervisor, internal ties may be used. All such fastening shall be so arranged that when the forms are removed, no metal left permanently in the work shall be within 50 mm of any surface.

The use of wire ties for supporting the forms shall not be permitted in concrete walls which are to be subject to water, or when the finished surface, required as determined by the Supervisor, is to be permanently exposed; wire ties used for other concrete works shall be cut off flush with the concrete surface, after the forms are removed.

Connections shall be so formed as to permit the easy removal of the forms without hammering, etc., and without the necessity of levelling against the surface of the concrete.

Adequate access holes shall be left for the purpose of inspecting, cleaning out the forms and for placing and compaction of the concrete.

Scaffolding (if required) shall be firmly constructed to the satisfaction of the Supervisor. No separate payment shall be made for scaffolding.

Before placing any concrete, all bolts and the like (if required and which are to be built in) shall be fixed in their correct positions, and cores and other devices for forming holes, openings, etc., shall be fixed to the forms. No holes shall be cut in any concrete unless approved by the Supervisor.

Surfaces of the forms to be in contact with concrete shall be free from adhering foreign matter, projecting nails and the like, grooves, splits or other defects.

A non-staining commercial mineral oil or other approved material shall be applied to the faces of the forms before concreting to prevent adherence to the concrete. Care shall be exercised to prevent the material applied to the faces of the forms from coming in contract with the reinforcement, but if this should inadvertently occur, the reinforcement shall be cleaned to the satisfaction of the Supervisor.

When forms have been built and have been prepared ready for concreting, they will be inspected by the Supervisor and no concrete shall be placed until the forms have been approved by him. In order to avoid delays in obtaining approval, the Contractor shall inform the Supervisor, at least 24 hours in advance, of his intention to have the forms ready for inspection.

2.4.4 Dimensional Tolerances

Any deviation on the minus side in measurements of the finished concrete works is not permitted.

Unless specifically indicated on the duly approved Drawings, tolerances on the plus side can only be accepted up to a range of 4% at the most with a maximum of 5 mm.

2.5 Finishing of Concrete

Surface finishing shall be classified as follows:

- Ordinary finish;
- Wire Brush finish.
- Power Trowel finish

2.5.1 Ordinary Finish

If not otherwise specified, exposed surfaces shall be given an ordinary finish.

Immediately following the removal of forms, fins and irregular projections shall be removed from surfaces. On all surfaces, the cavities produced by form ties and all other holes, broken corners or edges, and other defects shall be thoroughly cleaned, and after having been thoroughly saturated with water shall be carefully pointed and trued with an approved non-shrinkable polymer modified cement mortar with at least the same qualities of the adjacent concrete. The concrete shall then be rubbed if required or cured. Construction joints in the work shall be left carefully tooled and free of mortar and concrete. The resulting surfaces shall be true and uniform.

Exposed surfaces not protected by forms shall be struck off with a straight-edge and finished with a wood float to a true and even surface. The use of additional mortar to provide a grout finish will not be permitted.

2.5.2 Measurement and Payment

Measurement of formwork for payment shall be in Sq m. Measurement shall be made only for the forms that have been used and approved by the Supervisor. Payment for formwork measured shall be made at the unit rate included on the Bill of Quantities. The unit rate shall cover the cost of furnishing all labourers, equipment and materials, erecting and removing the forms and scaffolding and all incidental costs necessary to complete the works to the required dimensions and shape, including chamfering in accordance with these Specifications and as instructed by the Supervisor.

2.6 Reinforcement Steel

2.6.1 Storage of Steel Reinforcement

Steel reinforcement shall be stored above the ground on platforms, skids or other approved supports, and shall be protected from mechanical injury and surface deterioration caused by exposure to conditions producing rust.

Different types and dimensions of reinforcement shall be kept separately.

2.6.2 Preparation of Reinforcement

The Contractor shall prepare, at his own expense, all detailed reinforcement and bending as directed by supervisor. may be required to facilitate fabrication and placement of reinforcement bars.

Reinforcement shall be submitted to the Supervisor for approval. Reinforcement as directed by Supervisor and bar lists prepared by the Contractor shall conform to the standard practices of the industry.

2.6.3 Bending of Steel Reinforcement

Steel reinforcement shall be cut from straight bars, free from kinks and bends or other damage, and bent cold by experienced competent workmen. Bar diameters greater than 19 mm shall be bent in a bending machine designed for the purpose and approved by the Supervisor. Any steel that has already been bent shall not be re-bent at the place of the previously made bend.

Dimension for bending shall be in accordance with the requirements as set out in IS, SF 24.

2.6.4 Placing Reinforcement Steel

The number, size, form and position of all reinforcement steel bars, fabric, ties, links, stirrups and other parts of the reinforcement shall be placed in exact position in accordance with the Drawings and kept in the correct position in the forms without displacement during the process of vibrating, tamping and ramming the concrete in place. The Contractor shall provide all necessary distance pieces and space bars at his own cost to maintain the reinforcement in the correct position.

Correct positioning will be achieved with the use of stays, blocks, ties, hangers or other approved supports. Blocks for holding the reinforcement from contact with the forms of adjacent reinforcement shall be precast concrete mortar blocks of approved shapes and dimension consisting of 1:2 cement/sand mortars. The Contractor shall provide evidence that mortar is of the same quality and density as the surrounding concrete. The water tightness of the mortar blocks shall be at least similar to the concrete into which they are concreted. The blocks shall be fitted with a semi-circular hollowing and double bent poured-in 16 gauges annealed steel wire. The use of pebbles, pieces of broken stone or brick, or other materials shall not be permitted.

