NATIONAL PROJECTS CONSTRUCTION CORPORATION LTD.
(A GOVT OF INDIA ENTERPRISE)

Tender Document

For

ELECTRICAL WORKS-PORTAL STRUCTURES RESIDENTIAL AREA-EXTERNAL-PHASE-II At Indira Gandhi National Tribal University, Amarkantak,

OWNER
INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY, AMARKANTAK

Issued by
Zonal Manager, NPCC Ltd., Chhattisgarh Zone,
Ashok Vihar Colony, Pandri, Raipur-492004

NATIONAL PROJECTS CONSTRUCTION CORPORATION LTD.

(A GOVT OF INDIA ENTERPRISE)

Tender Form

2nd CALL

Name of Work- Electrical Works-Portal Structures Residential Area External-Phase-II at Indira Gandhi National Tribal University,Amarkantak,M.P.

NIT No.-731003/IGNTU/622 dated 18.06.2012

Estimated Cost- Rs.195.25 lakhs

Cost of tender document-Rs.5000.00 (Rs.Five thousand only)

Paid vide demand draft No._____Dated_____

Issued to -_____

_____

_____

_____

Issued by
Zonal Manager,
NPCC Ltd.,
Chhattisgarh Zone,
Ashok Vihar Colony,
Pandri,Raipur-492004

1. Qualifying criteria

The intending Bidder should fulfill the following minimum pre-qualifying criteria

i. **Turnover**: Average Annual Financial Turnover on construction works during the last three years, ending 31st March of the previous financial year, should be at least 30% of the estimated cost.

ii. **Experience**: Bidder should have the experience of completion of similar works during last 7 years ending last day of month previous to the one in which tenders are invited should be either of the following.

a. Three similar completed works costing not less than the amount equal to 40% of the estimated cost,

or

b. Two similar completed works costing not less than the amount equal to 50% of the estimated cost,

or

c. One similar completed work costing not less than the amount equal to 80% of the estimated cost.

1. **Similar works mean**: External and or Internal Electrification,LT/HT panels,HT/LT Cables,Transformer etc.and allied works in State Govt Organization or central Govt Departments and or Public Sector Undertakings

iii. **Profitability:** The applicant should be a profit (net) making firm and should not have incurred any loss in the last 2 (two) financial years or any three out of last five years ending 31st March, 2012. It duly certified by Chartered Accountant.

iv. **EPF Registration:** Bidder must have valid EPF/ PF registration.

v. **Joint Venture**: Joint Ventures are not permitted.

vi. **Credit Facility:** Agency shall have credit facility amounting to Rs. 25 Lakhs (minimum) issued from Bank during this financial year i.e.2012-13.

vii. The applicant must have adequate organizational setup and reasonable presence in the work area or nearby as well as having sufficient number of experienced personnel, technical know-how, and infrastructure to complete the project well within time frame.

viii. The applicant must have minimum three years experience preferably working with public sector enterprises / government / semi government organizations.

ix. NPCC is free to get documents verified and agency shall have no objection to it. In case if it is found at any stage that that the agency has made any false information will be disqualified and black listed.

xi. **Request for Tender document:** The application for issue of Tender Document is to be submitted along with the following documents without fail.

1) Cost of Tender document as per NIT.

2) Copy of EPF/ PF Registration certificate.

3) Performance certificate in support of experience of similar works as per para 2.0 and 3.0 of NIT.

4) Details of Turn over for last 5 years duly certified by Chartered Accountant along with Profit and loss Statement of each financial year.

1.1 Bid Capacity: Agencies who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under:-

Assessed available bid capacity = A x N x 2 - B

N = Number of years rounded up to first decimal prescribed for completion of the subject contract.

A = Maximum value of works executed in anyone year during last five years (up dated to the price level of current financial year with percentage stated in the PQ document)

B = Value at current price level of existing commitments and on going works to be completed in the next 'N' years.

Note: The Bidder shall furnish statements showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works preferably countersigned by the Nodal officer or his nominee-in-charge in the format available in documents.

2. Instruction to bidders

2.1 Bidders are required to submit full bio-data giving details about their organization, experience, technical personnel & manpower available in their organization, Equipment holding, PF registration number from RPFC, Balance sheet and turnover details for last 5 years duly certified by CA, Litigation history etc. in order to asses their financial and technical capabilities etc. in the enclosed forms which will be kept confidential.

2.2 While deciding upon the technical qualification of applicant great emphasis will be given on the ability and competence of applicants to do good quality works within the specified time schedule and in close coordination with other agencies.

2.3 Each page of the documents shall be signed by power of attorney holder or authorized signatory. The documents shall be signed by person(s) on behalf of the organization having necessary authorization/power of attorney to do so (certified copies to be enclosed).

2.4 If the space in the proforma is in sufficient for furnishing full details, such information may be supplemented on separate sheets of paper, stating therein the part of the proforma and serial number. Separate sheets shall be used for each part. However, the format shall be as per proforma.

2.5 Applications containing false / incomplete and / or inadequate information are liable to be rejected. Also mere fulfillment of eligibility criteria does not guarantee for selection.

2.6 Clarification, if any required, may be obtained from the office of the **Zonal Manager, NPCC Limited, Chhattisgarh Zone, Street No.5, Bansal Public School, Ashok Vihar Colony, Pandri, Raipur-492004(C.G.).Telefax-007-4074482**

2.7 Canvassing in any form in connection with pre-qualifications is strictly prohibited and the application of such persons/organizations who resort to canvassing will be liable to rejection.

2.8 Additional Requirement -

Even though the bidders meet the above qualifying criteria, they are liable to be disqualified if they have

(a) Made misleading or false representation in the forms, statements and attachments in proof of the qualification requirements;

(b) Records of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.

(c) their business banned by any Central Govt. Department/Public Sector Undertakings or Enterprises of Central Govt.

(d) not submitted all the supporting documents or not furnished the relevant details as per the prescribed format.

A declaration to the above effect should be submitted as per Proforma-IX.

Bidder shall submit the general information about bidder as per Proforma No- III.

2.9 Bidder shall submit the list of major plant & machinery available with the firm as Proforma No.– IV.

2.10 Site Visit

a. The bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility and cost all information that may be necessary for preparing the bid and entering into a contract for construction of the Works.

b. The bidder and any of its personnel or agents will be granted permission by the Employer/Owner to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the bidder, its personnel, and agents, will release and

c. Indemnify the Employer/Owner and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

d. Before submitting a Bid, the Bidder shall be deemed to have satisfied himself by actual inspection of the site and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates entered in the Price Bid document are adequate and all inclusive for the completion of work to the entire satisfaction of the Employer/Owner.

2.11 Bid Opening

2.11.1 Bids will be opened at the address mentioned in “Notice inviting Tender” in presence of Bidders or authorized representatives of Bidders who wish to attend the opening of Bids.

2.11.2 The Price bid shall be opened on the date and time, which will be intimated later on to the technically qualified bidders. NPCC will not be responsible for any postal delay or loss of communication.

2.12 Process to be Confidential

2.12.1 Information relating to the examination, clarification, evaluation and comparison of bids, and recommendations for bid shall not be disclosed to bidders or any other persons not officially concerned with such process until the process is finalised.

2.13 Examination of Bids and Determination of Responsiveness

2.13.1 The Employer shall examine the bids to determine whether they are complete, whether the documents have been properly signed and whether the bids are generally in order, and all documents as per Tender document have been submitted.

2.13.2 Prior to the detailed evaluation, Employer shall determine whether each bid is of acceptable quality, is generally complete and is substantially responsive to the Tender documents. For purposes of this determination, a substantially responsive bid is one that conforms to all the documents as specified in the Tender document without material deviations, objections, Conditionality or reservation. A material deviation, objection, conditionality or reservation is one**;**

a) That affects in any substantial way the scope, quality or performance of the contract.
b) That limits in any substantial way, inconsistent with the bidding documents, the Employers' rights or the successful Bidder's obligations under the Tender document or
c) Whose rectification would unfairly affect the competitive position of other Bidders who are presenting substantially responsive bids.

2.13.3 If a bid is determined to be not substantially responsive, the Employer shall reject the bid**.**

3. MODE OF SUBMISSION

The tender should be submitted in 2 Envelope system.

3.1 **The Envelope No.1 TECHNICAL BID** will contain the EMD of Rs.3.91 Lakhs (Rupees Three point nine one lakhs only) in the form of DD/FDR/Bank Guarantee in favour of NPCC Limited payable at Raipur **(in case of BG it must be from nationalized bank only)** and the unconditional acceptance letter on the letter-head in respect of the tender conditions as per proforma available in the tender document. The EMD shall be valid for 150 days from the date of submission of tender. The EMD in any other form shall not be accepted. This envelope No. 1 will also contain the tender document (without Price Bid) duly signed without any conditions. This shall contain all information asked vide condition no. 1.1 and Conditional tenders shall be treated as non-responsive and rejected.

The Envelope No.2 Price BID will contain the unconditional Price Bid duly signed by authorized signatory.

Both the Envelopes shall be sealed separately and shall be marked/written respectively as Technical Bid and Price Bid. These 2 sealed envelopes shall be submitted in an outer sealed envelope clearly mentioning the name of work for which the tender is offered.

The Envelope No. 1 shall be opened on its due date & time in presence of the bidders or their representatives who wish to be present. On verification of the Envelope No.1 contents as detailed above, the envelope no. 2 of qualified bidders will be opened on the date intimated separately. Conditional tenders will be summarily rejected.

If the contents/requirements of the envelope No.1 are not found in order, the envelope No. 2 shall not be opened and offer of that bidder will be rejected.

The rates for the items are to be quoted both in words & figures in the BOQ enclosed. The rates in words shall supersede the rates in figures and shall be treated as the final rates quoted.

All envelopes / packets shall be individually sealed as well as marked as given below and kept in an outer envelope marked as :

Electrical Works-Portal Structures Residential Area External-Phase-II at Indira Gandhi National Tribal University,Amarkantak,M.P

NIT No : **Due on :**

From (Name of the Company)

The envelope thus sealed shall be submitted at the place of submission of tender before the stipulated time and date fixed for receipt of tender. The tenders received on or after the

stipulated time and date of tender receipt shall not be considered as well as the same shall be returned to the tenderer **unopened**. NPCC shall not be responsible for any kind of communication delays whatsoever may be. Each and every envelope is to be addressed to the **Zonal Manager, NPCC Limited, Chhattisgarh Zone, Street No.5, Bansal Public School, Ashok Vihar Colony, Pandri, Raipur-492004(C.G.)**

3.2 Once the bidder has given an unconditional acceptance to the terms and contract conditions, bidder will not be permitted to put any remark(s)/conditions(s) (except unconditional rebate on price quoted, if any) in/along with the tender document.

3.3 In case the conditions 3.2 mentioned above is found violated at any time after opening of tender, the tender shall be summarily rejected and NPCC shall, without prejudice to any other right remedy, be at liberty to forfeit the Earnest Money Deposit as specified above.

4. EARNEST MONEY DEPOSIT :

The agency has to submit the requisite EMD as mentioned in NIT. Tenders Received without EMD will be treated as non responsive and summarily rejected.

5. NPCC reserves the right to reject any or all the tenders in part or full without assigning any reason whatsoever thereof. NPCC does not bind itself to accept the lowest tender. NPCC also reserves the right to split up the work among two or more agencies.

6. QUOTING OF RATES & AMOUNTS:

6.1 The tenderers should quote in figures as well in words the rates and amounts tenders by them. The amount for each item should be worked out and the requisite totals and page totals be given.

6.2 Special care should be taken to write the rates and amounts in figures as well in words in such a way that any alteration is not possible. The total amount should be written both in figures and in words. In case of figures; the word 'Rs.' Should be written before the figure of Rupees and word 'P' after the decimal *figure e.g. Rs. 2.15p. Rs. 2.15 shall be written as Rupees two and fifteen paisa only*. Unless the rate/amount is in whole Rupees it should invariably be up to two decimal places. While quoting the rates in Bill of quantities, the word "only" should be written closely following the amount and it should not be written in the next line.

6.3 In case of any discrepancy between the rates/percentage quoted in figures and words, , then the rate/percentage quoted by the contractor in words shall be taken as correct.

7. The tenders shall be strictly as per the conditions of contract. Tenders with any additional condition(s)/modifications shall be rejected.

8. The witnesses to the Tender/Contract Agreement shall be other than the tenderer/ tenderers competing for this work and must indicate full name, address, status/occupation with dated signatures.

9. The tenders for works shall remain open for acceptance for a period of *90(Ninety) days from the date of opening* of the tenders. If any tenderer withdraws his tender before the said period or makes any modification in terms and conditions of the tender to his benefit which are not acceptable to NPCC then NPCC shall without prejudice to any other right or remedy, be at liberty to forfeit the EMD.

10. The acceptance of tender will rest with NPCC who does not bind itself to accept the lowest tender and reserves to itself the right to reject any or all the tenders received without assigning any reason thereof. Tenders in which any of the prescribed conditions are not fulfilled or found incomplete in any respect are liable to be rejected.

11. Canvassing whether directly or indirectly in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable for rejection.

12. PERFORMANCE GUARANTEE:-

Within 10 days from the date of issue of LOA / LOI, the tenderer shall submit Performance Guarantee amounting to 5% (Five percent) of the awarded value of work in the form of Demand Draft/fixed deposit in favour of NPCC LTD. or Bank Guarantee from the Nationalised /Scheduled Bank (as per list enclosed) of equivalent value. No interest will be paid under any circumstances. on receipt of the performance guarantee in the form of DD/FDR/BG the EMD will be refunded.

13. SECURITY DEPOSIT:-

The security deposit will be deducted from the successful contractor at the rate of 10% from the Gross value of each R/A bills till it reaches 5% of the contract value. No interest will be paid on the Security Deposit under any circumstances. The total security deposit will be refunded only after expiry of defect liability period. However after successful completion of work 50% of the security deposit can be released against bank guarantee from the Nationalised /Scheduled Bank (as per list enclosed) as per approved format.

14. On acceptance of tender, the name of the authorized representative(s) of the contractor who would be responsible for taking instructions from Engineer-in-charge or his authorized representative shall be intimated by the contractor within 07 days from the date of issue of telegram/letter/telex/fax of intents by NPCC.

15. The tenderer shall not be permitted to tender for works if his near relative is posted as an Accountant or an Assistant Engineer or any higher ranks in the project office or concerned Zonal office of the NPCC. The contractor shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any of the officers in NPCC. Any breach of this condition by the tenderer would render him liable to the withdrawal of the work awarded to him and forfeit of Earnest Money and Security Deposit. This may also debar the contractor from tendering for future works under NPCC.

16. Sales tax/VAT or any other tax on materials as also the Turnover Tax, Work Contract Tax, Service tax, Construction cess or similar, if any, in respect of contract shall be payable by the contractor and NPCC will not entertain any claim whatsoever, on such grounds. In the event of non payment/default in payment of any octroi, royalty, cess, turnover tax, sales tax, including the purchase tax, consignment tax, work contract tax or any labour dues and E.P.F. etc. by contractor/supplier, the NPCC reserves the right to with-hold the dues/payments of contractor and make payment to local / state/ Central Government authorities or to labours as may be applicable. The contractor should submit along with the tender, the Registration Certificates with sales tax on works contract authority and EPF Authorities other wise appropriate recovery shall be made from his bills.

17. Tenderer should quote all prices, including the liability of taxes etc covered under Clause 16.0 or any other levy as applicable in the respective state.

18. The tenderer shall be deemed to have gone through the various conditions and clauses of the tender and visited the site before quoting their rates, once they make an offer for this work. No claim shall be entertained on this account.

19. The drawings for the work are available at Zonal Office,Chhattisgarh Zone,Raipur which can be viewed on any working day between 10 AM to 4 PM.

20. Tenderer can purchase the tender documents from any of the offices mentioned in NIT. However, the documents can be viewed on our website **www.npcc.gov.in** .

21. ESCALATION/PRICE VARIATION:

21.1 There will be no escalation on account of any increase in price index in the price of materials or labours, imposition of sales tax or enactment of any new law or imposition of levies etc. No price escalation shall be applicable even during the extended period for completing the works. No extra claim in this regard will be entertained.

22. NPCC reserves its right to accept or reject any or all tenders without assigning any reason thereof.

23. **Details of documents to be submitted: Following documents are to be submitted with Technical bid (Envelop No. 1) duly supported with credentials/certificates as directed in the respective proforma.**

S.No.	Details	Proforma No.	To be executed on
1.	Acceptance of Tender Conditions	**PROFORMA- I**	Tenderer's letter head
2.	Form of Tender	**PROFORMA- II**	Tenderer's letter head
3.	General Information	**PROFORMA - III**	
4.	List of Major Plant and Machinery in Possession of the Firm	**PROFORMA - IV**	
5.	Annual Turn Over For The Last Five Years	**PROFORMA-V**	
6.	Details of the Similar Works Completed in Last Five Years	**PROFORMA-VI**	
7.	Certificate of Credit Facility	**PROFORMA -VII**	Banker's letter Head
8.	Details of on-going/existing works	**PROFORMA-VIII**	
9.	Past contractual performance	**PROFORMA – IX**	On Non-judicial stamp paper

PROFORMA- I

(On the letter head of the Tenderer)

To,

The Zonal Manager,
NPCC Ltd.
Chhattisgarh Zone,
Raipur-492004(C.G.)

Sir

ACCEPTANCE OF TENDER CONDITIONS

The tender documents for the work of **"Electrical Works-Portal Structures Residential Area External-Phase-II at Indira Gandhi National Tribal University,Amarkantak,M.P** has been sold to me/us by National Project Construction Corporation Limited and I/We hereby unconditionally accept the tender conditions and tender documents in its entirety for the above work.

1. The contents of clause 3.2 and 3.3 of the Tender documents (Instructions to Tenderer) have been noted wherein it is clarified that after unconditionally accepting the tender condition in its entirety, it is not permissible to put any remark(s)/conditions(s) (except unconditional rebate on price, if any) in the tender enclosed in "Envelope-2 and the same has been followed in the present case. In case this provision of the tender is found violated at any time after opening of the Envelope 2 , I/we agree that the tender shall be summarily rejected and NPCC shall, without prejudice to any other right or remedy be at liberty to forfeit the full said earnest money absolutely.

2. The required earnest money for this work is enclosed herewith.

3 If I/we will not fulfill the minimum qualifying criteria of the tender I/we not lodge any claim for opening of envelope 2 of the tender.

Yours faithfully,

(Signature of the tenderer)
With rubber stamp

Dated : _____

PROFORMA- II

FORM OF TENDER

(On the letterhead of the Tenderer)

To
The Zonal Manager,
NPCC Ltd.
Chhattisgarh Zone,
Raipur-492004(C.G.)

1. I/We, _____ [*Name and address of the Bidder]*_____ have read the various terms and conditions of the Bid documents together with Addendum no(s)/Errata no(s) attached here with duly signed by me/us and agree to abide by the same.