Any ties, links or stirrups connecting the bars shall be taut, so that the bars are properly braced; the inside of their curved parts shall be in actual contact with the bars around which they are intended to fit. Bars shall be bound together with the best black annealed mild steel wire which is subject to the Supervisor's approval, and the binding shall be twisted tight with proper pliers. The free ends of the binding wire shall be bent inwards.

Before any steel reinforcement is embedded in the concrete, any scale, loose rust, oil, grease or other deleterious matter shall be removed. Partially set concrete which may have adhered to the exposed bars during concreting operations shall likewise be removed.

When the reinforcement has been placed and is ready for concreting, it will be inspected by the Supervisor, and no concrete shall be placed until the reinforcement has been approved by him. The Contractor shall inform the Supervisor at least 24 hours in advance of his intention to have the reinforcement ready for inspection.

2.6.5 Cover to Reinforcement Steel

The concrete cover to reinforcement shall be as shown on the Drawings, or as directed by the Supervisor. Unless otherwise specified as directed by Supervisor, the concrete cover on the steel reinforcement shall be at least 50 mm, if the concrete is subject to exposure to soil or water. In other cases a cover of 40 mm shall be acceptable.

The Contractor shall provide any necessary cement pads for ensuring that the cover is attained, and in no case may the use of pebble, pieces of broken stone or brick, or other packing materials be permitted.

2.6.6 Measurement and Payment of Reinforcement Steel

Measurement for payment of furnishing and placing reinforcement bars shall be made only for the weight of the bars placed in the concrete in accordance with the Drawing, or as directed by the Supervisor. Clips, ties, wastage, overlaps, spacer bars, annealed wire or other material used for positioning and fastening the reinforcement bars in place shall not be measured for payment. Only reinforcement bars in laps 40 times of bar diameter shall be included in the measurements for payment. Payment for furnishing and placing reinforcement bars shall be made at the unit rate per metric ton for the Bill of Quantities, which unit rate shall include the cost of furnishing reinforcement bars, furnishing and attaching wire ties and metal supports, if used, and of delivering, unloading, hauling, storing, sorting, cutting bending, cleaning, placing and securing, and maintaining in position all reinforcement bars, as shown on the Drawings, or as directed by the Supervisor.

3. STONE MASONRY

3.1 MATERIALS

Stone shall be of the type specified. It shall be hard, sound, free from cracks, free from decay and weathering and shall be freshly quarried from an approved quarry. Stones with round surface shall not be used.

The stones when immersed in water for 24 hours shall not absorb water by more than 5% of their dry weight when tested in accordance with IS : 1124.

The stone shall be hard, tough, sound and durable. Stone shall not be less than 15 cm and not more than 45 cm. Face stones shall be larger and uniform in size and color to give a good appearance.

Breadth of face stones shall be greater than the height. Face stones should tail into wall to a sufficient depth to bond well. Stone shall be laid with broader face downwards to give good bedding. Face joints shall be broken and face of wall shall be truly in plumb. Corner stone or quoins should be of good stones and dressed correct to angle and laid as headers and stretchers.

3.2 TYPE OF MASONRY

The type of masonry used for structures shall be random masonry (coursed or un-coursed) or coursed rubble masonry (First or Second sort). The actual type of masonry used for different parts of structures shall be specified in the drawings. If specified in the drawings, ashlar masonry shall be used for facing work.

The rubble stone shall be placed with 1:4 cement sand mortar after having joints thoroughly moistened. The surface joints shall be finished by flush pointing with 1:4 cement sand mortar. The ingredient shall be accurately gauged by measure and shall be well and evenly mixed together. No mortar that has been set shall be used. River sand shall be used unless otherwise specified. If hand mixing is allowed then it shall be done in masonry tanks. The gauged materials shall be put on the platform and mixed dry. Water will be then added and whole mixed again until it is homogeneous and of uniform color. Mortar shall be prepared in such quantity, at one time, which shall be consumed within half an hour of its mixing. The work shall be well watered for a fortnight.

3.2.1 Joints

Joints shall not be thicker than 19 mm. Face joints shall be thinner. Interstices, if any may be filled with pieces of spalls of stones embedded in mortar. Not more than 60 cm height of masonry shall be constructed at one time.

3.2.2 **Bond Stone**

Through bond stones of one piece shall be provided one for every 0.5 m^2 (5 sq. ft.) of face. For walls thicker than 75 cm bond stones may be of two pieces placed side by side over lapping at least 25 cm. Breadth of lap stones shall not be less than 1.5 times the height. All stones shall be thoroughly wetted before laying. At the end of day's work masonry shall be flooded with 2.5 cm water at the upper surface with the help of fillets of mortar about 38 mm high, made round in edges.

The masonry shall be protected from sun, rain, frost and other weather effect.

3.2.3 Payment

Measurement for payment of Stone masonry works is included in the per cubic meter rate of boundary wall. The price shall include all labors, equipment, materials and all other cost necessary for the performance and completion of the works.

3.2.4 Backfill:

The Contractor shall place and compact the backfill materials to the lines, grades and dimensions to be shown on the approved drawings. The materials to be used for backfill, the amount thereof and the manner of depositing the materials shall be approved by the Employer.