2. I/We hereby declare that we are aware of the site of work and have made ourselves fully conversant of the conditions therein and including the topography of area, soil strata at site of work, sources and availability of construction materials, rates of construction materials, water, electricity, all local taxes, royalties, octrois etc., availability of local labour (both skilled and unskilled), relevant labour rates and labour laws, the existing road and approaches to the site of work, requirements for further service roads / approaches to be constructed by me / us, the availability and rates of private land etc. that may be required by me / us for various purposes, climatic conditions, law and order situation and availability of working days.

3. I/We hereby tender for execution of **Electrical Works-Portal Structures Residential Area External-Phase-II at Indira Gandhi National Tribal University,Amarkantak,M.P** as per tender documents within the time schedule of completion of work as per separately signed and accepted rates in the bill of quantities quoted by me/us for the whole work in the accordance with the Notice Inviting Tenders, conditions of Contract. Specifications of materials and workmanship, bill of quantities. Drawings, time schedule of completion of jobs and other documents and papers, all as in tender documents.

4. It has been explained to me/ us that the time stipulated for jobs and completion of works in all respects and in different stages mentioned in the "Time schedule for Completion of jobs and signed and accepted by me/us is the essence of the contract. I/We agree that in case of failure on my/our part to strictly observe the time of completion mentioned for jobs or any of them and the final completion of works in all respects according to the schedule sat out in the said "Time Schedule for completion of stipulations contained in the contract the recovery being made as specified therein. In exceptional circumstances extensions of time which shall always being in writing way, however be granted by the NPCC at its entire discretion for some items and I/we agree that such extension of time will not be counted for the final completion of work as stipulated in the said "Time Schedule of Completion of jobs."

5. I/we agree to pay the earnest Money deposit, performance guarantee and Security Deposit and accept the terms and condition as laid down in the memorandum below in this respect.

MEMORANDUM

S.No.	Description	Clause No.	Values/Description to be applicable for relevant clause(s)
1.	Name of Work		**Electrical Works-Portal Structures Residential Area External-Phase-II at Indira Gandhi National Tribal University,Amarkantak,M.P**
2.	Client/Owner		**Indira Gandhi National Tribal University,Amarkantak,M.P**
3.	Type of Tender		Percentage rate
4.	Earnest Money deposit	As per	Rs. 3.91 Lakhs

		NIT	(Rupees Three point nine one Lakhs) in the form of DD/FDR/Bank Guarantee in favour of NPCC Limited payable at Raipur
5.	Estimated Cost	As per NIT	Rs.195.25 Lakh (Rupees One hundred ninety five point two five Lakh only)
6.	Time for completion	As per NIT	Total work to be completed in 6 (Six) months including monsoon period in accordance with the time schedule of completion of work in the tender document.
7.	Mobilization Advance	8.0	Mobilisation advance is payable @ 10% (Ten Percent) of contract value subject to conditions stipulated in clause no.8 of GCC.
8.	Interest rate on Mobilization Advance	8.0	Simple interest Rate of 12% (Twelve percent only) per annum.
9.	Schedule of Rates applicable	69.0	Refer clause No. 69 of GCC in conjunctions with BOQ
10.	Validity of Tender	4.0	90 (Ninety) days
11.	Performance Guarantee	9.0	5% of contract value to be submitted within 10 days from the date of issue of LOI
12.	Security deposit/ Retention Money	10.0	To be deducted @ 10% of each RA bill and will be restricted up to 5% of the contract value including.
13.	Time allowed for starting the work	43.0	Date of start of contract shall be reckoned 10 days after the date of issue of letter/FAX/E-mail of intent/acceptance of tender.
14.	Defect liability period	74.0	12 (Twelve Months from the date of handing over of works to Owner/NPCC.
15.	Recovery rate of work force supplied by NPCC to Contractor	28.5	Rs. 12,500/- (Rupees Twelve Thousand five hundred only) each man power per month.

6 Should this tender be accepted, I/We agree to abide by and fulfill all terms and conditions referred to above and in default thereof, to forfeit, and pay NPCC or its successors or its authorized nominees such sums of money as are stipulated in the notice inviting tender documents.

7. If I/We fail to commence the work immediately on issue of LOI, or I/We fail to submit the performance guarantee as per Clause 09 of General conditions of contract I/We agree that NPCC shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money deposited with NPCC besides any other action as per terms of registration with NPCC. The NPCC shall also be at liberty to cancel the notice of acceptance of tender if we fail to deposit the performance guarantee as contained elsewhere in the tender documents.

8. I/We are also enclosing herewith the Acceptance letter on the prescribed pro-forma as referred to in condition of NIT.

Dated the_____ day of _____

SIGNATURE OF TENDERER
NAME IN CAPITAL LETTERS _____
ADDRESS _____
_____

TELEPHONE & FAX NO.

E-mail ID _____

SEAL OF TENDERER

WITNESS

OCCUPATION._____

PROFORMA - III

GENERAL INFORMATION

All individual firms and each partner of a joint venture participating in this Bid are requested to complete the information in this form.

1	Name of Bidder	
2	Head Office Address	
	Tel. No	
	Mobile no.	
	Fax No	
	E-mail address	
3	Address on which Correspondence should be done	
	Tel. No	
	Mobile no.	
	Fax No	
	E-mail address	
4	Place of incorporation / registration	
5	Legal status of the applicant (attach copies of original documents defining the legal status)	
i)	Specify, if the bidder is	
	a) An individual	
	b) A proprietary firm	
	c) A firm in partnership	
	d) A Limited Company or Corporation	
	e) A group of firms / joint venture (if yes, give complete information in respect of each member)	**N.A.**
ii)	Attach a copy of Proprietorship or Partnership Deed or Article of Association or Incorporation of Company or JV Agreement as the case may be	
6	Name of Proprietor / Partners / Directors with their addresses, Mobile & Telephone numbers, Fax no., E-mail address.	
7	Designation of individuals authorized to act for the organization with the address, Mobile & Telephone numbers, Fax, E-mail address. **(Enclose legal Power of Attorney).**	
8	Was the applicant ever required to suspend any construction for a period of more than six months continuously after commencement of the construction? If so, give the name of the project & reasons of suspension of work.	
9	Has the applicant of any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.	
10	Has the applicant, or any constituent partner in case of partnership firm ever been debarred / black listed for tendering in	

	any organization at any time? If so, give details.		
11	Has the applicant or any constituent partner in case of partnership firm, ever been convicted by a court of Law? If so, give details.		
12	Bank solvency		
13	Turn Over / Net Profit for the years given below	Turn Over in Lakhs	Profit in Lakhs
	2007-08		
	2008-09		
	2009-10		
	2010-11		
	2011-12		
14	Other details: **(Copies to be enclosed)**		
	a) EPF No. valid up to:		
	b) Sales Tax No. valid up to		
	c) Clearance of sales Tax up to		
	d) PAN No.		
	e) Service tax registration No.		
15	Give particulars of registration with Govt./Semi Govt./Public Sector Undertakings/Local Bodies.		

Note: Use separate sheets for providing more information if any.

Date & Place **Signature & seal of the applicant**

PROFORMA - IV

List of major Plant and Machinery in possession of the firm
(Agency should intimate the details of plant/major tools/equipments held by them)

S.No.	Name of Plant & Machinery/equipment/major tools in possession	Available Owned	*Other than col. No. C
A	B	C	D
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

Signature & seal of the applicant

Date & Place

Note:

* In case of any arrangement for getting the equipment on lease, etc., authenticated proof of the same is to be submitted.

** Use separate sheets for providing more information.

PROFORMA-V

Date:_____

ANNUAL TURN OVER FOR THE LAST FIVE YEARS				
S. No.	**YEAR**	**Turnover from Engineering construction works (In Rs lacs)**	**Net Profit (In Rs lacs)**	**Remarks (if any)**
1	2011-2012			
2	2010-2011			
3	2009-2010			
4	2008-2009			
5	2007-2008			

Note:

1 The bidder shall submit the attested copies of the audited balance sheets along with Profit and loss statements and Auditors report and schedules duly certified by the bidder and Chartered Accountant. Certificate from the Chartered Accountant, wherever the Annual Turnover is Certified for the relevant financial year in which the minimum criteria of Annual Turnover is satisfied should also be submitted.

PROFORMA-VI

DETAILS OF THE SIMILAR WORKS COMPLETED IN LAST FIVE YEARS

S. No.	Descrip-tion of the Work with Contract No.	Name and address of the Employer with Contract No.	Date of award	Stipulated date of completion	Date of actual completion	Value of completed work (In Rs lacs)	Reasons for delays, penalty if any	Any other relevant information
1								
2								
3								
4								
5								
6								

Note:

1. The Bidder shall submit the attested Copies of the Completion Certificates from the Client.
2. The value of work executed should be inclusive of the value of free supply items.

PROFORMA - VII

Certificate of Credit Facility
(On Banker's letter Head)

This is to certify that M/s _____, is a reputed firm/company with a good financial standing.

The firm/company is enjoying a fund based credit facility of Rs _____ to meet its working capital requirements.

Signature
Name
Designation
Address of Bank

BANK'S SEAL

NOTE: The above certificate shall be from RBI scheduled Bank.

PROFORMA-VIII

DETAILS OF ON-GOING/EXISTING WORKS

S. No.	Description of the Work with Contract No.	Name and address of the Employer	Date of award	Stipulated date of completion	Value of work as per order (In Rs. lacs)	Value of work completed so far (In Rs. lacs)	Anticipated date of completion of work	Any other relevant information
1								
2								
3								
4								
5								
6								
7								
8								
9								

Note:-
The copies of certificates of ongoing-awarded works issued by the owner shall be attached.
Only those works shall be considered for evaluation for which copies of the certificates issued by the owner are attached.

PROFORMA – IX

PAST CONTRACTUAL PERFORMANCE

(Affidavit on non-judicial stamp paper of Rs 10/- duly attested by Notary/Magistrate)

This is to certify that We, M/s _____*[Name of the Bidder with address]*, in submission of the Bid, _____*[Name of Bid with Bid no.]*

i) have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements;

ii) do not have records of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.;

iii) have never been banned by any Central/State Govt. Departments/Public Sector Undertakings or Enterprises of Central/State Govt. ;

iv) have submitted all the supporting documents and furnished the relevant details as per the prescribed format.; and

v) have submitted all the information and the requisite documents with the Bid and further certify that we are fully responsible for the correctness of the information and documents submitted by us.

SIGNATURE OF THE BIDDER

SEAL

Note:
Exceptions of the above, if any, shall be clearly mentioned with details by the bidder for evaluation/consideration if any.

National Projects Construction Corporation Limited

(A Govt. of India Enterprise)

GENERAL CONDITIONS OF CONTRACT

1.0 GENERAL

The Contract means the documents forming the tender and acceptance thereof and the agreement executed between the competent person on behalf of NPCC and the contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-in-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

1.1 National Projects Construction Corporation Limited, hereinafter called 'NPCC' proposes to get the works executed as mentioned in the Contract on behalf of Owner/ Client.

1.2 The work will be executed as per drawings "GOOD FOR CONSTRUCTION" to be released by NPCC unless otherwise specified elsewhere in the tender documents.

1.3 In the contract, the following expressions shall, unless the context otherwise requires, have the meaning, hereby respectively assigned to them.

1.4 **DEFINITIONS**

a) **ENGINEER-IN-CHARGE** means the PROJECT MANAGER of NPCC who shall supervise and be in-charge of the work from time to time.

b) **WORKS OR WORK**: The expression works or work shall unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

c) **CONTRACTOR** means the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

d) **DRAWINGS** mean the drawings referred to in the Bill of Quantities, specifications and any modifications of such drawings or such other drawings as may from time to time be furnished or approved by NPCC in consultation with the Client.

e) **SITE** means the lands and other places on, under, in or through which the works are to be executed or carried out and any other lands or places provided by NPCC or used for the purpose of the agreement.

f) **APPROVAL** means approved in writing including subsequent written confirmation of previous verbal approval.

g) **WRITING** means any manuscript typed written or printed statement under or over signature and/or seal as the case may be.

h) **MONTH** means English Calendar month 'Day' means a Calendar day of 24 Hrs each.

i) **CONTRACT VALUE** means the sum for which the tender is accepted as per the letter of intent.

j) **LANGUAGE**: All documents and correspondence in respect of this contract shall be in English Language.

k) **BILL OF QUANTITIES** or **SCHEDULE OF QUANTITIES** means the priced and completed Bill of Quantities or Schedule of Quantities forming part of the tender.

l) **OWNER** means INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY, AMARKANTAK, who has awarded the work to NPCC as implementing agency.

m) **IMPLEMENTING/ EXECUTING AGENCY** means **National Projects Construction Corporation Limited (A Govt. of India Enterprise)** referred as NPCC who has been retained as implementing agency by INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY, AMARKANTAK for their construction work.

n) **TENDER** means the Contractor's priced offer to NPCC for the execution and completion of the work and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Intent or Award letter. The word TENDER is synonymous with Bid and the word TENDER DOCUMENTS with "Bidding Documents" or "offer documents".

The headings in the clauses/ conditions of tender documents is for convenience only and shall not be used for interpretation of the clause/ condition.

Words imparting the singular meaning only also include the plurals and vice versa where the context requires. Words imparting persons or parties shall include firms, companies and other organizations having legal capacities.

2.0 SITE VISIT AND COLLECTING LOCAL INFORMATION

Before tendering, the tenderer is advised to visit the site, its surroundings to assess and satisfy themselves about the local conditions such as the working and other constraints at site, approach to the site, availability of water & power supply, application of taxes, cess duties and levies as applicable, nature of ground, soil and sub-soil condition, underground water table level, accommodations they may require etc., river regime, river water levels, other details of river, streams & any other relevant information required by them to execute complete scope of work.

The tenderer may obtain all necessary information as to risks, weather conditions, contingencies & other circumstances (insurgencies etc.), which may influence or affect their tender prices. Tenderer shall be deemed to have considered site conditions whether
he has inspected it or not and to have satisfied himself in all respect before quoting his rate and no claim or extra charges whatsoever in this regard shall be entertained / payable by the NPCC at a later date.

2.1 ACCESS BY ROAD

Contractor, if necessary, shall build temporary access roads to the actual site of construction for the works at his own cost to make the site accessible. The Contractor shall maintain the same in motorable condition at all the times as directed by Engineer-in-Charge at his own cost. The contractor shall be required to permit the use of any roads so constructed by him for vehicles of NPCC or any other agencies/ contractors/Client who may be engaged on the project site, free of cost.

Non-availability of access roads or approach to site, for the use of the contractor shall in no case condone any delay in the execution of work nor be the cause for any claim for compensation.

2.2 HANDING OVER & CLEARING OF SITE

2.2.1 The Contractor should note that area for construction may be made available in phases as per availability and in conjunction with pace of actual progress of work at site. The work may be required to be carried out in constrained situations. The work is to be carried out in such a way that the traffic, people movement, if any, is kept operative and nothing extra shall be payable to the contractor due to this phasing / sequencing of the work. The contractor is required to arrange the resources to complete the entire project within total stipulated time. Traffic diversion, if required, is to be done and maintained as per specification by the contractor at his own cost and the contractor shall not be entitled for any extra payment, whatsoever, in this regard.

2.2.2 The efforts will be made by the NPCC to handover the site to the Contractor free of encumbrances. However, in case of any delay in handing over of the site to the Contractor, the NPCC shall only consider suitable extension of time for the execution of the work. It should be clearly understood that NPCC shall

not consider any revision in contract price or any other compensation whatsoever viz. towards idleness of Contractor's labour, equipment etc.

2.2.3 The Contractor shall be responsible for removal of all over-ground and under-ground structures (permanent, semi-permanent and temporary) and constructions from the site. The cost to be incurred in this regard shall be deemed to be included in the quoted rate of Bill of Quantities items and contractor shall not be entitled for any extra payment whatsoever, in this regard. The contractor, if required, shall demolish old structures on the proposed site, properly.

The useful material obtained from demolition of structures & services shall be the property of the owner/NPCC and these materials shall be stacked in workmanship like at the place specified by the Engineer- in-charge.

2.2.4 If required, the contractor has to do site clearance, enabling work, barricading, diversion of Roads, shifting/ realignment of existing utility services, drains, nallahs etc. at his own cost as per direction of Engineer-in-charge and the contractor shall not be entitled for any extra payment whatsoever in this regard.

2.2.5 Necessary arrangements including its maintenance are to be made by the contractor for temporary diversion of flow of existing drain and road, as the case may be. The existing drain, road would be demolished, wherever required, with the progress of work under the scope of proposed project. The existing Road and Drain, which are not in the alignment of the said project but are affected and/ or need to be demolished during execution for smooth progress of the project, shall be rehabilitated to its original status and condition (including black topping) by the contractor at his own cost. The cost to be incurred by contractor in these regards shall be deemed to be included in the quoted rates of the Bill of Quantities items and contractor shall not be entitled for any extra payment whatsoever, in these regards.

2.2.6 The Contractor shall be responsible to co-ordinate with service provider/ concerned authorities for cutting of trees, shifting of utilities and removal of encroachments etc. and making the site un-encumbered from the project construction area required for completion of work. This shall include initial and frequent follow up meetings/ actions/ discussions with each involved service provider/ concerned authorities. The contractor shall not be entitled for any additional compensation for delay in cutting of trees, shifting of utilities and removal of encroachments by the service provider/ concerned authorities.

2.2.7 The information about the public utilities (whether over ground or underground) like electrical/ telephone/ water supply lines, OFC Cables, open drain etc. is the responsibility of contractor to ascertain the utilities that are to be affected by the works through the site investigation and collection of information from the concerned utility owners.

2.2.8 The contractor shall be responsible to obtain necessary approval from the respective authorities for shifting/ re-alignment of existing public utilities. NPCC shall only assist the contractor for liasoning in obtaining the approval from the concerned authorities.
Take all measures reasonably required by the various bodies to protect their services and property during the progress of works. It shall be deemed to be the part of the contract and no extra payment shall be made to the contractor for the same. Shifting/ re-alignment of public utilities should be done without disturbing the existing one. New service lines should be laid and connected before dismantling the existing one.

2.2.10 Shifting/ re-alignment of existing public utilities shall be done by the contractor as per technical requirement of respective bodies or as per direction of Engineer-in-Charge. Shifting/ re-alignment of public utilities include all materials, labours, tools and plants and any other expenses whatsoever for the same. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the contractor shall not be entitled for any extra payment, whatsoever, in this regard. In case any of these services are shifted by the State Govt/ local authorities themselves for which deposit as per their estimates is to be made to them, the contractor shall deposit the same and the
Contractor shall be paid only at the rates quoted by them in BOQ for quantity specified in the BOQ, if such items are included in the BOQ irrespective of amount paid by him to the State Govt. / local authorities for execution of these works. In case such provision is not made in the BOQ or the quantity exceeds those specified in the BOQ, the same is deemed to be included in the rates quoted by him for other items in BOQ and nothing extra shall be payable to contractor on this account.