3.2.5 Payment:

Measurement for payment of earth works is included in the per meter rate of boundary wall. The price shall include all labors, equipment, materials and all other cost necessary for the performance and completion of the works.

3.3 Stone Soling

Stone soling shall be carried out as shown in the drawing or as instructed by the site Engineer. Stone for soling shall be laid without leaving any holes or gaps between the stones.

Stones shall be similar to the one prescribed in stone masonry.

Small chips and spall shall be inserted in such gaps. After laying the soling layer it shall be rammed properly. Stone to be used for boulder soling shall be hard quarry stone. Soft stone shall not be used.

Payment

Payment of 'Soling work' shall be made on the basis of actual constructed volume of soling work in cubic meter. Payment shall be made for the number of cubic meter measured as per unit rate quoted in the Bill of Quantities. The unit rate shall include full cost of labor, tools/equipment, materials and all other costs necessary for the performance and completion of the Works in the workmanlike manner.

4. BRICKWORKS

Brickworks shall be carried out using the local bricks in 1:4 cement mortars.

All bricks shall be laid in an appropriate bond and such work shall be even and true to line, plumb and level. All joints shall be kept accurately. The bricks used on the face shall be of complete ones with uniform size and true rectangular face.

Bricks shall be laid with frogs up, if any, on a full bed of mortar. When laying, bricks shall be slightly pressed so that the mortar could get into the surface pores of bricks to ensure

proper adhesion. All joints shall be properly flushed and packed with mortar so that no hollow spaces are left.

When laying bricks in foundation, a layer of not less than 12 mm of mortar shall be spread over the base on which the brick work will be laid even. Immediately after the placing of mortar, the first layer of bricks shall be laid.

The brick work shall be built in uniform layers. All corners and other advanced work shall be raked back. Brick work shall be done true to plumb or in specified batter. To avoid unequal settlement and improper jointing during construction, no part of the brick work shall rise more than one meter above the general construction level planned for the day's work. Toothing may be done where future extension is contemplated but shall be used as an alternative to raking back.

JOINTING WITH EXISTING STRUCTURES

When fresh masonry is to be placed against the existing surface of structures, the surfaces shall be cleaned of all loose materials; roughened; and wetted as directed by the Supervisor in order to ensure an effective bond with the new work.

CURING

Green work shall be protected from rain by suitable covering. Masonry work in cement or composite mortar shall be kept constantly moist on all faces for a minimum period of seven days. The top of the masonry work shall be left flooded with water at the close of each day's work. During hot weather, all finished or partly completed work shall be covered or/and wetted in order to prevent any rapid drying of brick work.

SCAFFOLDING

The scaffolding shall be sound and strong enough to stand for all loads which might come on it. The holes which are created in masonry to provide resting space for horizontal members shall not be left in masonry under one meter in width or immediately near the skew backs of arches. Such holes shall be filled and made good as quickly as possible.

CONDITION OF EQUIPMENT

All equipment used for mixing mortar and for transporting of mortar and bricks shall be cleaned and kept free from set mortar, dirt or injurious foreign substances.

5. PLASTER AND POINTING WORK

Scope

This Section covers furnishing of materials and construction of different grades of plaster works in accordance with the BOQ, Drawing and this Specification or as directed by the Engineer.

Plastering shall be made up of mortar consisting of cement, sand in the different proportion as indicated in the BOQ as specified in the drawing.

Material

Cement shall be fresh and free from impurities and as specified in clause 413, river bed sand shall be used. Sand for plastering shall be finer than the sand used for concreting or stone work. Following shall be proportion of different size of grains.

Grain Percent

0 to 0.5 mm = 30%

0.5 to 2 mm = 50%

2 to 3 mm = 20%

Water shall be clean and free from pollution by soil particles, humus, mud, dirt, natural or vegetable oil, soap and other impurities.

Construction Procedures

The surface to be plastered shall be brushed clean mortar joints of brick masonry or hollow concrete walls or any other surface to be plastered shall be raked to a depth of approximately 12mm, and the surface brushed down with a stiff brush and thoroughly wetted. The surface shall be free of all dust, loose materials, grease etc.

The mortar shall be first dry mixed, by measuring with boxes to required proportion, and then water added slowly and gradually and mixed thoroughly to uniform consistency.

The thickness of the plaster shall not be less than 12 mm not more than 20mm. In case of plaster thicker than 20mm, it shall be built by two or more coats each coat not exceeding 12mm in thickness.

Cement shall be as specified above.

Sand shall be as before specified but shall be graded to a suitable fineness in accordance with the nature of the plaster, etc., in order to obtain the finish required.

Lime for plastering shall be as before described in clause 414 and slaked and run at least four weeks before use.

All other mixes shall be constructed in a like manner.

Moist curing shall be accomplished by keeping the plaster uniformly damp by suitable means. Moist curing shall start during application and continue for not less than 7 days.

Samples

The Contractor shall prepare sample square meter of the plastering and paving as directed until the quality, texture and finish required is obtained and approved by the Project Engineer after which all plastering or paving executed shall conform with the respective approved sample. No payment shall be accounted for such sampling.

Finish

Care shall be taken to insure that finished plaster surfaces shall be plumb, square, straight and true to line.

Generally all screeds and paving shall be finished smooth, even and truly level (unless specifically required to falls and currents, etc.), and paving shall be steel troweled or floated.

Rendering and plastering shall be finished plumb, square, smooth and even.

All surfaces to be plastered shall be thoroughly wetted before any plastering is commenced and the Contractor shall allow in his prices for dusting external angles with neat cement to give additional strength.

No plastering will be allowed to take place until all chases for service have been cut, services installed and chases made good. On no account may finished plaster surface be chased and made good.

All Work shall be to approval and any not complying with the above shall be hacked away and replaced, as directed, and at the Contractor's expense.

Arises and Angles in Plastering

All arises shall be clean and sharp or slightly rounded as directed.

All making good shall be cut out to a rectangular shape, the edges undercut to form dovetail key and finished flush with face of surrounding plaster. All cracks, blisters and other defects must be cut out made good and the whole of the paving and plastering Work left perfect on completion.

Screeds shall be in cement and sand (1:4) and rates shall include for thoroughly hacking, cleaning and soaking the receiving structure in water. No creed shall be laid on a dry structure in any circumstances.

Where changes of floor finish occur they shall be divided by strips as specified.

The Contractor's special attention is drawn to the fact that all screeds, immediately after the initial set has taken place, will be required to be continuously covered in water by the sand trap or other approved method for at least 10 days. Any screed panel that is found to be dry before the end of this period shall be removed at the discretion of the Project Engineer.

Waterproofed external rendering shall consist of minimum 12mm cement and sand (1:4) rendering at the rate of 2.05 liter to 41 kgs of cement all in accordance with the manufacturer's instructions and finished perfectly true and even with a wood float.

External Plastering and Rendering:

Waterproofed External Plaster or Rendering work shall consist of minimum 12.5mm to 16mm as detailed in the Bill of Quantity with cement/ sand ratio 1:3 or 4 at the rate of 1/2 gallon to 90 lbs of cement all in accordance with the manufacturer's instructions and finished perfectly true and even with a wood float.

Internal Plastering and Rendering:

Internal Plastering or Rendering shall consist of minimum 12.5mm to 16mm as detailed in the Bill of Quantities with cement/ sand ration 1:3, 4 finished perfectly true and even with a wood float.

6. Punning works

Materials

The materials required for punning and pointing works are cement, sand and water and shall be in accordance with the requirements of clause 1002. Any foreign or other chemicals/materials as provided by the employer or NEA shall be applied by the contractor with no extra costs.

Construction Procedures

Before applying the punning, the base surface shall be cleaned, any dust or loose particles removed and thoroughly wetted. The surface shall be free of all dust, loose materials, grease etc. The average thickness of the punning work shall not be less than 3 mm. The pattern shall be as per instruction of the Engineer or as shown in the drawings.

The mortar shall be first dry mixed, by measuring with boxes to required proportion, and then water added slowly and gradually and mixed thoroughly to uniform consistency.

The coat shall be finished by rubbing with a steel trowel and any depression shall be filled in and rubbed to shining surface.

Cement shall be as specified above.

Sand shall be as before specified but shall be graded to a suitable fineness in accordance with the nature of the plaster, etc., in order to obtain the finish required.

All other mixes shall be constructed in a like manner.

Moist curing shall be accomplished by keeping the plaster uniformly damp by suitable means. Moist curing shall start during application and continue for not less than 7 days.

Measurements

Measurement of works will be made in m^2 of works as specified.

Payments

Payment for work will be made on the basis of contract unit price indicated in the BOQ.

The payment will be full and final compensation for all material, labor, and equipment to complete the works as specified.

7 Mild Steel Grill for staircases and grill structures

Material

The Mild steel grills are fabricated from the Mild Steel flat, angle and channels conforming to the BS 15 or equivalent. The welding shall be butt-welding conforming to sub clause 170.1
The grips are of plastic or metal. The screws shall be steel screws.

Construction Procedures

The mild steel grill shall be made according to pattern given as per drawing. Welded joints shall be neatly made, filled smooth and left clean, the consultant is to be informed when the welded work is ready for inspection and any such work must be left unprimed until the consultants gives his approval. The contractor shall furnish at his own expenses all necessary tools and all materials, which he may require for the safe erection of the work and remove the same when the work is completed. The contractor shall be solely responsible for any damage due to the structure during erection and any member, which has been bent or otherwise distorted either before or during erection, shall be straightened or replaced in an approved manner at his own expenses. The grillwork shall be finished with one coat of red oxide followed by two coats of aluminum or enamel paint and fixed in the opening, as per instructions of the engineer. If the quantity of Grill and other MS materials are insufficient or deficit as stated in the BoQ for the intended purpose, Employer or NEA shall provide the materials and it shall be fixed/fabricated without no extra cost to the employer. The material shall not exceed the scope of the particular work. The staircases shall be anchored to the existing concrete structures by means of suitable drilling and fastening by anchor bolts.

Testing and Inspection

The erected fencing shall deform any post and wires shall be straight without sagging.

Measurement

The above work shall be measured in m^2 of opening in vertical plan completed as specified.

Payment

Payment for the work will be made on the basis of contract unit price indicated in the BOQ.
The payment will be full and final compensation for all material, labor, and equipment to complete the works as specified.

8 Wood Work

Woodwork in frame of doors, windows, ventilators etc. with good finish of approved well seasoned local hard wood including fixing with necessary hold fast etc. all complete.

Timber

Timber to be used for the work shall be form the heart of a sound tree of mature growth, the sapwood being entirely removed. It shall be uniform in substance, straight in fibre, free from large, loose, deed or cluster knots, flaws, shakes, wasp, cup spring, twist, bends and defects of any kind. It should be free from spongy, brittle, flaky or brushy condition, sapwood and barer holes.