3.0 SCOPE OF WORK

3.01 The scope of work covered in this tender shall be as per the Bill of Quantities, specifications, drawings, instructions, orders issued to the contractor from time to time during the work. The drawings for this work, which may be referred for tendering, provide general idea only about the work to be performed under the scope of this contract. These may not be the final drawings and may not indicate the full range of the work under the scope of this contract. Drawings released as “GOOD FOR CONSTRUCTION” from time to time by the Engineer-in-charge of NPCC and according be executed according to any additions/ modifications/ alterations/ deletions made from time to time, as required by any other drawings that would be issued to the contractor progressively during execution of work.

It shall be the responsibility of the contractor to incorporate the changes that may be in this scope of work, envisaged at the time of tendering and as actually required to be executed.

3.2 The quantities of various items as entered in the “BILL OF QUANTITIES” are indicative only and may vary depending upon the actual requirement. The

contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items specified in the bill of quantities.

4.0 VALIDITY OF TENDER

The tender for the works shall remain open for acceptance for a period of **ninety** days from the date of opening of Price Bid of tenders. The earnest money will be forfeited without prejudice to any right or remedy, in case the contractor withdraws his tender during the validity period or in case he changes his offer to his benefits, which are not acceptable to NPCC. The validity period may be extended on mutual consent.

5.0 ACCEPTANCE OF TENDER

The NPCC reserves to itself the authority to reject any or all the tenders received without assigning any reason. The acceptance of a tender shall be effective w.e.f. the date on which the telegram/ letter of intent of acceptance of the tender is put in the communication by the NPCC. NPCC also reserves the right to Split the work among two or more parties at lowest negotiated rate without assigning any reason thereof. The contractor is bound to accept the portion of work as offered by NPCC after split up at the quoted/- negotiated rates.

6.0 SET OF CONTRACT DOCUMENTS

1. Notice Inviting tender
2. Corrigendum(s) and Addendum (s).
3. Pre-qualification documents
4. General Conditions of contract
5. Special conditions and formats
6. BOQ/schedule of rates
7. Technical Specifications
8. Tender drawings

7.0 EARNEST MONEY DEPOSIT

7.1 Earnest Money Deposit of amount as mentioned in "Memorandum to Form of Tender" required to be submitted along with the tender shall be in the form of Demand Draft, or FDR payable at place as mentioned in "NIT/ Instructions to Tenderer" in favour of NPCC Limited from any Nationalized Bank of India, or Bank Guarantee in enclosed format from any Nationalized / Scheduled Bank as per list annexed. The EMD shall be valid for minimum period of 150 days (One hundred fifty Days) from last day of submission of Tender

7.2 EMD shall accompany the offer and placed in the sealed envelope cover of the offer as detailed in the Instruction to tenderer. Any tender not accompanied with the requisite Earnest Money Deposit along with Letter of

Acceptance shall be rejected and such tenderer(s) will not be allowed to attend the opening of bids. Conditional tenders will be summarily rejected.

7.3 The date of opening of envelope no. 2 i.e. Price bid shall be intimated telephonically to the technically qualified bidders only to depute their representative. The Envelope No. 2 shall be opened on intimated date & time in presence of the bidders or their representatives who wish to be present

7.4 The EMD of all unsuccessful tenderers will be returned within thirty (30) days of the Award of the Contract to successful bidder. EMD of successful tenderer shall be refunded after submission of Performance Guarantee by him.

7.5 Once the tenderer has given an unconditional acceptance to the tender conditions in its entirety, he is not permitted to put any remark(s)/conditions(s)(except unconditional rebate on price, if any) in/ along-with the tender.

7.6 In case the condition 7.5 mentioned above is found violated at any time after opening of tender, the tender shall be summarily rejected and NPCC shall, without prejudice to any other right or remedy, be at liberty to forfeit the full said Earnest Money absolutely.

7.7 No interest shall be payable by the NPCC on the said amount covered under EMD/Other security documents.

8.0 MOBILISATION ADVANCE

8.1 Mobilisation advance up to maximum of amount as mentioned in the "Memorandum to the Form of Tender" shall be paid to the contractor on submission of non-revocable Bank Guarantee of an amount equal to 112 % of the mobilisation advance to be paid as mentioned in the "Memorandum to the Form of tender", from a nationalized bank in enclosed Performa. The Mobilisation Advance shall be at the **Interest rate of 12% simple interest** as mentioned in the "Memorandum to the Form of Tender".

This advance shall be paid in three installments as follows-

i. First Installment of fifty percent of total mobilisation advance shall be paid after the agreement is signed and upon submission of performance guarantee.

ii. 2nd installment of twenty five percent of total mobilisation advance will be paid after the setting up of site office and facilities to NPCC as per contract, completion of mobilisation of Plant and machinery, scaffolding & shuttering materials etc.

iii. The Balance twenty five percent of total mobilisation advance shall be paid on completion of 10% of work in terms of cost and after the contractor has fully mobilized the work at site.

8.2 The mobilization advance bear simple interest at the rate as mentioned in the MEMORANDUM and shall be calculated from the date of payment to the date of recovery (365 days in a year) both days inclusive, on the out standing amount of advance. Recovery of such sums advanced shall be made by the deduction from the contractor's bills commencing after first ten percent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty per cent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment.

The Mobilization Advance bank guarantee shall initially be made for the amount equal to 112 % of the mobilisation advance to be paid as per MEMORANDUM and valid for the contract period, and be kept renewed from time to time to cover the balance amount and likely period of complete recovery together with interest. However, the contractor can submit part bank guarantees against the mobilization advance in as many numbers as the proposed recovery installments equivalent to the amount of each installment.

8.3 Notwithstanding what is contained in clause No. 8.1 & 8.2, no mobilization advance whatsoever shall be payable, if payment of mobilization advance is not mentioned in the memorandum to the form of tender.

9.0 PERFORMANCE GUARANTEE

"Within 10 days (ten days) from the date of receipt of letter of intent or within such extended time as may be granted by NPCC in writing, the contractor shall submit to NPCC a performance bank guarantee in the form appended, from any nationalized bank equivalent to 5% (five percent only) of the contract value for the due and proper execution of the contract. This bank guarantee shall remain valid up to 90 (ninety) days after the end of defects liability period. In case the contractor fails to submit the performance guarantee of the requisite amount within the stipulated period or extended period, letter of intent will stand withdrawn and EMD of contractor shall be forfeited.

10.0 SECURITY DEPOSIT

The security deposit will be deducted from the successful contractor at the rate of 10% from the Gross value of each R/A bills till it reaches 5% of the contract value. No interest will be paid on the Security Deposit under any circumstances. The total security deposit will be refunded only after expiry of defect liability period. However after successful completion of work, 50% of the security deposit can be released against bank guarantee from any Nationalised Bank as per approved format.

11.0 MOBILISATION OF MEN, MATERIALS AND MACHINERY:

11.1 All expenses towards mobilisation at site and de-mobilization including bringing in equipment, work force, materials, dismantling the equipments, clearing the site etc. shall be deemed to be included in prices quoted and no separate payment on account of such expenses shall be entertained.

11.2 It shall be the responsibility of the Contractor to provide, operate and maintain all necessary construction equipments, scaffoldings and safety, gadget, lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all jobs as per the specifications and within the schedule time of completion of work. Further, contractor shall also be responsible for obtaining temporary electric and water connection for all purposes. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

11.3 It shall be the responsibility of the contractor to obtain the approval for any revision and/ or modification of work desired by him from NPCC before implementation. Also such revisions and/or modifications if accepted / approved by the NPCC shall be carried at no extra cost to NPCC.

11.4 The procurement and supply in sequence and at the appropriate time of all materials and consumable shall be entirely the contractor's responsibilities and his rates for execution of work shall be inclusive of supply of all these items.

11.5 It is mandatory for the contractor to provide safety equipments and gadgets to its all workers, supervisory and Technical staff engaged in the execution of the work while working. The cost of the above equipments/ gadgets are deemed to be included in the rates quoted by the contractor for the items & works as per Bill of Quantities and contractor shall not be entitled for any extra cost in these regard. The above norm is to be strictly complied with at site. In case the contractor is found to be deficient in providing Safety Equipments/ Gadgets in the opinion of Engineer-in-charge, the Engineer-in-charge at his option can procure the same at the risk & cost of contractor and provide the same for the use of worksite and shall make the recoveries from the bills of the contractor for the same. The decision of the Engineer-in-charge shall be final and binding on contractor in this regard.

11.6 All designs, drawings, bill of quantities, etc.,shall be supplied to the contractor for works by NPCC in phased manner as the works progress. However it shall be the duty and responsibility of the contractor to bring to the notice of the NPCC in writing as to any variation, discrepancy or any other changes required and to obtain revised drawings and designs and / or approval of the NPCC in writing for the same.

11.7 One copy of contract documents including drawings furnished to the contractor shall be kept at the site and the same shall at all reasonable times be available for inspection.

11.8 All materials, construction plants and equipments etc. once brought by the contractor within the project area, will not be allowed to be removed from the premises without the written permission of the NPCC. Similarly all enabling works built by the contractor for the main construction undertaken by him, shall not be dismantled and removed without the written authority of the NPCC.

12.0 INCOME TAX DEDUCTION

Income tax deductions shall be made from all payments made to the contractor including advances against work done, as per the rules and regulations in force, in accordance with the Income Tax Act prevailing from time to time.

13.0 TAXES AND DUTIES

13.1 The contractor shall be responsible for the payment, wherever payable, at his own cost of all taxes such as excise duty, custom duty, sales tax, including the purchase tax, consignment tax, work contract tax, service tax or any other similar tax in the state concerned, turnover tax, toll tax, octroi charges, royalty, cess, levy and other tax (es) or duty (ies) which may be specified by local/ state/ central government from time to time on all materials, articles which may be used for this work or are otherwise payable. The rates quoted by him in the tender in bill of quantities shall be inclusive of all such taxes, duties,cess etc. The imposition of any new and/ or increase in the aforesaid taxes, duties, levies,cess (including fresh imposition of Work Contract Tax, Turnover Tax, Sales Tax on Work Contract or any other similar Tax) etc. during the currency of the contract shall be borne by contractor and shall not be paid or reimbursed to the contractor by NPCC. In the event of non-payment/default in payment of any octroi, royalty, cess, turnover tax, sales tax, including the purchase tax, consignment tax, work contract tax or any other similar tax in the state concerned, customs, excise or any other levy/tax including labour dues etc. by contractor/ supplier, NPCC reserves the right to with-hold the dues/ payments of contractor and make payment to local/state/ Central Government authorities or to labourers as may be applicable. The contractor should submit along with the tender, the" Registration certificates for Sales Tax on works contract" from the authorities concerned, otherwise appropriate recovery shall be made from his bills.

13.2 The rates quoted by the contractor shall be deemed to be inclusive of Sales Tax, Turnover Tax on works contract or any similar tax as per the Sales Tax Act applicable in the State and it shall not be reimbursed by NPCC. Tax deductions at source shall be made as per laws prevalent in the State.

13.3 The stamp duty and registration charges, if any, on the contract agreement levied by the Government or any other statutory body, shall be paid by the contractor.

13.4 It will be incumbent upon the Contractor to obtain a registration certificate as a dealer under the Local Sales Tax Act and the Central Sales Tax Act and necessary evidence to this effect shall be furnished by the Contractor to NPCC. Sales Tax on the transactions between the Contractor and his Sub-contractor/Vendors etc. shall not be reimbursed by NPCC. The Contractor shall be responsible for any taxes that may be levied hereunder on the transaction between Contractor and NPCC.

13.5 The bidder shall quote his rates inclusive of Turnover Tax/ Sales Tax on Works Contract payable to State Govt. along-with other taxes, duties, cess, levies etc. in conjunction with other terms and conditions.

13.6 **VALUE ADDED TAX (VAT)**

"The consideration agreed for the execution of said contract shall include the tax, duties, cess, etc. such as excise duty, service tax, VAT, which is leviable or may be levied in future under any State Law or the Central Law on execution of said contract, such taxes shall be borne by the contractor and shall not be reimbursed by NPCC. Further, if due to any variance in such tax, duties, cess etc. there is any increase in the taxes, the same shall also be borne by the contractor. Where under any of the State or the Central Law, there is requirement of deduction of tax at source, the same shall be deducted from the amount paid or payable to the contractor pursuant to this contract and shall be deposited to the Government authorities by NPCC. NPCC shall issue the documents/forms/ certificate as prescribed under the relevant law, in respect of the amount so deducted from the amount paid or payable to the contractor. NPCC shall have full rights to withhold the amount payable to the contractor in pursuant to this contract, if contractor does not fulfill his obligation under any State or Central Law relating to execution of said contract, in case the amount has already been paid, NPCC has the right to recover such payments from the contractor."

14.0 **ROYALTY ON MATERIALS:**

The contractor shall deposit royalty and obtain necessary permit for supply of bajri, stone, kankar, sand etc. from the local authorities and quoted rates shall be inclusive of royalty on any account whatsoever.

15.0 **RATES TO BE FIRM**

15.1 The item rates quoted by the tenderer shall be firm and fixed for the entire period of completion and till handing over of the work. No revision to Percentage rates or any escalation shall be allowed on account of any increase in prices of materials, labour, POL and Overheads etc or any other

statutory increase during the entire contract period or extended contract period.

15.2 The contractor shall be deemed to have inspected the site, it's surrounding and acquainted with the nature of the ground, accessibility of the site and full extent and
nature of all operations necessary for the full and proper execution of the contract, space for storage of materials, constructional plant, temporary works, restrictions on the plying of heavy vehicles in area, supply and use of labour, materials, plant, equipment and laws, rules and regulations, if any, imposed by the local authorities.

15.3 The rates and prices given in the bill of quantities are for completed and finished items of works and complete in all respects. It will be deemed to include all constructional plant, labour, supervision, materials, transport, all temporary works, erection, maintenance, contractor's profit and establishment/ overheads, together with preparation of designs & drawings pertaining to casting yard, shop drawing, fabrication drawing (if required), staging form work, stacking yard, etc. all general risk, taxes, royalty ,duties, cess, octroi and other levies, insurance liabilities and obligations set out or implied in the tender documents and contract.

15.4 Unless otherwise specified in the Bill of Quantities (BOQ), the contractor has to make his own arrangement for dewatering/ bailing out of water, effluent including strutting, shoring etc at every stage of work wherever required including working under foul condition as per direction of Engineer-in-Charge at his own cost and the contractor shall not be entitled for any extra payment, whatsoever, in this regard.

15.5 If required to make work site suitable for execution, contractor shall have to clear jungle including of rank vegetation, grass, trees etc., clear & clean existing drains/ canals (including strutting, shoring and packing cavities) and dispose them out of the site up-to any lead and lift as per direction of Engineer-in-charge. The contractor should inspect the site of work from this point of view. Unless otherwise specified in the Bill of Quantities, the cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the contractor shall not be entitled for any extra payment in this regard.

15.6 If any temporary/ permanent structure is encountered or safety of such structure in the vicinity is endangered due to execution of the project, the contractor has to protect the structures by any means as per the directions of the Engineer - in – Charge. If any damage caused to any temporary or permanent structure(s) in the vicinity is caused due to execution of the project, the contractor has to make good the same by any means as per directions of the Engineer - in – Charge. The contractor should inspect the site of work from this point of view. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the contractor shall not be entitled for any extra payment in this regard.

16.0 ESCALATION/ PRICE VARIATION

No claim on account of any price variation / Escalation on whatsoever ground shall be entertained at any stage of works. All item rates as per Bill of Quantities (BOQ) quoted by Contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation/price variation clause shall be applicable on this contract.

17.0 INSURANCE OF WORKS ETC.

Contractor is required to take **contractor's all risk policy** or erection all risk policy (as the case may be) from an approved insurance company in the joint name with NPCC and bear all costs towards the same for the full period of execution of works including the defect liability period for the full amount of contract against all loss of damage from whatever cause arising other than excepted risks for which he is responsible under the terms of the contract and in such manner that the NPCC and the contractor are covered during the period of construction of works and/or also covered during the period of defect liability for loss or damage:

a. The work and the temporary works to the full value of such works.

b. The materials, constructional plant, centering, shuttering and scaffolding materials and other things brought to the site for their full value.

Whenever required by NPCC, the contractor shall produce the policy or the policies of insurance and the receipts for payment of the current premiums.

18.0 INSURANCE UNDER WORKMEN COMPENSATION ACT

Contractor is required to take insurance cover under the Workman Compensation Act, 1923 amended from time to time from an approved insurance company and pay premium charges thereof. Wherever required by NPCC the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

19.0 THIRD PARTY INSURANCE

Contractor is required to take third party insurance cover for an amount of 5% (five percent) of contract value from an approved insurance company for insurance against any damage, injury or loss which may occur to any person or property including that of NPCC, arising out of the execution of the works or temporary works. Wherever required by NPCC the contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums. In case of failure of the contractor to obtain contractors all risk policy, insurance under workman compensation act and third party insurance as described above within one month from the date of commencement of work, running account

payments of the contractor shall be withheld till such time the contractor obtains the aforesaid insurance covers.

If the Contractor could not effect a comprehensive insurance cover against risks which he may be required to effect under the terms of the contract, then he shall give his attention to get the best insurance cover available and even in case of effecting a wider insurance cover than the one which the subsidiary of the General Insurance Company could offer, such an insurance is ought to be done after the NPCC's approval, by or through the subsidiary of the General Insurance Company.

20.0 INDEMNITY AGAINST PATENT RIGHTS

The contractor shall fully indemnify the NPCC from and against all claims and proceedings for or on account of any infringement of any patent rights, design, trademark or name or other protected rights in respect of any construction plant, machine, work or material used for in connection with the works or temporary works.

21.0 LABOUR LAWS TO BE COMPLIED BY THE CONTRACTOR

The contractor shall obtain a valid license under the contract labour (R & A) Act 1970 and the contract labour Act (R&A) Central Rules 1971 and amended from time to time, and continue to have a valid license until the completion of the work including defect liability period. The contractor shall also abide by the provision of the child labour (Prohibition and Regulation) Act. 1986 and amended from time to time. Any failure to fulfill this requirement shall attract the penal provisions of this contract arising out the resultant for non-execution of the work before the commencement of work.

21.1 No labour below the age of 18 years shall be employed on the work.

22.0 LABOUR SAFETY PROVISION

The contractor shall be fully responsible to observe the labour safety provisions.

23.0 OBSERVANCE OF LABOUR LAWS

23.1 The contractor shall be fully responsible for observance of all labour laws applicable including local laws and other laws applicable in this matter and shall indemnify and keep indemnified NPCC against effect or non observance of any such laws. The contractor shall be liable to make payment to all its employees, workers and sub- contractors and make compliance with labour laws. If NPCC or the client/ owner is held liable as "Principal Employer" to pay contributions etc. under legislation of Govt. or Court decision in respect of the employees of the contractor, then the contractor would reimburse the amount of such payments, contribution etc. to NPCC

and/ or same shall be deducted from the payments, security deposit etc. of the contractor.

23.2 The Contractor shall submit proof of having valid EPF registration certificate. In absence of the said certificate payment to the extent of 4.70% (four point seventy percent) of the value of the Running Account bill may be withheld by NPCC and shall be released only after the production of the EPF registration certificate from the concerned authorities. If it is incumbent upon NPCC to deposit withhold amount with EPF authorities, the withhold amount shall be deposited by NPCC with EPF authorities. In such a case NPCC hall not refund this withhold amount to the contractor even after the production of EPF registration certificate.

23.3 The contractor shall be liable to pay cess levied under the Building and other Construction Workers Welfare Cess Act, 1996, at such rates as may be notified by the Government from time to time. The NPCC shall deduct at source from every Running Account Bill of the Contractor, the said cess, at such rates for the time being prevailing, which shall not exceed 2% (two percent) but not be less than 1% (one percent) of the cost of construction incurred by the NPCC.

24.0 LAW GOVERNING THE CONTRACT

The Indian Laws shall govern this contract for the time being in force.

25.0 LAWS, BY LAWS RELATING TO THE WORK

The contractor shall strictly abide by the provisions, for the time being in force, of law relating to works or any regulations and bylaws made by any local authority or any water
& lighting agencies or any undertakings within the limits of the jurisdiction of which the work is proposed to be executed. The contractor shall be bound to give to the authorities concerned such notices and take all approvals as may be provided in the law, regulations or bylaws as aforesaid, and to pay all fees and taxes payable to such authorities in respect thereof.

26.0 EMPLOYMENT OF PERSONNEL

26.1 The contractor shall employ only Indian Nationals as his representatives, servants and workmen after verifying their antecedents and loyalty. He shall ensure that no personnel of doubtful antecedents and any other nationality in any way are associated with the works.

26.2 The NPCC shall have full power and without giving any reason to the contractor, immediately to get removed any representative, agent, servant and workmen or employees on account of misconduct negligence or incompetence or whose continued employment may in his opinion be undesirable.
The contractor shall not be allowed any compensation on this account.

7.0 TECHNICAL STAFF FOR WORK

27.1 The contractor shall employ at his cost the adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose the numbers to be deployed, their qualification, experience as decided by NPCC shall be final and binding on contractor. The contractor shall not be entitled for any extra payment in this regard. The technical staff should be available at site, whenever required by NPCC to take instructions.

27.2 Within 15 days of letter of intent, the contractor shall submit a site organisational chart and Resume including details of experience of the Project-in-Charge and other staff proposed by him and shall depute them on the Project after getting approval from Engineer-in-Charge. If desired by the contractor at a later date, the Project-in-Charge and other staff whose resume is approved by NPCC can be replaced with prior written approval of NPCC and replacement shall be with equivalent or superior candidate only. Decision of Engineer-in-Charge shall be final and binding on the contractor.

Even after approving the site organizational chart, the Engineer-in-Charge, due to nature and exigency of work, can direct the contractor to depute additional staff as per the requirement.

The removal of such additional staff from the site shall only be with the prior written approval of Engineer-in-Charge. The contractor shall not be paid anything extra whatsoever on account of deployment of additional staff and decision of the Engineer-in-Charge shall be final and binding on the contractor.

The desired numbers of personnel for this project are as follows:

Graduate Engineer: 2(Two) nos. Electrical Engineers .

27.3 In case the contractor fails to employ the staff as aforesaid he shall be liable to pay a reasonable amount not exceeding a sum of Rs. 20,000 (Rupees Twenty Thousand only) for each month of default in the case of each Graduate Engineer and Rs.15,000(Rupees Fifteen Thousand only) in the case of each Diploma Engineer. The decision of the Engineer-in-charge as to the number of Technical Staff to be adequate for the project and the period for which the required technical staff was not employed by the contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the contractor.

28.0 LAND FOR LABOUR HUTS/ SITE OFFICE AND STORAGE ACCOMMODATION

28.1 The contractor shall arrange the land for temporary office, storage accommodation and labour huts at his own cost and get the clearance of local authorities for setting up of labour camp and same is deemed to be included in the rates quoted by the contractor for the works. The contractor shall

ensure that the area of labour huts is kept clean and sanitary conditions are maintained as laid down by the local authorities controlling the area. The labour huts shall be so placed that it does not hinder the progress of work or access to the worksite. Contractor shall give the vacant possession of the land utilised for this purpose back after completion of the work. The security deposit of the contractor shall be released only after contractor demolishes all structures including foundations and gives back clear vacant possession of this land.

28.2 In the event the contractor has to shift his labour campus at any time during execution of the work on the Instructions of local authorities or as per the requirement of the work progress or as may be required by NPCC, he shall comply with such instructions at his cost and risk and no claim whatsoever shall be entertained on this account.

28.3 FURNISHED OFFICE ACCOMMODATION & MOBILITY AND COMMUNICATION TO BE PROVIDED BY CONTRACTOR TO NPCC

On acceptance of tender, the contractor at his own cost will provide a suitable furnished Unit office equipped with all facilities such as telephone, fax, internet, photocopier, computer & printer along with operator, regular electric & purified drinking water supply etc. as per the requirement of the project. The Unit office shall have an Air Conditioned (1.5 ton capacity) conference hall with furnishings. For any reasons, if the provision of the Unit office is delayed, the NPCC is at liberty to hire a building, which is suitable for this purpose furnish and occupy. The cost of furniture along with the rent, brokerage and advance if any payable to the house owner will be recovered from the contractor. This will be from the date of LOI/LOA till the completion of the defect liability period of the project and settlement & payment of final bill, which ever is later.

The details are as per clause no. 13 of Special conditions of contract.

The contractor shall also make sufficient arrangement for photography/ videography preferably by maintaining a camera/video camera at site so that video photographs can be taken of a specific activity at any point of time. The contractor shall also provide software like MS Project etc. for the purpose of preparing progress report etc.

28.4 The contractor shall make all arrangements for ground breaking ceremony/ inaugural function etc for the project as required and the cost towards it deemed to be included in his rates/offer.

28.5 UTILISATION OF WORK FORCE OF NPCC BY THE CONTRACTOR

NPCC may supply skilled/semiskilled work force if available in surplus and required by the contractor, like work supervisors, masons, wireman, plumber etc or any other category to assist the contractor in execution of the works at

the fixed recovery rate of Rs. 12,500/- per month for each number of workforce (Rupees twelve thousand five hundred only per month) or any higher rate mentioned in the "Memorandum to the Form of Tender" against each work force, till handing over of the whole project.

Recoveries, as stated above will be made by NPCC from the monthly running account bills. The contractor shall deploy such work force on the execution of the works as per their trades and deployment shall be for the entire contract period till completion and handing over of works.Further, the monthly rate per person is for the purpose of recovery only and in no way shall be construed to be the rate applicable for working out analysis, justification of rates, extra items, claims etc.

S.No.	Value of the Project as per agreement (Rs.in crores)	Number of work force of various categories
1.	From Rs.1 crore to 2.5 crore	1
2.	Above Rs.2.5 crore to 5 crore	3
3.	Above Rs.5 crore to 7.5 crore	4
4.	Above Rs.7.5 crore to 10 crore	6
5.	Above Rs.10 crore to 15 crore	8
6.	Above Rs.15 crore to 20 crore	10
7.	Above Rs.20 crore to 30 crore	12
8.	Above Rs.30 crore to 50 crore	15
9.	Above Rs.50 crore to 75 crore	20
10	Above Rs.75 crore up to any value.	25

29.0 WATCHING AND LIGHTING

The contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, lights, watchmen etc. during the progress of work as directed by Engineer-in-Charge.

30.0 HEALTH & SANITARY ARRANGEMENTS

In case of all labour directly or indirectly employed in work for the performance on the contractor's part of this contract, the contractor shall comply with all rules framed by Govt. from time to time for the protection of health and sanitary arrangements for workers.

31.0 WORKMEN'S COMPENSATION ACT

The contractor shall at all times indemnify NPCC and Owner against all claims for compensation under the provision of workmen's compensation Act or any other law in force, for any workmen employed by the contractor or his sub-contractor in carrying out the contract and against all costs and expenses incurred by the NPCC therewith.

32.0 MINIMUM WAGES ACT

The contractor shall comply with all the provisions of the minimum wages Act, 1948, contract labour Act (R&A) 1970, and rules framed there under and other labour laws/local laws affecting contract labour that may be brought into force from time to time.

33.0 LABOUR RECORDS

The contractor shall submit by the 4th & 19th of every month to the Engineer-in-Charge of NPCC a true statement, showing in respect of the second half of the proceeding month and the first half of the current month, respectively, of the following data: -

a) The number of the labour employed by him (category-wise).

b) Their working hours.

c) The wages paid to them.

d) The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused.

e) The number of female workers who have been allowed Maternity Benefits and the amount paid to them.

f) Any other information required by Engineer-in-Charge.

34.0 RELEASE OF SECURITY DEPOSIT AFTER LABOUR CLEARANCE

Security Deposit of the work shall not be refunded till the contractor produces a clearance certificate from the Labour Officer. As soon as the work is virtually complete, the contractor shall apply for the clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security deposit will be released if otherwise due.

35.0 SECURED ADVANCE AGAINST NON-PERISHABLE MATERIALS

Interest free secured advance up-to a maximum of 75 % (seventy five percent) of the Market Value of the Materials or the cost of materials as derived from the tendered item rate of the contractor, whichever is less, required for incorporation in the permanent works and brought to site and duly certified by NPCC site Engineer shall be paid to the Contractor for all non-perishable items as per CPWD norms. The advance will be paid only on

submission of Indemnity Bond in the prescribed pro-forma. The advance shall be recovered in full from next Running Account bill and fresh advance paid for the balance quantities of materials. The contractor shall construct suitable godown at the site of work for safe storing the materials against any possible damages due to sun, rain, dampness, fire, theft etc. at his own cost. He shall also employ necessary watch & ward establishment for the purpose at his costs and risks.

35.1 Payment of such advance shall be processed by NPCCL with a certificate from an Officer not below the rank of Executive Engineer as under:-

a) The quantities of material for which advance is to be made are required being claimed have actually been brought to site.

b) Full quantity of the material for which advance is to be made are required by the contractor for use on items of work for which rates for finished work have been agreed up on.

c) The quality of materials is as per desired specifications and having the desired test certificates from the approved laboratories.

36.0 MEASUREMENTS OF WORKS

Unless otherwise mentioned in the bill of quantities the measurements of works shall be done as per CPWD specifications (as specified in Technical Specification of the Tender) and if the same is not given in the CPWD Specifications, the same shall be measured as per latest relevant BIS codes in force.
The quantity of steel reinforcement and the structural steel sections incorporated in the work shall be measured & paid on the basis of standard coefficients of sections as per BIS Codes of practice.

37.0 PAYMENTS

37.1 The bill shall be submitted by contractor each month on or before the date fixed by the Engineer-in-Charge for all works executed in previous months. The contractor shall prepare computerized bills using the program as approved by Engineer-in-Charge as per prescribed format/ pro-forma. The Contractor shall submit five numbers of hard copies and one soft copy of floppy/ CD for all bills, subject to clause 37.3 herein below, the payment due to the contractor shall be made within fifteen days of getting the measurements verified from the Engineer-in-Charge or his subordinate/ representative and certification of bill by the Engineer-in-Charge.

37.2 All running payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed and / or accepted by NPCC and shall not preclude the recovery for bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the due performance of the Contract, or any part thereof, in this respect, or the accruing of any claim, nor shall it conclude, determine or affect in any way

the powers of the NPCC under these conditions or any of them as to the final settlement and adjustments of the accounts or otherwise, or in any other way vary/ affect the contract.

The contractor shall submit the final bill within three months of the completion of work, otherwise NPCC's certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on contractor

Each Running Bills should be accompanied by two sets of at-least 20 (twenty) photographs as per direction of Engineer-in-charge taken from various points depicting status of work as on Report/ Bill date along with Monthly Progress Report for the concerned month in the pro-forma to be given/ approved by Engineer-in-Charge. Intermittent progress Photographs as and when required shall also be provided by the Contractor at his own cost as per direction of Engineer-in-Charge. No payment of running account bill shall be released unless it is accompanied by progress photographs and Monthly Progress Report as above.

37.3 It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between NPCC and the contractor, the contractor shall become entitled to payment only after NPCC has received the corresponding payment(s) from the client/ Owner for the work done by the contractor. Any delay in the release of payment by the client/ Owner to NPCC leading to a delay in the release of the corresponding payment by NPCC to the contractor shall not entitle the contractor to any compensation/ interest from NPCC.

37.4 All payments shall be released by NPCC by Payee's Account cheque from any of its offices in India directly at the address notified by the Contractor (Postage charges shall be charged to the contractor's account). In case of Payments is made by Demand Draft at the request of the Contractor, Bank Commission charges shall be debited to the account of contractor.

38.0 WORK ON SUNDAYS, HOLIDAYS AND DURING NIGHT

For carrying out work on Sunday and Holidays or during night, the contractor will approach the Engineer-in-Charge or his representative at least two days in advance and obtain his permission.

The Engineer-in-Charge at his discretion can refuse such permission. The contractor shall have no claim on this account whatsoever. If work demand, the contractor shall make arrangements to carry out the work on Sundays, Holidays and in two, three shifts with the approval of Engineer-in-Charge at no extra cost to NPCC.

39.0 NO IDLE CHARGES TOWARDS LABOUR OR P&M ETC.

No idle charges or compensation shall be paid for idling of the contractor's labour, staff or P&M etc. on any ground or due to any reason whatsoever. NPCC will not entertain any claim in this respect.

40.0 WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS AND ORDERS ETC.

The contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work assigned by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings.

The contractor shall comply with the provisions of the contract and execute the works with care and diligence and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these is specified or is reasonably inferred from the contract. The contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

41.0 DIRECTION FOR WORKS

41.1 All works to be executed under the contract shall be executed under the directions and subject to approval in all respects of the Engineer-in-Charge of NPCC who shall be entitled to direct at what point or points and in what manner the works are to be commenced and executed.

41.2 The Engineer-in-Charge and his representative shall communicate or confirm their instructions to the contractor in respect of the execution of work during their site inspection in a 'Works Site Order Book' maintained at the site office of Engineer-in- charge. The contractor or his authorized representative shall confirm receipt of such instructions by signing against the relevant orders in the book.

42.0 ORDER OF PRECEDENCE OF DOCUMENTS

In case of difference, contradiction, discrepancy, dispute with regard to Conditions of Contract, specifications, Drawings, Bill of quantities and rates quoted by the Contractor and other documents forming part of the contract, the following shall prevail in order of precedence.

i) Letter of Intent, Letter of Award, Work Order, Agreement along with statement of agreed variations and its enclosures.

ii) Bill of Quantity / Schedule of Quantities

iii) Special Condition of Contract.

iv) Technical specifications (General, Additional and Technical Specification) as give in Tender documents.

v) General Conditions of Contract.

vi) Drawings.

vii) CPWD specifications (in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of tenders.

viii) Relevant B.I.S. Codes.

43.0 TIME SCHEDULE & PROGRESS

43.1 Time allowed for carrying out all the works as entered in the tender shall be as mentioned in the Tender conditions. The Date of start of contract shall be reckoned 10 days after the date of issue of letter/FAX/E-mail of intent/acceptance of tender. Time shall be the essence of the contract and contractor shall ensure the completion of the entire work within the stipulated time of completion.

43.2 The contractor shall also furnish within 10 days of date of reciept of letter of Intent, a CPM network/ PERT chart/ Bar Chart for completion of work within stipulated time. This will be duly got approved from NPCC. This approved Network/ PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.

43.3 Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/Network. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-in-Charge.

43.4 During the currency of the work the contractor is expected to adhere to the time schedule on miles stone and total completion and this adherence will be a part of Contractor's performance under the contract. During the execution of the work contractor is expected to participate in the review and updating of the Network/ BAR CHART undertaken by the NPCC. These reviews may be undertaken at the discretion of NPCC either as a periodical appraisal measure or when the quantum of work order on the contractor is substantially changed through deviation orders or amendments. The review shall be held at site or any of the offices of NPCC/ owner / consultant at the sole discretion of NPCC. The contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time to the contractor.

43.5 Contractor shall submit fortnightly/ Monthly (as directed by Engineer-in-Charge) progress reports (5 copies) on a computer based program (program

and software to be approved by Engineer-in-Charge) highlighting status of various activities and physical completion of work.

43.6 The contractor shall send completion report with as built drawings and maintenance schedule to the office of Engineer-in-Charge, of NPCC in writing within a period of 30 days of completion of work.

44.0 WATER AND ELECTRICITY

The contractor shall make his own arrangement for Water & Electrical power for construction and other purposes at his own cost and pay requisite electricity and water charges. The contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

45.0 MATERIALS TO BE PROVIDED BY THE CONTRACTOR

The contractor shall, at his own expense, provide all materials, required including Cement & Steel for the works.

The contractor shall at his own expense and without delay, supply to the Engineer-in-Charge samples of materials to be used on the work and shall get the same approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if required by the Engineer-in- Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply.
The contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and bear all charges and cost of testing unless specifically provided or otherwise elsewhere in the contract or specifications. The Engineer-in-Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance and cost in obtaining the right and visit to such access.

The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials, which in his opinion are not in accordance with the specifications and in case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full power to require other proper materials to be substituted thereof and in case of default, the Engineer-in-Charge may cause the same to the supplies and all costs which may require such removal and substitution shall be borne by the contractor.

45.1 CEMENT AND CEMENT GODOWN

Cement shall be procured by Contractor confirming to BIS: 8112 Specification latest edition or higher Grade as directed by the Engineer-in-Charge. The cement shall be procured directly from the reputed manufacturers/ stockiest, which will have to be got approved from NPCC in advance. Relevant vouchers and test certificates will be produced as and when required. The cement shall be stored by the contractor in such suitable covered and lockable stores, well protected from climate and atmospheric affect. The cement godown shall be constructed by the contractor as per CPWD specifications at his own cost. The cement in bags shall be stored in godowns in easy countable position. Cement bags shall be used on first in first out basis. Cement stored for beyond 90 days will be required to be tested at contractors cost, before use in works.

46.2 STEEL & STEEL STOCKYARD

Steel confirming to BIS specifications (latest edition) shall be procured by the contractor directly from reputed manufacturers/producers as per approved list of NPCC. The manufacturer has to give a certificate that the material supplied is not a re-rolled product. The contractor will produce relevant vouchers & test certificates. Re-rolled sections will not be allowed.

Reinforcement steel, structural steel shall be stored and stacked in such manner so as to facilitate easy identification, removal etc. The contractor shall take proper care to prevent direct contact between the steel and the ground/ water for which he shall provide necessary arrangement at his own cost including ensuring proper drainage of area to prevent water logging as per directions of the Engineer-in-Charge. Steel shall also be protected, by applying a coat of neat cement slurry over the bars for which no extra payment shall be made.

Test certificates for each consignment of steel shall be furnished and tests to be got carried out from the authorized laboratory as per the directions of Engineer-in-Charge, before incorporating the materials in the work.