All timber shall be seasoned and be free from decay, rot, harmful fungi and insect attacks and from any other damage of harmful nature which will affect the strength, durability, appearance or its usefulness for the purpose for which it is required.

The timber shall be of best quality timber as specified in the item. The samples of the approved timber to be used shall be deposited in the office of the Site Engineer for the purpose of comparison.

The color shall be uniform as far as possible, the darkness of color amongst color species of timber being generally a sign of strength and durability. The moisture content for timber shall not exceed 12 percent of dry weight of timber. As soon as the foundation of buildings

are laid all necessary timber scantlings shall be brought to site and stacked and kept under cover and allowed to remain till required.

Payment

Payment for Wood work shall be measured in cubic meters on the basis of contract unit price indicated in the BOQ.

9 ROOFING

Corrugated Galvanized Iron Sheet (CGI Sheet) Roofing

The corrugated iron sheet shall be of the gauge 26 B.G. The sheet shall be free from rust and the zinc covering at the time of fixing shall be in perfect condition.

Each sheet shall be laid on steel tubular truss fabricated from 2" diameter medium type MS pipe, primered with red oxide with an end overlap of 15cm minimum of as per drawing and side overlap of two corrugations. The sheet shall be joined together with galvanized hook bolts of L type of 8mm diameter, with bitumen and limpet washers. L hook shall be fixed at 30cm interval along bearer and 60cm along edge. Each bolt shall have "limpet" dome washer in addition to bitumen washer.

Wind ties of 4cm x 6mm flat iron weighing about 0.6kg/linear meter shall be fixed at the eaves ends of the sheets fixing the same with purloin by L hook bolts at 1.2m centre to centre distance.

Ridge and hips shall be covered by special ridges and shall be bolted with 30cm lap on either side so as to prevent the rain driving under it.

Holes in sheets shall be made on the ground; the sheets shall be placed on trestles and holes punched in the ridge of corrugations from below upward.

Unnecessary holes made on the roof shall be rejected in total.

Measurement shall be taken for the complete wide roof in square area flat superficial area, not gritted. Wind ties shall be measured under seaport items.

Ridges shall be measured in running meter.

10 Aluminum Windows and Doors Frame, Shutters and Grips

Material

These shall be fabricated from 15 micron natural or color anodized Aluminum profiles conforming to IS: 733-1983.

The glazing glass shall be clear IAG float glass or equivalent without any distortion.

The window shall be made out of extruded aluminum section (Al. Mg. Si.) and shall conform to IS – 63400, AA-6063 unless otherwise directed. Aluminum sections shall be anodized and the anodic film shall be 12-15 microns. The colors shall be as directed. The 2-3 tracks on outer frame of standard size otherwise directed shall be fixed in the position by using heavy duty plastic grips with necessary plugs and fillers. All the sliding shutters shall be provided with two ball bearing rollers and ratting pieces/guides one each at the top and bottom, weather strips all around. Openable window shall be double weather stripped, one strip shall be provided in outer frame and outer shall be in the shutter frame. The hinges or stay hinges of openable window shall be strong. Pin of the hinges shall be of non-corroding materials, preferably nylon/steel. All the joints shall be mechanically fixed. The entire window shutter shall be provided with special locking arrangement. Glass shall be fixed in the shutter by means of rubber gaskets.

Construction Procedures

The sliding window frames are of two-track design and the shutters are to be joined by special cleats for extra strength. Rollers mounted on ball bearings are to be fitted to obtain

smooth operation. The sliding shutters shall have provisions for grooves for weather strips to exclude wind, water or dust ingress. The shutters are glazed with 4mm thick approved quality and clear transparent glass using gaskets of ethylene- propylene or PVC (EPDM/ PVC). The doorframe shall be made of aluminum extrusion as per design. The ventilator frames with fixed glass shall be of same dimension as the sliding two-track frame. The frames and shutters are to be fabricated by using the crimping method of corner jointing. Corners of frames are to be miter cut on high speed TCT saw machines to give burr free corners. Sturdy corner cleats should hold the frames with only a hairline corner joint visible and the frames should be square/ rectangular and free from distortions. The frames shall be firmly secured to the walls in line and level. Only aluminum screws shall be used for joining and no welding will be allowed. The joint between the frame and the plaster on walls, sill and lintel beam shall be filled with silicon sealant. The aluminum windows/ ventilators/ doors shall be free from scratches and other visible defects.

The frames are fixed to the wall with plastic grips and steel screws of suitable color.

The doors shall be casement doors with one way openable with laminated boards 9mm thick while the windows shall be sliding windows without flymesh. Grips/seals shall be fixed between the existing windows frame and replaceable clear glass, the scope of which has been stated in the BoQ. Clear Glass shall be 4mm thick minimum for all the stated woks under this contract and it shall be fixed by means of plastic or wooden beat as required and as per the instructions of supervisor.

Measurements

Measurement of works will be made in m^2 of works as specified.

Payment

Payment for work will be made on the basis of contract unit price indicated in the BOQ.

The payment will be full and final compensation for all material, labor, and equipment to complete the works as specified.

11 Ply board, GI Plain sheet and Sun mica / fore mica fixing works

Ply boards 6mm thick shall be fixed and GI plain sheet 24 gauge shall be fixed over it at backside for the existing wooden shelf at power house and sunmica/ fore mica shall be fixed as per the design of the shelf/rack and as per the instructions of supervisor.