46.0 SCHEDULE OF QUANTITIES / BILL OF QUANTITIES/ QUANTITY VARIATION

46.1 The work under this contract shall be carried out as per BOQ cum rate schedule. In case the description /specification as per BOQ are found to be incomplete CPWD specifications shall be followed. Quantities mentioned in the rate schedule are approx. only and liable for variation due to change of scope of work/variation in schedule of quantities, changes in design etc. The tenderers shall undertake to execute actual quantities as per advise of NPCC engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site in payments will also be regulated for the same. The quantities indicated against each item may vary to any extent and no compensation will be payable in variation of individual quantity to the extent sanction is available.

46.2 All items of work in the bill of quantities/ schedule of quantities shall be carried out as per the CPWD specifications for electrical works-2006 and subsequent amendments made in specification, drawings and instructions of the Engineer-in-Charge of NPCC and the rates shall include for supply of required materials including proper storage, consumables, skilled & unskilled labour, supervision and tools, tackles, plant & machinery complete as called for in the detailed specifications and conditions of the contract. The Contractor without the approval of the NPCC shall execute no item, which is not covered in the bill of quantities. In case any Extra/Substituted item is carried out without specific-approval, the same will not be paid.

48.0 INDIAN STANDARDS

Wherever any reference is made to any IS in any particular specifications, drawings or bill of quantities, it means the Indian Standards editions with the amendments current at the last date of receipt of tender documents.

50.0 PROPRIETARY MATERIALS

50.1 The following proprietary materials shall be brought to site after the approval of NPCC.

a) L T Cables
b) H T Cable
c) Cement
d) Steel
e) D G Sets
f) Feeder Pillar.
f) MCCB
g) Any other materials as per discretion of the NPCC.

50.2 The quantity of proprietary materials shall be measured and recorded in the Measurement books and signed by the Contractor and the Engineer-in-Charge as a check to ensure that the required quantities as required for execution of works as per specifications have to be brought to site for incorporation in the work.

50.3 Proprietary materials brought at site shall be stored as directed by NPCC and those already recorded in Measurement book, shall be suitably marked for identification.

50.4 The contractor shall ensure that the proprietary materials are brought to site in original sealed containers or packing bearing manufacturer's markings and brands (except where the quantity required is a fraction of the smallest packing). Materials not complying with this requirement shall be rejected. The empty containers of such proprietary materials shall not be destroyed/ disposed-off without the permission of NPCC.

50.5 The contractor shall produce receipted vouchers showing quantities of the materials to satisfy Engineer-in-Charge that the materials comply with the specifications. These vouchers shall be endorsed, dated and initialed by Engineer-in-Charge giving the contract number and name of work and a certified copy of each such voucher signed both by NPCC and the Contractor shall be kept on record.

51.0 RECORDS OF CONSUMPTION OF MATERIALS

51.1 For the purpose of keeping a record of materials (Steel & Cement) received at site and consumed in works, the contractor shall maintain a properly bound register in the form approved by the NPCC, showing columns like quantity received and used in work and balance in hand etc. This register shall be signed daily by the contractor's representative and NPCC's representative.

51.2 The register of material shall be kept at site in the safe custody of NPCC's Engineer during progress of the work. This provision will not, however, absolve the contractor from the quality of the final product.

51.3 In case cement or steel quantity consumed is lesser as compared to the theoretical requirement of the same as per CPWD specifications/ norms, the work will be devalued and/ or a penal rate (i.e. double the rate at which cement/ steel purchased last) recovery for lesser consumption of cement/ steel shall be made in the rates of the work done subject to the condition that the tests results fall within the acceptable criteria as CPWD (as the case may be) specifications otherwise the work shall have to be dismantled and redone by the contractor at no extra cost.

In case of cement, if actual consumption is less than 98% of the theoretical consumption, a recovery shall be effected from the contractor's dues at the penal rate(Prescribed under relevant clauses of I.S.code) for the actual quantity, which is lower than 98% of theoretical consumption.

52.0 MATERIALS AND SAMPLES

52.1 The materials/ products used on the works shall be one of the approved make/ brands out of list of manufacturers/ brands/ makes given in the tender documents. The contractor shall submit samples/ specimens out of approved makes of materials/ products to the Engineer-in-Charge for prior approval. In exceptional circumstances Engineer-in-Charge may allow alternate equivalent makes/ brands of products/ materials at his sole discretion. The final choice of brand/ make shall remain with the Engineer-in-Charge, whose decision in this matter shall be final and binding and nothing extra on this account shall be payable to the Contractor.

In case no make or brand of any materials, articles, fittings and accessories etc. is specified, the same shall comply with the relevant Indian Standard Specifications and shall bear the ISI/BIS mark.

The Engineer of NPCC and the owner shall have the discretion to check quality of materials and equipments to be incorporated in the work, at source

of supply or site of work and even after incorporation in the work. They shall also have the discretion to check the workmanship of various items of work to be executed in this work. The contractor shall provide the necessary facilities and assistance for this purpose.

52.2 The above provisions shall not absolve the contractor from the quality of final product and in getting the material and workmanship quality checked and approved from the Engineer-in-Charge of NPCC.

52.3 The contractor shall well in advance, produce samples of all materials, articles, fittings, accessories etc. that he proposes to use and get them approved in writing by NPCC. The materials articles etc. as approved shall be labeled as such and shall be signed by NPCC and the Contractor's representative.

52.4 The approved samples shall be kept in the custody of the Engineer- in-Charge of NPCC till completion of the work. Thereafter the samples except those destroyed during testing shall be returned to the contractor. No payment will be made to the contractor for the samples or samples destroyed in testing.

52.5 The brands of all materials, articles fittings etc. approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded in the site order book.

52.6 The contractor shall set up and maintain at his cost, a field-testing laboratory for all day-to-day tests at his own cost to the satisfaction of the Engineer-in-Charge. This field-testing laboratory shall be provided with equipment and facilities to carry out all mandatory field tests as per CPWD specifications. The laboratory building shall be constructed and installed with the appropriate facilities; Temperature and humidity controls shall be available wherever necessary during testing of samples.

All equipments shall be provided by the Contractor so as to be compatible with the testing requirements specified. The Contractor shall maintain all the equipments in good working condition for the duration of the contract.

The Contractor shall provide approved qualified personnel to run the laboratory for the duration of the Contract. The number of staff and equipment available must at all times be sufficient to keep pace with the sampling and testing programme as required by the Engineer-in-charge.

The Contractor shall fully service the site laboratory and shall supply everything necessary for its proper functioning, including all transport needed to move equipment and samples to and from sampling points on the site, etc.

The Contractor shall re-calibrate all measuring devices whenever so required by the Engineer-in-charge and shall submit the results of such measurements

without delay. All field tests shall be carried out in the presence of NPCC representative. All costs towards samples, materials, collection, transport, manpower, testing etc. shall be borne by the Contractor and are deemed to be included in the rates quoted by him in the bill of quantities.

53.0 TESTS AND INSPECTION

53.1 The contractor shall carry out the various mandatory tests as per specifications and the technical documents that will be furnished to him during the performance of the work.

All the tests on materials, as recommended by CPWD and relevant Indian Standard Codes or other standard specifications (including all amendments current at the last date of submission of tender documents) shall be got carried out by the contractor at the field testing laboratory or any other recognized institution/ laboratory, at the direction of the NPCC. All testing charges, expenses etc. shall be borne by the contractor.

All the tests, either on the field or outside laboratories concerning the execution of the work and supply of materials shall be got carried out by the contractor or NPCC at the cost of the Contractor.

53.2 WORKS TO BE OPEN TO INSPECTION

All works executed or under the course of execution in pursuance of this contract shall at all times be open to inspection and supervision of the NPCC. The work during its progress or after its completion may also be inspected, by Chief Technical Examiner of Government of India (CTE) and/ or an inspecting authority of State Government of State in which work is executed and/or by third party checks by owner/ clients. The compliance of observations/ improvements as suggested by the inspecting officers of NPCC/CTE/ State authorities/ Owners shall be obligatory on the part of the Contractor at the cost of contractor.

54.0 CARE OF WORKS

From the commencement to the completion of works and handing over, the contractor shall take full responsibility for care thereof all the works and in case of any damage/loss to the works or to any part thereof or to any temporary works due to lack of Precautions or due to negligence on part of Contractor, the same shall be made good by the Contractor.

55.0 WORK IN MONSOON AND DEWATERING

The execution of the work may entail working in the monsoon also. The contractor must maintain labour force as may be required for the job and plan and execute the construction and erection according to the prescribed schedule. No special/ extra rate will be considered for such work in monsoon.

The contractor's rate shall be considered inclusive of cost of dewatering required if any and no extra rate shall be payable on this account.

56.0 NO COMPENSATION FOR CANCELLATION/ REDUCTION OF WORKS

If at any time after the commencement of the work the NPCC shall for any reason whatsoever is required to abandon the work or is not require the whole work thereof as specified in the tender to be carried out, the Engineer-in-Charge shall give notice in writing of the fact to the contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out or fore-closure, neither shall he have any claim for compensation by reason of any alterations having been made in the original specifications, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated. Provided that the contractor shall be paid the charges on the cartage only of materials actually and bonafide brought to the site of the work by the contractor and rendered surplus as a result of the abandonment or curtailment of the work or any portion thereof and then taken back by the contractor, provided however, that the Engineer-in-Charge shall have in all such cases the option of taking over all or any such materials at their purchase price or at local current rates whichever may be less.

In the case of such stores having been issued by NPCC and returned by the Contractor to NPCC, credit will be given to him by the Engineer-in-Charge at rates not exceeding those at which they were originally issued to him after taking into consideration any deduction for claims on account of any deterioration or damage while in the custody of the contractor and in this respect the decision of the Engineer-in-Charge shall be final.

57.0 RESTRICTION ON SUBLETTING

57.1 The contractor shall not sublet or assign the whole or part of the works except where otherwise provided, by the contract and even then only with the prior written consent of the NPCC and such consent if given shall not relieve the contractor from any liability or obligation under the contract and he shall be responsible for the acts, defaults or neglects of any sub-contractor, his agents, servants or workman as full as if they were the acts, defaults or neglects of the contractor, his agent, servants or workman provided always that the provision of labour on piece work basis shall not be deemed to be a subletting under this clause.

57.2 The contractor may entrust specialized items of works to the agencies specialized in the specific trade. The contractor shall give the names and details of such firm whom it is going to employ for approval of NPCC. These details shall include the expertise, financial status, technical manpower, equipment, and resources and list of works executed and on hand of the specialist agency.

58.0 PROHIBITION OF UNAUTHORISED CONSTRUCTION & OCCUPATION

No unauthorized buildings, construction of structures should be put up by the contractor anywhere on the project site, neither any building built by him shall be un-authorisedly occupied by him or his staff.

59.0 CO-ORDINATION WITH OTHER AGENCIES

Work shall be carried out in such a manner that the work of other Agencies operating at the site is not hampered due to any action of the Contractor. Proper Co-ordination with other Agencies will be Contractor's responsibility. In case of any dispute the decision of NPCC shall be final and binding on the contractor. No claim whatsoever shall be admissible on this account.

60.0 SETTING OUT OF THE WORKS

The contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the works.
If at any time during the progress of works, shall any error appear or arise in the position, levels, dimensions or alignment of any part of the works, the contractor shall at his own expenses rectify such error to the satisfaction of Engineer-in- charge. The checking of any setting out or of any line or level by the engineers of NPCC shall not in any way relieve the contractor of his responsibility for the correctness.

61.0 NOTICE BEFORE COVERING UP THE WORK

The contractor shall give not less than seven days notice before covering up or otherwise placing beyond the reach of measurement any work, to the Engineer-in-charge in order that the same may be inspected and measured. If any work is covered up or placed beyond the reach of Inspection/ measurement without such notice or his consent being obtained the same shall be uncovered at the contractor's expenses and he shall have to make it good at his own expenses.

62.0 SITE CLEARANCE

62.1 The contractor shall ensure that the working site is kept clean and free of obstructions for easy access to job site and also from safety point of view. Before handing over the work to the NPCC the contractor shall remove all temporary structures like the site offices, cement godown, stores, labour hutments etc., scaffolding rubbish, left over materials tools and plants, equipments etc., clean and grade the site to the entire satisfaction of the Engineer-in-charge. If this is not done the same will be got done by NPCC at his risk and cost.

62.2 The contractor shall clean all floors, remove cement/ lime/ paint drops and deposits, clean joinery, glass panes etc., touching all painter's works and carry out all other necessary items of works to make the premises clean and tidy before handing over the building, and the Percentage rates quoted by the contractor shall be deemed to have included the same.

63.0 VALUABLE ARTICLES FOUND AT SITE

All gold, silver and other minerals of any description and all precious stones, coins, treasure, relics, antiques and all other similar things which shall be found in, under or upon the site, shall be the property of the owner/ Government and the contractor shall duly preserve the same to the satisfaction of Engineer-in-charge and shall from time to time deliver the same to such person or persons indicated by the NPCC.

64.0 MATERIALS OBTAINED FROM DISMANTLEMENT TO BE OWNER'S PROPERTY

All materials like stone, boulders and other materials obtained in the work of dismantling, excavation etc. will be considered owner/ government property and may be issued to the contractor by the owner/ NPCC, if required for use in this work at rate s approved by NPCC or the contractor may be asked to dispose these items at his cost.

65.0 SET-OFF OF CONTRACTOR'S LIABILITIES

NPCC shall have the right to deduct or set off the expenses incurred or likely to be incurred by it in rectifying the defects and/or any claim under this agreement against the Contractor from any or against any amount payable to the contractor under this agreement including security deposit and proceeds of performance guarantee.

66.0 MATERIALS PROCURED WITH THE ASSISTANCE OF NPCC

If any material for the execution of this contract is procured with the assistance of NPCC either by issue from its stores or purchase made under orders or permits or licenses obtained by NPCC, the contractor shall hold and use the said materials economically and solely for the purpose of this contract and shall not dispose them without the permission of Engineer-in-charge. The contractor, if required by the NPCC, shall return all such surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination on whatsoever reason, on being paid or credited such price as the NPCC shall determine having due regard to the conditions of materials.

67.0 ALTERATION IN SPECIFICATION, DESIGN & DRAWING

67.1 The Engineer-in-Charge shall have power to make any alterations in, omissions from, additions to or substitutions for, the original

specifications, drawings, designs and instructions that may appear to him to be necessary during the progress of the work, and the contractor shall carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions, or substitutions shall not invalidate the contract and any altered, additional or substituted work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work. The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original contract work, and the certificate of the Engineer- in-Charge shall be conclusive as to such proportion. Over and above this, a further period to the extent of 25 percent of such extension shall be allowed to the contractor. The rates for such additional, altered or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order:

i) The rates for the additional, altered or substituted work are specified in the contract for the work, the contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the contract for the work.

ii) If the rates for the additional, altered or substituted work are not specifically provided in the contract for the work, the rates will be derived from the rates for a nearest similar item of work as are specified in the contract for the work. In case of composite tenders where two or more schedule of quantities/ bill of quantities form part of the contract, the rates shall be derived from the nearest similar item in the schedule of quantities / bill of quantities of the particular part of work in which the deviation is involved failing that from the lowest of the nearest similar item in other schedule of quantity. The opinion of the Engineer-in-Charge as to whether or not the rate can be reasonably so derived from the item in this contract will be final and binding on the contractor.

iii) If the altered, additional or substituted work includes any work for which no rate is specified in the contract for the work and which cannot be derived in the manner specified in sub para (i) and (ii) from the similar class of work in the contract then such work shall be carried out at the rates entered in the Schedule of rates-Civil & Electrical works (DSR-2007) plus the percentage above or below to the quoted rates.

iv) If the rates for the altered, additional or substituted work cannot be determined in the manner specified in sub-clauses (i) to (iii) above, then the contractor shall, within 7 days of the date of receipt of order to carry out the work, inform the Engineer-in-Charge of the rate which it is his intention to charge for such class of work, supported by analysis of the rate or rates claimed, and the Engineer-in-Charge shall determine the rate or rates on the basis of prevailing market rates of the material, Labour, T&P etc. plus 10% (Ten percent) to cover the contractors supervision, overheads and profit and pay the contractor accordingly. The opinion of the Engineer-in-Charge as to

the current market rates of materials and quantum of labour involved per unit of measurements will be final and binding on the contractor.

However, the Engineer-in-Charge, by notice in writing, will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he may consider advisable. But under no circumstances, the contractor shall suspend the work on the plea of non-settlement of rates of items falling under the clause.

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68.0 ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK

If it shall appear to the Engineer-in-Charge or his authorized subordinate in charge of the work or to the Chief Technical Examiner or to any other inspecting agency of Government/ State Government/ Owner where the work is being executed, that any work has been executed with unsound, imperfect, or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the contractor shall on demand in writing which shall be made within six months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, Certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-in-Charge in his demand aforesaid, then the Contractor shall be liable to pay compensation at the rate of one percent of the estimated amount put to tender for every day not exceeding ten days, while his failure to do so shall continue and in the case of any such failure, the Engineer-in-Charge may rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of as the case may be at the risk and expense in all respects of the contractor.

69.0 POSSESSION PRIOR TO COMPLETION

69.1 NPCC shall have the right to take possession of or use any completed or partially completed work or part of the work. Such possession or use shall not be deemed to be any acceptance of any work not completed in accordance with the contract agreement. If such prior possession or use by NPCC delays the progress of work an equitable adjustment in the time of completion will be made and the contract agreement shall be deemed to be modified accordingly. The decision of NPCC in this case shall be final binding and conclusive.

69.2 When the whole of the works or the items or the groups of items of work for which separate periods of completion have been specified have been completed the contractor will give a notice to that effect to the Engineer-in-Charge in writing. The Engineer in-Charge shall within 7 days of the date of

receipt of such notice inspect the works and either the Engineer-in-Charge issues to the contractor a completion certificate stating the date on which in his opinion the works were completed in accordance with the contract or gives instructions in writing to the contractor specifying the balance items of work which are required to be done by the contractor before completion certificate could be issued. The Engineer-in-Charge shall also notify the contractor of any defect in the works affecting completion.

69.3 The contractor shall during the course of execution prepare and keep updated a complete set of 'as built' drawings to show each and every change from the contract drawings, changes recorded shall be countersigned by the Engineer-in-Charge and the contractor. Four copies of 'as built' drawings shall be supplied to NPCC by the contractor within 30 days of the completion. All costs incurred in this respect shall be borne by the contractor only.

70.0 COMPENSATION FOR DELAY AND REMEDIES

70.1 If the contractor fails to maintain the required progress in terms of relevant clause of Special Conditions of Contract, to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the NPCC on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below or such smaller amount as the Engineer in charge (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / week (as applicable) that the progress remains below that specified in the relevant clause in Special Conditions of Contract or that the work remains incomplete.

This will also apply to items or group of items for which a separate period of completion has been specified.

i) Completion period (as originally stipulated) not exceeding 3 month @ 1% per day

ii) Completion period (as originally stipulated) exceeding 3 months @ 1% per week

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with NPCC.

70.2 CANCELLATION / DETERMINATION OF CONTRACT IN FULL OR PART

Subject to other provisions contained in this clause the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and / or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

i) If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or un-workmanlike manner shall omit to comply with the requirement of such notice for a period of seven days thereafter; or

ii) If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge; or

iii) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge; or

iv) If the contractor persistently neglects to carry out his obligations under the contract and / or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge; or

v) If the contractor shall offer or give or agree to give to any person in NPCC service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any action in relation to the obtaining or execution of this or any other contract from NPCC; or

vi) If the contractor shall obtain a contract with NPCC as a result of wrong tendering or other non-bona-fide methods of competitive tendering; or

vii) If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administrative of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to

do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or

viii) If the contractor being a company, shall pass a resolution or the Court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or

ix) If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days; or

x) If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of the labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without and prior written approval of the Engineer-in-Charge.

When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge may without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to NPCC, by a notice in writing ,cancel the contract as a whole or only such items of work in default from the Contract.

The Engineer-in-Charge shall on such cancellation by the NPCC have powers to:

a) Take possession of site and any materials, constructional plant, implements, stores, etc. thereon; and/ or

b) Carry out the incomplete work by any means at the risk and cost of the contractor; and/ or

c) To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination or rescission the full security deposit recoverable under the contract shall be liable to be forfeited and un-used materials, construction plants,
implements, temporary buildings, etc. shall be taken over and shall be absolutely at the disposal of the NPCC. If any portion of the Security Deposit has not been paid or received it would be called for and forfeited; and/ or

d) To employ labour paid by the Department and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer-in-Charge shall be final and conclusive) against the contractor and crediting him with the value of the work done in all

respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Engineer-in-Charge as to the value of the work done shall be final and conclusive against the contractor provided always that action under the sub-clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor; and/ or

e) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof as shall be un-executed or delayed with reference to the General Conditions of Contract clause / relevant clause of Special Conditions of Contract, out of his hands and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Engineer-in-Charge shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by NPCC under his contract or on any other account whatsoever or from his security deposit or the proceeds of sales of unused materials, construction plants, implements temporary buildings etc. thereof or a sufficient part thereof as the case may be. If the expenses incurred by the NPCC are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor; and/ or

f) By a notice in writing to withdraw from the contractor any items or items of work as the Engineer-in-charge may determine in his absolute discretion and get the same executed at the risk and cost of the contractor.

Any excess expenditure incurred or to be incurred by NPCC in completing the works or part of the works or the excess loss or damages suffered or may be suffered by NPCC as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to NPCC in law be recovered from any moneys due to the contractor on any account, and if such moneys are not sufficient the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractor's unused materials, constructional plant, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the contractor under the contract and if thereafter there be any balance outstanding from the contractor, it shall be recovered in accordance with the provisions of the contract and law.

Any sums in excess of the amounts due to NPCC and unsold materials, constructional plant etc. shall be returned to the contractor, provided always that if cost or anticipated cost of completion by NPCC of the works or part of

the works is less than the amount which the contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the contractor.

In the event of anyone or more of the above courses being adopted by the Engineer-in-Charge the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

Provided further that if any of the recoveries to be made, while taking action as per (d) and/or (e) above, are in excess of the security deposit forfeited, these shall be limited to the amount by which the excess cost incurred by the Department exceeds the security deposit so forfeited.

70.3 CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION IS NOT TAKEN

In any case in which any of the powers conferred upon the Engineer-in-Charge by relevant clause thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to the used for the execution of the work / or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor and/or direct the contractor or his authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

70.4 TIME ESSENCE OF CONTRACT & EXTENSION FOR DELAY

The time allowed for execution of the Works as specified in the terms of contract or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence from the 10th Day or such time period as mentioned in letter of Intent/ award after the date on which the Engineer-in-Charge issues written orders to commence the

work. If the Contractor commits default in commencing the execution of the work as aforesaid, the Executing Agency shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money absolutely.

70.4.1 Within 10 (Ten) days of Letter of Intent, the Contractor shall submit a Time and Progress Chart (CPM/ PERT/ Quantified Bar Chart) and get it approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time stipulated in the Contract documents, and further to ensure good progress during the execution of the work.

The compensation for delay as per clause 50.1 and 50.1 shall be leviable at intermediate stages also, in case the required progress is not achieved to meet the above time deadlines of the completion period and/ or milestones of time and progress chart, provided always that the total amount of Compensation for delay to be paid under this condition shall not exceed 10% of the tendered value of work".

70.4.2 If the work(s) be delayed by:

i) force-majeure or

ii) abnormally bad weather, or

iii) serious loss or damage by fire, or

iv) civil commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or

v) delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract, or

vi) non-availability of stores, which are responsibility of the NPCC or,

vii) non availability or break down of tools and plant to be supplied or supplied by NPCC or,

viii) any other cause which, in the absolute discretion of the NPCC, is beyond the Contractor's control, then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably

required to the satisfaction of the Engineer-in-Charge to proceed with the works.

70.4.3 Request for extension of time, to be eligible for consideration, shall be made by the Contractor in writing with in fourteen days of the happening of the event causing delay on the prescribed form.

The Contractor will indicate in such a request the period for which extension is desired.

In any such case NPCC may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request

71.0 WITHHOLDING AND LIEN IN RESPECT OF SUMS DUE FROM CONTRACTOR

71.1 Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the contractor, NPCC shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, NPCC shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, NPCC shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with NPCC pending finalization or adjudication of any such claim.

71.2 It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or NPCC will be kept withheld or retained as such by the Engineer-in-Charge or NPCC till the claim arising out of or under the contract is determined by the competent court and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the NPCC shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may be whether in his individual capacity or otherwise.

NPCC shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc, to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid

in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for NPCC to recover the same from him in the

manner prescribed in Clause 51.1 above or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by NPCC to the contractor, without any interest thereon whatsoever.

71.3 LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or by NPCC against any claim of the Engineer-in-Charge or NPCC in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer-in-Charge or the NPCC.
It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the NPCC will be kept withheld or retained as such by the Engineer-in-Charge or the NPCC or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be, and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

72.0 DEFECTS LIABILITY PERIOD

The contractor shall be responsible for the rectification of defects in the works for a period of twelve months from the date of taking over of the works by the Owner/ Client. Any defects discovered and brought to the notice of the contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the contractor fails to carry out these rectifications, the same may without prejudice to any other right or remedy available, be got rectified by NPCC at the cost and expense of the contractor.

73.0 FORCE MAJEURE

Any delay in or failure of the performance of either party hereto shall not constitute default hereunder to give rise to any claims for damages, if any to the Extent such delay or failure of performance is caused by occurrences such as acts of God or the public enemy, expropriation, compliance with any order or request of Government authorities, acts of war, rebellions, sabotage fire, floods, strikes, or riots (other than contractor's employees). Only extension of

time shall be considered for Force Majeure conditions as accepted by NPCC. No adjustment in contract price shall be allowed for reasons of force majeure.

74.0 ARBITRATION - Deleted

75.1 JURIDICTION

The agreement shall be executed at Raipur on non-judicial stamp paper purchased in Raipur and the Courts at Raipur/Bilaspur alone will have jurisdiction to deal with matters arising there from, to the exclusion of all other courts.

76.0 SUSPENSION OF WORKS

(a) The contractor shall, on receipt of the order in writing of the Engineer-in-charge, suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-charge may consider necessary for any of the following reasons:

i) On account of any default on part of the contractor, or

ii) For proper execution of the works or part thereof for reason other than the default of the contractor, or

iii) For safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-charge.

(b) If the suspension is ordered for reasons (ii) and (iii) in sub-para (a) above.

i) The contractor shall be entitled to an extension of the time equal to the period of every such suspension plus 25%. No adjustment of contract price will be allowed for reasons of such suspension.

ii) In the event of the Contractor treating the suspension as an abandonment of the Contract by NPCC, he shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of the work in full.

77.0 TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR

Without prejudice to any of the right or remedies under this contract if the contractor dies, the Engineer-in-charge shall have the option of terminating the contract without compensation to the contractor.

78.0 CLARIFICATION AFTER TENDER SUBMISSION

Tenderer's attention is drawn to the fact that during the period, the bids are under consideration, the bidders are advised to refrain from contacting by any means, the NPCC and/or his employees/ representatives on matters related to the bid under consideration and that if necessary, NPCC will obtain clarifications in writing or as may be necessary. Duly authorized Tender Scrutiny Committee does the tender evaluation and process of award of works and this committee is authorised to discuss and get clarification from the tenderers.

79.0 ADDENDA/ CORRIGENDA

Addenda/Corrigenda to the tender documents may be issued prior to the date of opening of the tender to clarify or effect modification in specification and/or contract terms included in various tender documents. The tenderer shall suitably take into consideration such Addenda/Corrigenda while submitting his tender. The tenderer shall return such Addenda/ Corrigenda duly signed and stamped as confirmation of its receipt and submit along with the tender document. All addenda/ Corrigenda shall be signed and stamped on each page by the tenderer and shall become part of the tender and contract documents.

80.0 QUALITY ASSURANCE PROGRAMME

To ensure that the services under the scope of this contract are in accordance with the specifications, the Contractor shall adopt Quality Assurance Programme to control such activities at the necessary points. The contractor shall prepare and finalise such Quality Assurance Programme within 15 days from letter of intent. NPCC shall also carryout quality audit and quality surveillance of systems and procedures of Contractor's quality control activities. A Quality Assurance Programme of Contractor shall generally cover the following:

a) His organization structure for the management and implementation of the proposed Quality Assurance Program.

b) Documentation control system.

c) The procedure for purpose of materials and source inspection.

d) System for site controls including process controls.

e) Control of non-conforming items and systems for corrective actions.

f) Inspection and test procedure for site activities.

g) System for indication and appraisal of inspection status.

h) System for maintenance of records.

i) System for handling, storage and delivery.

j) A quality plan detailing out quality practices and procedures, relevant standards and acceptance levels for all types of work under the scope of this contract.
The Contractors in the formats appended hereto shall submit all the quality reports. Checklist enclosed here in this document shall be followed while carrying out construction activities (items). If any item is not covered by the Checklist/ Formats appended hereto, the Format for the same may be developed and submitted to Engineer-in-Charge for approval and the same shall be adopted. These filled in formats shall be prepared in two copies and duly signed by representatives of contractor and NPCC. All the costs associate with Printing of Formats and testing of materials required as per technical specifications or by Engineer-in-charge shall be included in the Contractor's quoted rates in the Schedule/ Bill of quantities.

81.0 APPROVAL OF TEMPORARY / ENABLING WORKS

The setting and nature of all offices, huts, access road to the work areas, and all other temporary works as may be required for the proper execution of the works shall be subject to the approval of the Engineer-in-charge.

All the equipments, labour, material including cement, reinforcement and the structural steel required for the enabling/ temporary works associated with the entire Contract-shall have to be arranged by the Contractor only. Nothing extra shall be paid to the Contractor on this account and the percentage rates quoted by the Contractor for various items in the Bill of Quantities shall be deemed to include the cost of enabling works.

82.0 CONTRACT COORDINATION PROCEDURES, COORDINATION MEETINGS AND PROGRESS REPORTING

The Contractor shall prepare and finalize in consultation with NPCC, a detailed contract coordination procedure within 15 days from the date of issue of Letter of Intent for the purpose of execution of the Contract.

The Contractor shall have to attend all the meetings at any place in India at his own cost with NPCC, Owners/ Clients or Consultants of NPCC/ Owner/ Client during the currency of the Contract, as and when required and fully cooperate with such personal and agencies involved during these discussions. The Contractor shall not deal in any way directly with the Clients/ Owners or Consultants of NPCC/ Owner/ Clients and any dealing/ correspondence if required at any time with Clients/ Owners/ Consultants shall be through NPCC only.

During the execution of the work, Contractor shall submit at his own cost a detailed Monthly progress report to the Engineer-in-charge of NPCC by 5th of

every month. The format of monthly progress report shall be as approved by Engineer-in-Charge of NPCC.

83.0 CONTRACT AGREEMENT

The Contractor shall enter into a Contract Agreement with the NPCC within 20 days from the date of receipt of Letter of Intent or within such extended time, as may be granted by the NPCC. The cost of stamp papers, stamp duty, registration, if applicable on the contract, shall be borne by the Contractor. Incase, the contractor does not sign the agreement as above or start the work within 10 days of the receipt of letter of intent, his earnest money is liable to be forfeited and letter of intent consequently will stand withdrawn.

84.0 MANNER OF EXECUTION OF AGREEMENT

i. The agreement as per prescribed Proforma as enclosed to the Special Conditions of Contract shall be signed at the office of the NPCC within 20 days from the date of reciept of Letter of Intent. The Contractor shall produce for signing of the Contract, appropriate Power of Attorney and the requisite documents/materials. Unless and until a formal contract is prepared and executed, the Letter of Intent read in conjunction with the Bidding Documents will constitute a binding contract.

ii. The agreement will be signed in five originals and the Contractor shall be provided with one signed original and the other four originals will be retained by the NPCC.

iii. The Contractor shall provide free of cost to the NPCC all the Engineering data, drawings and descriptive materials submitted along with the bid, in at least three (3) copies to form an integral part of the Agreement within seven 7 days from the date of receipt of Letter of Intent.

iv. Subsequent to signing of the Agreement, the Contractor at his own cost shall provide to the NPCC with at least five (5) true hard bound copies of Agreement within thirty (30) days of its signing.

85.0 PURCHASE PREFERENCE TO PUBLIC SECTOR ENTERPRISES

NPCC reserves its right to extend Purchase Preference to Central Public Sector Enterprises (CPSE s) as per policy of Government of India, if any, as applicable on this work. The tenderers are requested to go through latest instructions of Government of India on its preference policy for CPSU s before quoting for the tender.

86.0 CHANGE IN FIRM'S CONSTITUTION TO BE INTIMATED

Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu

undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause 59.1 hereof and NPCC shall be entitled to take action under Clause 72.2 (xi).

LABOUR SAFETY PROVISION

The contractor shall be fully responsible to observe the labour safety provisions.

SAFETY PROCEDURE

1. While the Indian Electricity Rules 1956, as amended upto date, are to be followed in their entirety, particular attention is drawn to the various clauses indicated in Appendix 'C'. Any installation or portion of installation, which does not comply with these rules, should be got rectified immediately.

2. The detailed instructions on safety procedures given in B.I.S. Code No. 5216-1982 "Code of Safety Procedures and Practices in Electrical Works" shall be strictly followed.

3. a) Schematic diagram

It shall be responsibility of the JE (E)/AE (E) to ensure that for each building, a comprehensive schematic diagram is prepared starting from the main board upto the final DBs. All such boards are to be duly marked and numbered. Similarly, for each campus consisting of substation/substations and a number of buildings, a comprehensive power distribution schematic diagram for the entire campus shall be prepared. Based on additions/alterations such diagrams should be updated from time to time.

b) Keep premises clean

Premises like substations, switch rooms, pump house, generating rooms etc. shall be kept clean. Such premises should not be used to store broken furniture, dismantled materials, waste material, parking boxes etc.

c) Keep all electrical shafts clean and locked

Such shafts should not be used for dumping floor malwa etc.

d) Protected premises

All premises like substation, pump house etc. to be maintained as protected area, admission allowed to authorized persons only.

e) Also, the frontage of such areas shall be kept free and parking etc. in front shall not be allowed.

4. No inflammable materials shall be stored in places other than the rooms specially constructed for this purpose in accordance with the provisions of Indian Explosives Act.

5. Rubber or insulating mats should be provided in front of the main switchboards or any other control equipments of medium voltage and above.

6. Protective and safety equipments such as rubber gauntlets or gloves, earthing rods, linemen's belt, portable artificial respiration apparatus etc. should be provided in each sub-station, service center/enquiry office and important installations. Where electric welding or such other nature of work is undertaken, goggles shall also be provided.

7. Necessary number of caution boards such as "Man on Line, Don't switch on" should be readily available in each sub-station, enquiry office and important installations.

8. Standard first aid boxes containing materials as prescribed by the St. John Ambalance Brigade or Indian Red Cross should be provided in each sub-station, enquiry office and important installations and should be readily available.

9. Periodical examination of the first aid facilities and protective and safety equipments provided at the various installations shall be undertaken for their adequacy and effectiveness and a proper record shall be maintained.

10. Charts (One in English and another one in the regional language) displaying methods of giving artificial respiration to a recipient of electrical shock should be prominently displayed at appropriate places.

11. A Chart containing the names, addresses and telephone numbers of nearest autheorized medical practitioners, hospitals, fire brigade and also of the officers in executive charge shall be displayed prominently along with the First Aid Box.

12. Executive Engineers should take immediate steps to train supervisory and authorized persons of the Engineering staff viz. A.Es., J.Es, Head Electricians, Foremen, Electricians and Wiremen in the First Aid Practices, including various methods of artificial respiration with the help of local authorities such as Fire Brigade, St. John Ambulance Brigade, Indian Red Cross or other recognized institutions equipped to impart such training, as prompt rendering of artificial respiration can save life at times of electric shock.

13. All new recruits should be given such First Aid Training immediately after appointment.

14. All Supervisory and authorized persons of the Engineering staff should be deputed for refresher course in First Aid Training after every two years.

15. Details of preventive maintenance to be undertaken shall be in accordance with the chapter 14 of these specifications. All preventive maintenance works shall be preplanned as far as possible and names of persons who are assigned to this work should be entered in a logbook.

16. Electrical wiring and control switches should be periodically inspected and any defective wiring, broken parts of switches which will expose live parts, should be replaced immediately to make the installations safe for the user.

17. Reports indicating details of preventive maintenance works done should be kept in a register by each Engineer and should bear signatures of Assistant Manager and Project Manager by way of checks.

18. No work shall be undertaken on live installations, or on installations, which could be energized unless another person is present to immediately isolate the electric supply in case of any accident and to render first aid, if necessary.

19. No work of live L.T. switch board in the sub-stations should be handled by a person below the rank of a Wireman and such a work should preferably be done in the presence of the Astt Manager (E) in charge of the work.

20. When working on or near live installations, suitably insulated tools should be used, and special care should be taken to see that those tools accidentally do not drop on live terminals causing shock or dead short.

21. The electrical switchgears and distribution boards should be clearly marked to indicate the areas being controlled by them.

22. Before starting any work on the existing installation, it should be ensured that the electric supply to that portion in which the work is undertaken is preferably cut off. Precautions like displaying "Men at Work" caution boards on the

controlling switches, removing fuse carrier from these switches, and these fuse carriers being kept with the person working on the installation, etc. should be taken against accidental energisation. "Permit to Work" should be obtained from the Engineer-in Charge. No work on H.T. main should be undertaken unless it is made dead and discharged to earth with an earthing lead of appropriate size. The discharge operation shall be repeated several times and the installation connected to earth positively before any work is started.

23. Before energizing on an installation after the work is completed, it should be ensured that all tools have been removed and accounted, no person is present inside any enclosure of the switch board etc. any earthing connection made for doing the work has been removed, "Permit to Work" is received back duly signed by the person to whom it was issued in token of having completed the work and the installation being ready for re-energising and "Men at Work" caution boards removed.