Measurements

Measurement of these works will be made in Lot of works as specified.

Payment

Payment for work will be made on the basis of contract unit price indicated in the BOQ.

The payment will be full and final compensation for all material, labor, and equipment to complete the works as specified.

12 FLOORING/GRANITE WORKS

Scope

This Section covers furnishing of materials and construction/finishing of different types of flooring works or Granite works in accordance with the BOQ, Drawing and this Specification or as directed by the Engineer.

Dressing of Flooring:

Dressing (Surface Grinding) of existing Mosaic surface of Toilet Bathroom shall be carried out as per the instructions of supervisor which is a part of repair and maintenance works. The dressing shall be carried out using mosaic/marble dressing/polishing equipment. Granite works on the existing nameplates and smarika shall be repaired supplying the same

quality/type and color of granite/marble as the existing one. In case the same quality/type/color granite is not available, the contractor shall cautiously dismantle the granite from other existing smarikas located within the power house and fix them so as to complete one smarika completely. For the remaining smarika, contractor shall, at no extra cost, to the employer supply terrazzo tiles and fix them as per the instructions of supervisor, to completely finish the particular smarika, and liability to the contractor shall not be more than one smarika for this purpose.

Measurement will be made in m^2 for granite works and Lot for the dressing works as specified.

Payment

Payment for work will be made on the basis of contract unit price indicated in the BOQ.

The payment will be full and final compensation for all material, labor, and equipment to complete the works as specified.

13 Miscellaneous items

Scope

This Section covers furnishing and fixing of materials at site for the intended purpose of each material as directed by the Engineer.

Items included in this category:

i. Kabjas
ii. Toilet Sanitary fittings and accessories
iii. Mosquito net and expended metal wire mesh
iv. Door Spring
v. Other items required under this contract

Specifications of all these materials shall be as stated in the BoQ and best quality available in the market shall be supplied for works under this contract. Before installation, the items shall be approved by the Engineer and payment shall be made as per the completed works on the basis of contract unit price indicated in the BOQ.

14 SITE CLEARANCE PRIOR TO AND AFTER WORKS

All the sites shall be cleared after works and no extra shall be paid for this. It is assumed that the prices in each item of BoQ has been made to satisfy this purpose. Payments of the bills under this contract shall only be made after the sites have been cleared off.

Section VII
BILL OF QUANTITIES

PREAMBLE

. 1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specification, Tender and Appendices, and Drawings. (NOTE: The Bill of Quantities, Form of Unit Rate Analysis, and Appendices, Exhibits and Annexure to the Tender form part of the Tender.)

2. The unit rates and amounts in the Bill of Quantities (comprehensively referred to as the Unit Rates) shall except in so far as it is otherwise provided under the Contract be deemed to cover all obligations set out in the Contract and all matters or things necessary for the proper completion and maintenance of the works.

3. Each item shall be priced by the Contractor including the items to which no work quantities are given. If the Contractor omits to quote any item in the Bill of Quantities, the cost of the items shall be deemed by other unit rates and amounts.

4. The Contract Price of the entire work shall accumulate the amounts computed from the quantity of works and the unit rate bid for the respective items in the Bill of Quantities.

5. The Quantities set out in the Bill of Quantities are provisional and cover the approximate scope of the works which may be required to perform. The actual quantities will be determined by the Supervisor by measurement of the work completed by the Contractor.

6. The bidder shall ensure that his tender price and unit rates are well balanced and that no section of the Bill of Quantities is heavily priced to cause lower price in another section. The NEA reserves the right to balance the tender price and unit rates before acceptance.

7. The Contractor shall have no claim for any further payment in respect of any method of execution which may be described or implied in the Tender Documents. The unit rates quoted shall be deemed to be applicable to any method of execution.

8. The NEA shall be exempted from any measurement, estimate or certificate made either before or after completion and acceptance of the work and for payment there from showing the true amount and character of the work performed and materials furnished by the Contractor, from showing that any such measurement, estimate or certificate is untrue or is incorrectly made and that the works or materials do not in fact confirm to the Contract.

9. The Bill of Quantities priced are a part of the Form of Tender and Contract Documents. All prices shall be stated in Nepalese Rupees (NRs.). The “Unit Rate” and “Amount” Columns shall be quoted in both figures and words. If some discrepancies in Unit Rate and Amount occur, the Unit Rate shall prevail. If some discrepancies in words and figures occur the words shall prevail.

10. The following are the list of abbreviations.

cu.m or m^3	.....	Cubic meter
sq.m or m^2	.....	Square meter
Lin.m	.....	Linear meter
Nos.	.....	Numbers
km.	.....	Kilometer
NRs.	.....	Nepalese Rupees
kg.	.....	Kilogram
ton	.....	Metric Ton=1000kg.
dia.	.....	Diameter
%	.....	Percent
L.S.	.....	Lump Sum
P.S.	.....	Provisional Sum
R.M.	.....	Running Meter
G.I.	.....	Galvanized Iron

NEPAL ELECTRICITY AUTHORITY

(Government of Nepal Undertaking)

Medium Generation Operation and Maintenance Department

Ilam (Puwakhola) Hydropower Station, Ilam

BILL OF QUANTITY

Job: Miscellaneous Civil Repair and Maintenance Works **S.Q. No.: NEA-IHPS-2074/075-CQ/09**