24. In case of electrical accidents and shock, the electrical installation on which the accident occurred should be switched off immediately and the affected person should be immediately removed from the live installation by pulling him with the help of his coat, shirt, wooden rod, broom handle or with any other dry cloth or paper. He should be removed from the place of accident to a nearby safe place and artificial respiration continuously given as contained in B.I.S. Code and Standard prescribed by St. John Ambulance Brigade or Fire Brigade.

25. While artificial respiration on the affected person is started immediately, help of Fire Brigade and Medical Practitioner should be called for and artificial respiration should be continued uninterrupted until such help arrives.

26. These instructions should be explained in Hindi/local language to those staff that does not understand English.

27. Executive Engineers should take particular care to ensure that these instructions are imparted to the existing staff and as well as to the new entrants

MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS

1.0 APPLICATION

These rules shall apply to all building and construction works in which 20 (twenty) or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the contractor work is in progress.

2.0 DEFINITION

Work place means a place where twenty or more workers are ordinarily employed or are proposed to be employed in connection with construction work on any day during the period during which the contractor work is in progress.

3.0 FIRST-AID FACILITIES

3.1 At every work place first aid facilities shall be provided and maintained, so as to be easily accessible during working hours, First-Aid boxes at the rate of not less than one box per 150 contract labour or part thereof ordinarily employed.

3.2 The First-Aid boxes shall be distinctly marked with a red cross on white ground and shall contain the following equipments: -

3.2.1

a) For work places in which number of contract labour employed does not exceed 50, each First-Aid box shall contain the following equipments:

i) 6 small sterilized dressings.

ii) 3 medium size sterilized dressings.

iii) large size sterilized dressings.

iv) 3 large sterilized burn dressings.

v)1 (30 ml) bottle containing a two percent alcoholic solution of iodine.

vi) 1(30 ml) bottle containing Sal volatile having the dose and mode of administration indicated on the label.

vii) 1 snakebite lancet.

viii) (30 gms) bottle of potassium permanganate crystals.

ix) 1 pair of scissors.

x) 1 copy of the First-Aid leaf-let issued by the Director General, Factory Advise Service & Labour Institutes, Government of India.

xi) 1 bottle containing 100 tablets (each of 5 grams) of aspirin.

xii) Ointment for burns.

xiii) A bottle of suitable surgical antiseptic solution.

3.2.2 For work places in which the number of contract labour exceed 50. Each First-Aid box shall contain the following equipments:

i) 12 small sterilized dressings.

ii) 6 medium size sterilized dressings.

iii) 6 large size sterilized dressings.

iv) 6 large size sterilized burn dressings.

v) 6 (15 gms) packet sterilized cotton wool.

vi) 1 (60 ml.) bottle containing a two percent iodine alcoholic solution.

vii) 1 (60 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.

viii) 1 roll of adhesive plaster.

ix) 1 snake – bite lancet.

x) 1 (30 gms.) bottle of potassium permanganate crystals.

xi) 1 pair of scissors.

xii) 1 copy of the First-Aid leaf-let issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.

xiii) A bottle containing 100 tablets (each of 5 grams) of aspirin.

xiv) Ointment for burns.

xv) A bottle of suitable surgical antiseptic solution.

3.3 Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.

3.4 Nothing except the prescribed contents shall be kept in the First Aid box.

3.5 The First Aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

3.6 A person in charge of the First-Aid box shall be a person trained in First-Aid treatment, in work places where the number of labour employed is 150 or more.

3.7 In work places where the number of labour employed is 500 or more and hospital facilities are not available within easy distance of the works, first-Aid Posts shall be established and run by a trained Compounder. The Compounder shall be on duty and shall be available at all hours when the workers are at work.

3.8 Where work places are situated in places, which are not towns of cities, a suitable motor transport shall be kept readily available to carry injured person or persons suddenly taken ill to the nearest hospital.

4.0 DRINKING WATER

4.1 In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.

4.2 Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

4.3 Every water supply of storage shall be at a distance of not less than 50 feet from any latrines drain or other source of pollution, Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap-door which shall be dust and water-proof.

4.4 A reliable pump shall be fitted to each covered well, trap-door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5.0 WASHING FACILITIES

5.1 In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of labour employed herein.

5.2 Separate and adequate screening facilities shall be provided for the use of male and female workers.

5.3 Such facilities shall be conveniently accessible and shall be kept clean and hygienic condition.

6.0 LATRINES AND URINALS

6.1 Latrines shall be provided in every work place on the following scale, namely:

a) Where females are employed there shall be at least one latrine for every 25 females.

b) Where males are employed, there shall be at least one latrine for every 25 males.

Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females, as the case may be, up to the first 100, and one for every 50 thereafter.

6.2 Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.

6.3 Construction of Latrines: The inside walls shall be constructed of masonry or some suitable heat resisting non-absorbent materials and shall be cement washed inside and outside at least once a year. Latrine shall not be a standard lower than borehole system.

6.4

(a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women only" as the case may be.

(b) The notice shall also bear the figure of man or of women, as the case may be.

6.5 There shall be at least one urinal for male workers up to 50and one for female workers up to 50 employed at a time. Provided that where the number of male or female workmen, as the case may be, exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females up to the first 500 and one for every 100 or part thereof, thereafter.

6.6

a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

b) Latrines and urinals other than those connected with a flush sewerage system shall comply with the requirements of the Public Health Authorities.

6.7 Water shall be provided by means of a tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.

6.8 Disposal of Excreta

Unless otherwise arranged for by the local sanitary authority arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternatively excreta may be disposed off by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm layer of waste or for refuse and then covering it with a layer of earth for fortnight (when it will turn into manure).

6.9 The Contractor shall, at his own expense, carry out all instruction issued to him by the Engineer-in-Charge to effect proper disposal of night soil and other conservancy work in respect of the Contractor's workmen or employees on the site. The Contractor shall be responsible for payment of any charges, which may be levied by Municipal or Cantonment Authority for execution of such work on his behalf.

7.0 PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost four suitable sheds, two for males and the other two for rest separately for the use of man and women labour. The height of each shelter shall not be less than 3 meters from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sqm.Per head, provided that the Engineer-in-Charges may permit, subject to his satisfaction, a portion

of the building under construction or other alternative accommodation to be used for the purpose.

8.0 CRECHES

8.1 At every work place, at which 20 or more women workers are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a playroom for the children and the other as their bedrooms.

The rooms shall be constructed on standard not lower than the following:

i) Thatched roof

ii) Mud floor and walls.

iii) Planks spread over the mud floor and covered with matting

8.2 The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

8.3 The Contractor shall supply adequate number of toys and games in the playroom and sufficient number of cots and beddings in the bedroom.

8.4 The Contractor shall provide one Ayah to look after the children in the crèche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.

8.5 The use of the rooms/earmarked as crèche shall be restricted to children, their attendant and mother of the children.

9.0 CANTEENS

9.1 In every work place where the work regarding the employment of contract labour is likely to continue for six months and wherein contract labour numbering one hundred or more are ordinarily employed, an adequate canteen shall be provided by the Contractor for the use of such labour.

9.2 The canteen shall be maintained by the Contractor in an efficient manner.

9.3 The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.

9.4 The canteen shall be sufficiently lighted at all times when any person has access to it.

9.5 The floor shall be made of smooth and impervious material and inside walls shall be lime washed or colour washed at least once in each year provided that the inside walls of the kitchen shall be lime-washed every four months.

9.6 The premises of the canteen shall be maintained in a clean and sanitary condition.

9.7 Waste Water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

9.8 Suitable arrangements shall be made for the collection and disposal of garbage.

9.9 The dinning hall shall accommodate at a time 30 persons of the labour working at time.

9.10 The floor area of the dinning hall, excluding the area occupied by the service counter and any furniture except tables and chair shall not be less than one square meter per dinner to be accommodated.

9.11

a) A portion of the dinning hall, and service counter shall be partitioned off and reserved for women workers in proportion to their number.

b) Washing places for women shall be separate and screened to secure privacy.

9.12 Sufficient tables, stool, chairs or benches shall be available for the number of dinners to be accommodated.

9.13.1

a) There shall be provided and maintained sufficient utensils, crockery, furniture and any other equipment necessary for the efficient running of the canteen.

b) The furniture, utensils and other equipment shall be maintained in a clean and hygienic condition.

9.13.2

a) Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.

b) A service counter, if provided, shall have top of smooth and impervious material.

c) Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

9.14 The foodstuffs and other items to be served in the canteen shall be in conformity with the normal habits of the labour.

9.15 The charge for foodstuffs, beverages and any other items served in the canteen shall be based on 'No profit No loss' and shall be conspicuously displayed in the canteen.

9.16 In arriving at price of foodstuffs, and other articles served in the canteen, the following items shall not be taken into consideration as expenditure, namely:

a) The rent of land building.

b) The depreciation and maintenance charges for the building and equipment provided for the canteen.

c) The cost of purchase, repair and replacement of equipment including furniture, crockery, cutlery and utensils:

d) The water charges and other charges incurred for lighting and ventilation:

e) The interest and amounts spent on the provision and maintenance and equipment provided for in the canteen.

9.17 The accounts pertaining to the canteen shall be audited once in every 12 months by registered accountants and auditors.

10.0 ANTI MALARIAL PRECAUTIONS

The Contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-in-Charge including the filling up of any borrows pits which may have been dug by him.

11.0 AMENDMENTS

NPCC may from time to time, add to or amend these rules and issue such directions as it may consider necessary for the purpose of removing any difficulty which may arise in the administration hereof.

CONTRACTOR'S LABOUR REGULATIONS

1.0 SHORT TITLE

These regulations may be called the Contractor "Labour Regulations".

2.0 Definitions

2.1 "Workman" means any person employed by the NPCC or its Contractor directly or indirectly through a sub-contractor, with or without the knowledge, of the NPCC to do any skilled, semi-skilled, un-skilled, manual, supervisory, technical or clerical work for hire or reward, whether, the terms of employment are expressed or implied but does not include any person-

a) Who is employed mainly in a managerial or administrative capacity; or

b) Who being employed in a supervisory capacity draws wages exceeding Rupees Two thousand Five hundred per person or exercises either by the nature of the duties attached to the office or by reason of powers vested to him, functions mainly of managerial nature.

c) Who is an outworker, that is to say, a person to whom any articles or materials are given out by or on behalf of the principal employer to be made up cleaned, washed, altered, ornamental finished, repaired, adopted or otherwise processed for sale for the purpose of the trade or business of the principal employer and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the principal employer.

2.2 "Fair Wages" means wages whether for time or piecework fixed and notified under the provisions of the minimum Wages Act from time to time.

2.3 "Contractor" shall include every person who undertake to produce a given result other than a mere supply of goods or articles of manufacture through labour or who supplies labour for any work and includes a sub-contractor.

2.4 "Wages" shall have the same meaning as defined in the Payment of Wages Act.

2.4.1 Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.

2.4.2 When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week he shall be paid overtime for the extra hours put in by him at double the ordinary rate of wages.

2.4.3.1 Every worker shall be given a weekly holiday on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time, irrespective of whether such worker is governed by the Minimum Wages Act or not.

2.4.3.2 Whether the Minimum Wages prescribed by the Government under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.

2.4.3.3 here a contractor is permitted by the Engineer-in-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substitute holiday to him for the whole day on one of the five days immediately before or after the normal

weekly holidays and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

3.0 DISPLAY OF NOTICE REGARDING-WAGES, ETC.

The contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clean and legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers, giving the minimum rates of wages fixed under the Minimum Wages Act, the actual wages being paid, the hours of work for which such wages are earned, wage period, dates of payment of wages and other relevant information as per Appendix 'A'.

4.0 PAYMENT OF WAGES

4.1 The contractor shall fix wage periods in respect of which wages shall be payable.

4.2 No wage period shall exceed one month.

4.3 The wages of every person employed as labour in an establishment or by a contractor where less than one thousand, such persons are employed shall be paid before the expiry of the seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.

4.4 Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.

4.5 All payments of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.

4.6 Wages due to every worker shall be paid to him direct or to other person authorized by him in this behalf.

4.7 All wages shall be paid in current coin or currency or in both.

4.8 Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.

4.9 A notice showing the wage period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to the Engineer-in-Charge under acknowledgment.

4.10 It shall be the duty of the contractor to ensure the disbursement of wages in the presence of the Engineer or any other authorized representatives of the Engineer-in- Charge who will be required to be present at the place and time of disbursement of wages by the contractor to workmen.

4.11 The contractor shall obtain from the Engineer or any other authorized representative of the Engineer-in-Charge as the case may be, a certificate under his signature at the end of the entries in the "Register of Wages" or the "Wage-cum-Muster Roll" as the case may be in the following form:

"Certified that the amount shown in column No..... has been paid to the workmen concerned in my presence on..... at ....."

5.0 FINES AND DEDUCTIONS, WHICH MAY BE MADE FROM WAGES

5.1 The wages of a worker shall be paid to him without any deduction of any kind except the following–

a) Fines

b) Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.

c) Deduction for damage to or loss of goods expressly entrusted to the employed persons for custody, or from loss of money or any other deduction which he is required to account where such damage or loss is directly attributable to his neglect or default.

d) Deduction for recovery of advances or for adjustment of over payment of wages, advances granted shall be entered in a register.

e) Any other deduction, which the Central Government may from time to time allow.

5.2 No fines should be imposed on any workers in respect of such acts and omissions on his part as have been approved by the Chief Labour Commissioner.

NOTE: An approved list of Acts and Omissions for which fines can be imposed is enclosed at Appendix-I.

5.3 No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.

5.4 The total amount of fine, which may be imposed in any one-wage period on a worker, shall not exceed an amount equal to three paise in Rupees of the total wages, payable to him in respect of that wage period.

5.5 No fine imposed on any worker shall be recovered from him in installment, or after the expiry of sixty days from the date on which it was imposed.

5.6 Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

6.0 LABOUR RECORDS

6.1 The contractor shall maintain a "Register of persons employed" on work on contract in form XIII of the CL (R&A) Central Rules 1971 (Appendix-B).

6.2 The contractor shall maintain a "Muster Roll" register in respect of all workmen employed by him on the work under contract in from XVI of the CL (R&A) Rules 1971 (Appendix-C).

6.3 The contractor shall maintain a "Wage Register" in respect of all workmen employed by him on the work in form (Appendix-D).

6.4 Register of accidents – The contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:

a) Full particulars of the labourers who met with accident.

b) rate of wages

c) Sex

d) Age

e) Nature of accident and cause of accident.

f) Time and date of accident.

g) Date and time when he/she admitted in Hospital

h) Date of discharge from the Hospital

i) Period of treatment and result of treatment

j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.

k) Claim required to be paid under Workmen's Compensation Act.

l) Date of payment of compensation.

m) Amount paid with details of the person to whom the same was paid.

n) Authority by whom the compensation was assessed.

o) Remarks.

6.5 Register of Fines – The contractor shall maintain a “Register of Fines” in the form (Appendix-H).

The contractor shall display in a good condition and in a conspicuous place of work the approved list of Acts and Omission for which fines can be imposed (Appendix-I).

6.6 Register of Deductions-The contractor shall maintain a “Register of Deductions” for damage or loss in form (Appendix-J).

6.7 Register of Advances-The contractor shall maintain a “Register of Advances” in form (Appendix-K).

6.8 Register of Overtime-The contractor shall maintain a “Register of Overtime” in form (Appendix-L).

7.0 ATTENDANCE CARD-CUM WAGE SLIP:

7.1 The contractor shall issue an attendance card-cum-wage slip to each workman employed by him in the specimen form at (Appendix-E).

7.2 The card shall be valid for each wage period.

7.3 The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.

7.4 The card shall remain in possession of the worker during the wage period under reference.

7.5 The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.

7.6 The contractor shall obtain the signature or thump impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

8.0 EMPLOYMENT CARD

The contractor shall issue an Employment Card in form to each worker within three days of the employment of the worker (Appendix-F).

9.0 SERVICE CERTIFICATE

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a service certificate in from Appendix-G.

10.0 PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6 and 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-in-Charge, Labour Officer.

11.0 POWER OF LABOUR OFFICERS TO MAKE INVESTIGATIONS INQUIRY

The Labour Officer or any other person authorized by NPCC on its behalf shall have power to make inquires with a view to ascertaining and enforcing due and proper observance of the Fair Wage Clauses and the Provisions of Regulations. He shall investigate into any complaint regarding the default made by the contractor or sub-contractor in regard to such provision.

12.0 Inspection of Book and slips

The contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour officer or any other person, authorized by the Central Government on his behalf.

13.0 Submission of Returns

The contractor shall submit periodical returns as may be specified from time to time.

14.0 Amendments

The NPCC may from to time, add or amend the regulations and on any question as to the application, interpretation or effect of these regulations the decision of the Zonal Manager concerned shall be final.

Zonal Manager
Chhattisgarh Zone

SPECIAL CONDITIONS OF CONTRACT (SCC)

FOR

Electrical Works-Portal Structures Residential Area External-Phase-II at Indira Gandhi National Tribal University,Amarkantak,M.P

GENERAL

SPECIAL CONDITIONS OF CONTRACT- ELECTRICAL SYSTEM EXTERNAL WORKS
IGNTU- AMARKANTAK (PORTAL STRUCTURE PHASE 2)

1. All electrical works will be carried out as per 'GENERAL SPECIFICATIONS FOR ELECTRICAL WORKS, PART-II, EXTERNAL, 1994'- CPWD publication.
2. All Sub Station works will be carried out as per 'GENERAL SPECIFICATIONS FOR ELECTRICAL WORKS, PART-IV, SUB STATIONS, 2007'- CPWD publication.
3. All DG SETS works will be carried out as per 'GENERAL SPECIFICATIONS FOR ELECTRICAL WORKS, PART-VII, STATIONS, 2007'- CPWD publication.
4. SPECIFICATION OF CABLE :
   a) 33KV grade XLPE insulated PVC sheathed armoured Aluminium/Copper cable shall be 3 core earthed of sizes as specified. The cable shall conform to IS – 1554, Part II.
   b) 1.1 KV grade XLPE insulated PVC sheathed armoured Aluminium/Copper cable shall be 3.5/4 core of sizes as specified. The cable shall conform to IS: 1554 Part I.
   c) All control wires shall be 650V grade copper conductor Halogen free fire retardant or FRLS PVC insulated, conforming to IS : 1554 Part I. The minimum size of the control wires shall be 1.5 sq.mm.
5. INSTALLATION :
   Cable shall be laid in ground, trenches, cable trays and on walls as specified. Installation shall include all supports and clamps as required. As far as possible cables shall not be fixed on walls directly but laid on cable trays.
6. JOINTING FOR 33KV GRADE CABLE GLANDS
   Jointing work shall be carried out only by licensed experienced cable jointer and shall be in accordance to CPWD General Specification for Electrical works – Part II (External) 1994 amended upto date.
7. EARTHING FOR 33 KV GRADE CABLE GLANDS
   All HV cable glands shall be connected to the earth with 2 Nos. 38.6 mm copper or equivalent G.I conductors.
8. Selection shall be made as per tables given under Appendix -- V.
9. TESTING
   Testing of complete cable installation shall be as per clause 2.8.2 and 2.8.3 of CPWD General Specification for Electrical works – Part II (External) 1994 amended up to date.