Item No.	Description of Works	Unit	Quantity	Unit Rate NRs. (In Figures)	Unit Rate (In Words)	Total Amount NRS
1.	Excavation of hard clay & Soils mixed with soft moorum stones (up to 30 cm size) including disposal (up to 10m lead & 1.5m lift)	Cum	18.68			
2.	Stone soling in foundation and leveling lead upto 30 meter around.	Cum	6.49			
3.	Concrete works of Super structure, deck, beams, including supply of materials and haulage up to 30m (P.C.C. for R.C.C.- 1:2:4)	Cum	7.51			
4	Chimney brick masonry at first floor by Local brick in cement mortar (1:4) leading upto 30 m	Cum	14.78			
5	Filling with ordinary soils in 15cm.thick layers and hand compaction (haulage distance 10m)	Cum	12.29			
6	12.5 mm th. Cement sand plaster 1:4 on wall and floor	Sqm	118.47			
7	Dismantling work of P.C.C. or B.C. And lead upto 10 mt. Around.	Sqm	5.15			
8	Dismantling work of Cement Plaster	Sqm	106.13			
9	12.5 mm th. Cement sand plaster 1:2 on floor and wall	Sqm	207.58			
10	3 mm th. Cement punning work on wall and floor	Sqm	179.58			

11	26 gauge (0.41 mm) C.G.I. Sheet roofing work with Plain C.G.I. Sheet.	Sqm	66.60			
12	Providing and fitting Steel tubular truss for roofing all complete with red oxide paint	kg	774.83			
13	Aluminum framed Sliding windows with ventilator but without fly mesh shutter in the section of 88x38x1.30 with anodized color including 5mm thick glass (5.5 kg per sqm)	Sqm	3.20			
14	Replacement and maintenance of Kabjas of Existing 1 no. Aluminum framed double panel door as per office instructions	Lot	1.00			
15	Replacement and maintenance of Rubber seals with new one of Existing Aluminum framed minimum 6 nos sliding windows as per office instructions	Lot	1.00			
16	Fixing and replacement of clear glass 4mm on minimum 2 nos existing Aluminum framed sliding windows size 155cmx40cm and 155cmx60cm as per as per office instructions	Lot	1.00			
17	Dressing (Surface Grinding) of Existing Mozaic floor surface of Toilet/Bathroom and Temple as per office instructions	Lot	1.00			
18	Fixing of commercial ply board 6mm and GI/aluminum sheet over it on one side and sun mica pasting on the front side of wooden cupboard as per existing design as per office instructions	Lot	1.00			
19	Supply or Fabrication of MS grill staircase using MS angles and strips all complete with red oxide as per the instructions of supervisor	Kg	58.00			
20	Granite works (on the existing nameplates and smarika repair as per office instructions)	Sqm	3.40			
21	Cutting, Bending, placing in position and binding by G.I. wire for reinforcement steel bars for R.C.C. works including haulage distance of 30m	kg	743.38			

22	Supply and fitting 580 mm size Orissa or equivalent. pan with low level cistern complete set	Set	2.00			
23	Supply and Fitting of 4" PVC Pipe, Gas pipe and cover and other necessary sanitary items	Lot	1.00			
24	Supply and fitting of Toilet ring	Nos	3.00			
25	Aluminum framed casement Door (One -Way Openable) with anodized color (Aluminum :- 101mm x 45mm x1.5mm, Glass 5mm clear, or board : 9mm Laminated (7.3 kg per sqm)	Sqm	1.14			
26	24 gauge G.I. Mosquito net fixing with beat (for window)	Sqm	263.99			
27	Making and fixing 4mm thick Glazed shutter in 38* 75mm th. Local hard wood frame (Shutter size = 1.829x1.22=2.23 sqm)	Sqm	7.20			
28	Making and Fixing 24 gauge G.I. Plain sheet shutter both side with 38mm thick Local hard wood frame (shutter size = 1.092x2.058=2.245 sqm)	Sqm	3.18			
29	**Providing and fitting MS channel structure all complete with red oxide paint for staircase at intake**	kg	130.00			
30	**Providing and fitting MS Staircase with working platform and safety cover all complete with red oxide paint as per office instructions at intake**	kg	415.00			
31	6 mm th. Commercial plywood fixing by plastic beat in wooden frame	Sqm	48.70			
32	4 mm glass fixing on chaukhat with PVC/Plastic beat or wooden beat	Sqm	7.09			
33	G.I. plain sheet 26 gauge fixing on chaukhat with plastic beat	Sqm	18.23			

34	Supply and fixing Door spring 12"	Nos	8.00			
35	24 gauge G.I. Mosquito net fixing with Expended metal wire mesh and beat (for door)	Sqm	49.80			
36	38 mm th. Local hard wood framed G.I. Mosquito net wire with Expended metal with mesh fixed shutter making & fixing (for door)	Sqm	3.18			
37	38 mm th. Local hard wood framed G.I. Mosquito net wire mesh fixed shutter making & fixing (window)	Sqm	3.78			
38	26 gauge (0.41 mm) C.G.I. Sheet roofing work making ridge	Sqm	32.90			
39	0.35 mm G.I. plain Sheet Ridge or Gutter works	Rm	7.00			
40	Providing and fitting MS Grill with hinge all complete with red oxide paint	kg	15.40			
41	Concrete works of Super structure, deck, beams, including supply of materials and haulage up to 30m (P.C.C. for R.C.C.- 1:1.5:3)	Cum	3.73			
42	Expended metal wire mesh fixing on wall	Sqm	34.38			
43	Random Rubble stone masonry with hard block stone in cement mortar (1:4) lead upto 10metre around.	Cum	0.63			
44	Local hard wood work in Chaukhat	Cum	0.07			
45	Local hard wood work in Beam, Truss, Rafter, purlin	Cum	0.09			
46	75mm th. (1:2:4) P.C.C. work for flooring with cement punning	Sqm	3.52			

47	Supply and placing of Sanitary fittings	LS	1.00			
48	Supply and Fixing, nailing as per instructions, placing separators and dismantling Wooden formworks including haulage upto 30m distance	Sqm	88.62			
49	Concrete works of Super structure, deck, beams, including supply of materials and haulage up to 30m (P.C.C. for R.C.C.- 1:1:2) at intake	Cum	10.06			
50	Provision of making coffer dam and Pumping out water before concreting works at Intake	Job	1.00			
51	Supplying and Placing of kitchen Sink, PVC pipe, Stainless steel bib cock and accessories	Set	1.00			
52	Dismantling of Cement stone masonry or brick masonry and removing the wastage material upto 10m distance	Cum	0.27			
53	Supplying and placing about 6 meter length 4" PVC pipe under soil	Job	1.00			
					Sub Total:	
					13 % VAT:	
					Grand Total:	
Grand Total Amount in Words NRS. :-						

SECTION IX
FORMS OF SECURITIES

BID SECURITY FORM

Date:

To: Nepal Electricity Authority
Ilam Hydro Power Station
Golakharka, Ilam
Nepal

Contract: **Miscellaneous Civil Repair and Maintenance Works**

Quotation ID: **NEA-IHPS-2074/075-CQ/09**

Whereas [*name of bidders*] (hereinafter called "the Bidders") has submitted its Bid dated [*date of bid*] for the performance of the above-named Contract (hereinafter called "the Bid").

Know all people by these presents that We [*name of bank*] of [*name of country*] having our registered office at [*Address of Bank*] (hereinafter call "the Bank"), are bound unto Ilam Hydropower Station, Nepal Electricity Authority, Ilam (hereinafter called "the NEA") in the sum of [*Amount of the Guarantee in Words and Figures]*, for which payment well and truly to be made to the said NEA, the Bank binds itself, its successors and assigns, by these presents.

Sealed with the Common Seal of the Bank this _____ day of _____, 20___.

The Conditions of this obligation are:

1. If, after bid opening, the Bidder withdraws its Bid during the period of bid validity specified in the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its Bid by the NEA during the period of bid validity:
   (a) fails or refuses to sign the Contract Agreement when required; or
   (b) fails or refuses to issue the Performance Security, in accordance with the Instructions to Bidders:

We undertake to pay to the NEA up to the above amount, according to, and upon receipt of, its first written demand, without the NEA having to substantiate its demand, provided that in its demand the NEA will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two above-stated conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including [date 90 days after the closing date for bid submission], and any demand in respect thereof should reach the Bank not later than such date.

(NAME OF BANK)

by _____
(*Title*)
Authorized Representative

PERFORMANCE BANK GUARANTEE

To: Nepal Electricity Authority
Ilam Hydro Power Station
Golakharka, Ilam
Nepal

Whereas *[name and address of contractor]* (hereinafter called "the contractor") has undertaken, in pursuance of Contract No. **NEA-IHPS-2074/075-CQ/09** dated *[date]* to execute **Miscellaneous Civil Repair and Maintenance Works (**hereinafter called "the Contract");

And whereas it has been stipulated by you in the said Contract that the contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

And whereas we have agreed to give the contractor such a Bank Guarantee;

Now therefore we hereby affirm that we are the Guarantor and responsible to you, on behalf of the contractor, up to a total of *[amount of Guarantee] [amount in words]* such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of Guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the contractor shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

This Guarantee shall be valid for at least 30 days beyond the date of issue of Defects Liability Certificate.

Signature and seal of the Guarantor: _____

Name of Bank: _____

Address: _____

Date: _____

BANK GUARANTEE FORM FOR ADVANCE PAYMENT

To: Nepal Electricity Authority
Ilam Hydro Power Station
Golakharka, Ilam
Nepal

Contract: **Miscellaneous Civil Repair and Maintenance Works**
Quotation ID: **NEA-IHPS-2074/075-CQ/09**

Dear Ladies and/or Gentlemen,

In accordance with the provisions of the Conditions of Contract, Sub clause 10.5 ("Advance Payment") of the above-mentioned Contract, *[name and address of contractor]* (hereinafter called "the contractor") shall deposit with ***NEA*** a Bank Guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of *[amount of Guarantee] [amount in words]*

We, the *[Bank or Financial Institution]*, as instructed by the contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to *[name of NEA]* on his first demand without whatsoever right of objection on our part and without his first claim to the contractor, in the amount not exceeding *[amount of Guarantee] [amount in words]*

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed there under or of any of the Contract documents which may be made between ***NEA*** and the contractor, shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

The validity period of the guarantee shall be 30 days beyond the period scheduled for repayment of the advance payment and the guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until the ***NEA*** receives full repayment of the same amount from the Contractor.

.Yours truly,

Signature and seal: _____

Name of Bank/Financial Institution: _____

Address: _____

Date: _____