The following special conditions shall be read in conjunction with General Conditions of contract, if there are any provisions in these Special Conditions, which are at variance with the provisions of General Conditions of Contract, the provisions in these special Conditions shall prevail.

(1) The work in general shall be carried out as per CPWD specifications updated with correction slips issued up to last date of submission of tender.

(2) For items not covered under CPWD Specification, as above, the work shall be done as per latest relevant ISI /BIS Codes of practice.

1.0 INTRODUCTION

1.1 **APPROACH TO SITE**

The proposed site is about 20Km from Amarkantak at Anuppur-Pendra Road near Poddki-Lalpur (Sendrikhal) village in Dist Anuppur (M.P.).

2.0 **LETTER OF UNDERTAKING**

The tender shall be accompanied by Letter of acceptance of tender conditions as per proforma given in this tender document.

3.0 Any tender not accompanied by Letter of acceptance in accordance with aforesaid provision of notice Inviting Tender and Instructions to Tenderer shall be rejected.

4.0 Once the Tenderer has given an unconditional acceptance to the tender conditions in its entirety, he is not permitted to put any remark(s)/conditions(s)(except unconditional rebate on price ,if any)in/along with the tender.

5.0 **SITE VISIT AND COLLECTING LOCAL INFORMATION**

Before tendering, the tenderer is advised to visit the site, its surrounding, access and satisfy themselves about the local conditions such as approach roads to the site, availability of water & power supply, application of taxes, duties and levies as applicable, nature of ground, soil and sub-soil condition, underground water table level, accommodations they may require etc., river regime, river water levels, other details of river, steams & any other relevant information required by them to execute complete scope of work . The tenderer may obtain all necessary information as to risks, contingencies & other circumstances (insurgencies etc.) which may influence or affect their tender. Tenderer shall be deemed to have considered site conditions whether he has inspected it or not and to have satisfied himself in all respect before quoting his rates and no claim or extra charges whatsoever in this regard shall be entertained / payable by the NPCC at a later date.

6.0 **SALES TAX ON WORKS CONTRACT & TURNOVER TAX ETC.**

AS per GCC conditions

7.0 **TRANSFER OF BID DOCUMENTS**

Transfer of bid documents purchased by one intending bidder to another is not permissible.

8.0 The NPCC reserves the right to award the work to a single party or to split the work amongst two or more parties as deemed necessary without assigning any reason whatsoever.

9.0 **NO ESCALATION PAYMENT / PRICE VARIATION ADJUSTMENT**

The rates quoted by the contractor shall be firm and fixed for entire contract period as well as extended period for completion of works. All rates as per bill of quantities (BOQ) shall be firm & fixed for entire contract period as well as for extended period for completion of the project. No claim on account of any price variation / Escalation on whatsoever ground shall be entertained at any stage of works.

10.0 The rates and prices to be tendered in the bill of quantities are for completed and finished items of works and complete in all respects. It will be deemed to include all constructional plant, labour, supervision, materials, transport, all temporary works, erection, maintenance, contractor's profit and establishment / overheads, together with preparation of designs drawings pertaining to casting yard (if required). Staging from work, stacking yard, etc, all general risk, taxes, royalty, duties, cess, octroi and other levies, insurance liabilities and obligations set out or implied in the tender documents and contract.

11.0 The materials products used on the works shall be one of the approved **makes/brands** out of list of manufacturers / brands /makes given in the tender documents. The contractor shall submit samples /specimens out of approved makes of materials /products to the engineer in charge for prior approval. In exceptional circumstances engineer in charge may allow alternate equivalent makes /brands of products /materials at his sole discretion .The final choice of brand / make shall remain with the engineer in charge, whose decision in the matter shall be final and binding and nothing extra on this account shall be payable to the contractor.

Incase single brand / make are mentioned, other equivalent makes brands may be considered by the engineer in charge with prior approval .Incase of variance in CPWD specification from approved products makes specification the specification of approved products make shall prevail for which nothing shall be paid extra to the contractor

12.0 As soon as possible after the contract is concluded the contractor should submit a time and progress chart and get it approved by the NPCC. The chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of works. It shall indicate the forecast of the dates of commencement and completion of various trades of section of the work and may be amended as may be necessary by agreement between the parties.

13.0 AMENITIES TO BE PROVIDED BY CONTRACTOR TO NPCC

On acceptance of the tender, the contractor at his cost will provide immediately the following amenities exclusively for the effective inspections of their work by Engineer-in-charge and other staff of NPCC who will be connected with the project.

The details for the same are mentioned below for each package. The contractor shall not be entitled for any extra payment for the same:

S.No.	Description	Unit	Estimated cost of each packages put to tender (Rs. in Crores)				
(A)	ACCOMMODATION		Rs. 2.0 to 5.0	Rs. 5.0 to 10.0	Rs. 10.0 to 20.0	Rs. 20.0 to 50.0	Rs. 50.0 to 100.0
	Furnished office/transit camp of one or more locations as per direction of Engineer-in-Charge/Zonal Manager with basic amenities like Toilets, Drinking water arrangement, lights etc. for NPCC, Engineer & Staff and maintenance of it till Defect liability period.	Sq.ft.	500	750	1000	1500	2000
	Non compliance of ABOVE (A) clause recovery will be made from Bills		As per actual	As per actual	As per actual	As per actual	As per actual
(B)	FURNITURE						
	(i)Office tables (secretariat)	Nos.	-	-	1	2	3
	(ii)Office tables (half secretariat)	Nos.	4	6	7	8	10
	(iii) Executive Chairs	Nos.	-	-	1	2	3
	(iv)Chairs (steel armed)	Nos.	8	12	15	18	25
	(v)Steel Almirah	Nos.	2	3	4	6	8
	Non compliance of ABOVE (B) clause recovery will be made from Bills.		As per actual	As per actual	As per actual	As per actual	As per actual
(C)	OFFICE EQUIPMENT						
	(i) Fax machine	No.	1	1	1	1	2
	) Computer (Pantium-IV.Office Edition) with ım 160 GB HDD along with UPS, Latest Version of ıre like Auto Cad. MS Project, Windows, MS Office th Internet connection (Broadband/USB Internet)	No	1	1	2	2 (Desk Top) + 1 (laptop)	4 (Desk Top) + 2 (laptop)
	(iii)Laser or any other printer	No.	1	1	1	2	2
	(iv) Color Television with cable Connection and Refrigerator (200Ltr) or any other gadget of equivalent cost as decided by Engineer-in-Charge/Zonal Manager.	No.	-	1	1	1	2
	(v) Water Purifier (R.O.type) (drinking water) or any other gadget of equivalent cost as decided by Engineer-in-Charge/Zonal Manager.	No.		1	1	1	2

	(vi)Photocopy machine or any other gadget of equivalent cost as decided by Engineer-in-Charge/Zonal Manager.	No.	1 or out source	1 or out source	1 or out source	1 (min. output reg.15 copy per min.)	1 (min. output reg.15 copy per min.)
	Non compliance of ABOVE (C) clause recovery will be made from Bills.	-	As per actual	As per actual	As per actual	As per actual	As per actual
(D)	CONSUMABLES						
	All consumables like Stationery, ink etc. shall be provided by contractor till end of defect liability period. Amount to be restricted to.	Rs. per month	500/-	1000/-	2000/-	3000/-	4000/-
(E)	TELEPHONE WITH STD FACILITY						
	a)Basic (Land line) Phone with connection b) Mobile phones with SIM		- 1	- 1	1 1	1 2	2 3
	Monthly expenditure on account of this shall be restricted to	Rs. per month	1000/-	2000/-	3000/-	4000/-	5000/-
(F)	VEHICLES						
	Four wheel vehicle minimum 1300 CC with Driver.	No.	-	1	1	2	2
	Monthly running shall be restricted to	KM / per vehicle	-	3000	4000	4000	4000
	Non compliance of ABOVE (F) clause recovery will be made from Bills.	Rs. per month		30000/-	40000/-	80000/-	80000/-
(G)	ATTENDNT	Nos.	1	1	2	3	4
	Non compliance of ABOVE (G) clause recovery will be made from Bills.	Rs. per month	12500/-	12500/-	25000/-	37500/-	50000/-

Note:

1. The vehicles shall be new. The make and model of vehicle shall be selected by the Engineer - in - charge. The vehicle shall be maintained in good condition.
2. Above amenities are to be provided by the contractor within 10 days of issue of Letter of Award / Intent.
3. All the above Items except the consumables shall be the property of the Contractor after the defect liability period of the project and settlement & payment of final bill, which ever is later.

All the above amenities shall be provided and maintained properly (including payment of water, electricity, & telephone bills etc.) by the contractor at site or any other offices related with the execution of the work till defect liability period of the project and settlement & payment of final bill, which ever is later. The Contractor shall be responsible for watch and ward of vehicles and other amenities etc. In case of theft/damage, the contractor shall immediately replace the same within a maximum period of two days with the vehicle / facility. In case, the above amenities are not provided by the contractor within ten days of the award of the work NPCC shall arrange the same at risk and cost of the contractor and make the recoveries from the bills proportionately. The decision of the Engineer-in-Charge shall be final and binding on the contractors.

14.0 The contractor if required shall demolish old structures on the proposed site properly. The useful material shall be the property of the owner /NPCC and these materials shall be stacked in workmanship like at the place specified by the Engineer-in-Charge.

15.0 The contractor shall provided safety equipment and gadgets to all their workers, supervisors and technical staff engaged in the execution of the work while working. The equipment and gadgets shall also be provided to NPCC by the contractor at his own cost for use of NPCC officials and /or workforce.

The cost of the above equipments /gadgets shall be included in the rates quoted by the contractor for the items & works as per bill of Quantities and contractor shall not be entitled for any extra cost in this regard. The above norm is to be strictly complied with at site .In case the contractor is found to be deficient in providing safety equipment/ gadgets in opinion of engineer- in - charge, the engineer in charge at his option can procure the same at the risk & cost of contractor and provide the same for the use at work site and shall make the recoveries from the bills of the contractor for the same. The decision of the engineer -in -charge shall be final and binding on contractor in this regard.

16.0 The tenderer shall quote his rates inclusive of turnover tax/ sales tax on works and service tax , Labour Cess payable to Central/State Government along with other taxes, duties, levies etc. in conjunction with other terms and conditions.

17.0 If required, the contractor has to do site clearance, enabling work, barricading, shifting / realignment of existing utility services etc at his own cost and the contractor shall not be entitled for any extra payment whatsoever in this regard.

18.0 In case of any sort of anomalies and/or typing error in the nomenclature, rates, & Description etc. of the items indicated in the Price bid / BOQ of scheduled items must be read as per respective schedule such as DSR-2007 or SOR 2007 for Arunachal PWD.

19.0 The rates of any Non scheduled item given in more than one package of Price bid/BOQ, the lowest rate shall be the final & binding irrespective of the quoted rates in any of the packages.

20.0 Contractor has to submit a Construction programme within 10 days of issue of LOA/LOI.

21.0 Unless otherwise provided in the schedule of quantity, rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads, & depths of the building and nothing extra shall be paid to him on this account.

22.0 All drawings shall at all times be properly correlated before executing any work. However, in case of any discrepancy in the item given in the schedule of the quantities appended with the tender and architectural drawings relating to relevant item, the former shall prevail unless and otherwise given in writing by the engineer in charge.

23.0 The contractor shall be required to produce samples of all building materials and fittings sufficiently in advance to obtain approval of the Engineer-in charge.

24.0 The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges which he may be liable.

25.0 The rate of all items in which use of cement is involved inclusive of all charges for curing.

26.0 **MODE OF PAYMENT**
AS per GCC conditions

27.0 The rate quoted by the contractor shall be deemed to be inclusive of Sales Tax, Turnover Tax on works contract, service tax, Labour cess or any other similar tax as per the laws applicable in the State.

28.0 The stamp duty if any on the contract agreement levied by the Government or any other statutory body shall be paid by the contractor.

Zonal Manager
Chhattisgarh Zone

SPECIFICATIONS FOR INTERNAL & EXTERNAL ELECTRICAL WORKS

GENERAL & TECHNICAL

1 POINT WIRING:-

1.1. DEFINITION:-

A point (other than socket outlet point) shall include all work necessary in complete wiring to the following outlets from the controlling switch or MCB.

i. Ceiling rose or connector (in the case of points for ceiling/exhaust fan points, pre wired light fittings and call bells).

ii. Ceiling rose (in the case of pendants except stiff pendants)

iii. Back plate (in the case of stiff pendants).

1.2. **SCOPE :-**

Following shall be deemed to included in point wiring.

i. Conduit/casing and capping/channels as the case may be, accessories for the same and wiring cables between the switch box and the point outlet, loop protective earthing of each fan / light fixture.

ii. All fixing accessories such as clips, nails, screws, Phil plug, rawl plug etc as required.

iii. Metal / PVC switch boxes for control switches, regulators, sockets etc, recessed or surface type of modular type or piano type with sheet as required and as mentioned in BOQ.

iv. Outlet boxes, junction boxes, pull-through boxes etc, but excluding metal boxes if any, provided with switchboards for loose wires/conduit terminations.

v. Any special block required for neatly housing the connector.

vi. Control switch or MCB, as specified in BOQ / drawings.

vii. 3 / 5 pin or 6 pin socket, ceiling rose or connector as required.

viii. Connections to ceiling rose, connector, socket outlet, lamp holder, switch etc.

xi. Bushes conduit or porcelain tubing where wiring cables pass through wall etc.

1.3 MATERIAL:-

i The system of wiring shall consist of ISI marked single core, PVC insulated, FRLS, 1100 volt grade, stranded, flexible copper conductor wires as per IS : 694 amended up to date.

ii The Conduit and accessories shall be of mild steel of ISI marked (IS:9537)

ERW black, stove enameled, screwed type. The wall thickness of conduits shall be 16 SWG for 20, 25 and 32 mm dia conduits and 14 SWG for 40 and 50 mm dia conduits. OR, ISI marked (IS: IS:9537-III, 3419 & 2509) heavy duty Rigid PVC. The wall thickness shall be 2 mm. (As mentioned in the respective BOQ)

1.4. CONDUCTOR SIZE:-

Wiring shall be carried out with following sizes of wires –

a. Light/fan/call bell/ exhaust fan point - 1.5 sq mm.

b. 5 amp plug points - 1.5 sq mm.

c. Light circuit - 1.5 sq mm.

d. Power point - 4.0 sq mm.

e. Power point for AC - 6.0 sq mm.

1.5 Size of Earth wires shall be as per following table -

Size of point/ circuit / sub-main wires	Earth wire
2x1.5 sqmm. -	1x1.5 sqmm.
2x2.5 sqmm. -	1x2.5 sqmm.
2x4 sqmm. -	1x4 sqmm.
2x6 sqmm. -	1x6 sqmm.
2x10 sqmm. -	1x10 sqmm.
2x16 sqmm. -	1x16 sqmm.

4x6 sqmm. -	2x6 sqmm.
4x10 sqmm. -	2x10 sqmm.
4x16 sqmm. -	2x16 sqmm.

2. MEASUREMENT:-

2.1. POINT WIRING:-

i. Unless and otherwise specified, there shall be no linear measurement for point wiring for light points, fan points, exhaust fan points and call bell points.

These shall be measured on unit basis by counting.

ii. No separate measurement will be made for interconnections between points in the same distribution circuit and for the circuit protective (loop earthling) conductors between metallic switch boxes.

2.2 POINT WIRING FOR SOCKET OUTLET POINTS :-

i. The light plug (5A/6A) point and power (15A/16A) point wiring shall be measured on linear basis, from the respective tapping point of live cable, namely switch box, another socket outlet point, or the sub distribution board as the case may be, up to the socket outlet. ii. The metal / PVC box with cover; switch/MCB socket outlet and other accessories shall be measured and paid as a separate item.

2.3 GROUP CONTROL POINTS WIRING :-

i. In the case of points with more than one point controlled by the same switch, such point shall be measured in parts i.e.(a) from the switch to the first point outlet as one point (Primary point), and (b) for the subsequent points each shall be treated as separate point (additional/secondary).

ii. No recovery shall be made for non-provision of more than one switch in such cases.

2.4 TWIN CONTROL LIGHT POINT WIRING:-

i. A light point controlled by two numbers of two way switches shall be

measured as two point.

ii. No recovery shall be made for non-provision of more than one ceiling rose /

connector in such cases.

2.5 MULTIPLE CONTROLLED CALL BELL POINTS WIRING:-

i. In the case of call bell points with a single call bell outlet, controlled from

more than one place, the point shall be measured in parts i.e. (a) from the call bell outlet to one of the nearest ceiling roses meant for connection to bell push, treated as one point and (b) from that ceiling rose to the next one and so on, shall be treated as separate point(s).

ii. No recovery shall be made for non-provision of more than one ceiling rose or connector for connection to call bell in such cases.

3. CIRCUIT AND SUBMAIN WIRING:-

3.1. CIRCUIT WIRING:-

Circuit wiring shall mean the wiring from the distribution board up to the first tapping point inside the switch board.

3.2. SUB MAIN WIRING :-

Sub main wiring shall mean the wiring from one main/distribution switchboard to another and from Distribution Board to Power Outlet / AC Outlet.

4. MEASUREMENT OF SUBMAIN / CIRCUIT WIRING :-

i. Sub main wiring shall be measured on linear basis along the run of the wiring. The measurement shall include all length from end to end of conduit or casing and capping as the case may be, exclusive of interconnections inside the switch board etc. The increase on account of diversion or slackness shall not be included in the measurement.

ii. The length of circuit wiring shall be measured from the distribution board to the nearest switch box from which the point wiring starts. Looping of switch box also will be counted towards circuit wiring, measured along the length of conduit / channel 5. **SYSTEM OF DISTRIBUTION AND WIRINGS:-**

i. Main distribution board shall be controlled by the circuit breaker. Each outgoing circuit shall be controlled by a circuit breaker on the phase or live conductor.

ii. The branch distribution board shall be controlled by a circuit breaker. Each outgoing circuit shall be provided with a MCB of specified rating on the phase or live conductor.

iii. The load of the circuits shall be divided, as far as possible, evenly between the number of ways of the distribution boards, leaving at least one spare circuit for future extension.

iv. The neutral conductors (incoming and outgoing) shall be connected to a common link (multi way connector) in the distribution board and be capable of being disconnected individually for testing purposes. i. Wiring shall be separate for essential loads (ie those fed through stand by supply) and non-essential loads throughout.

6. BALANCING OF CIRCUITS:-

The balancing of circuits in three wire or poly phase installations shall be arranged up to the satisfaction of the Engineer-in-charge.

7. WIRING SYSTEM:-

a) the wiring shall be done only by the “Looping system”. Phase or live conductors shall be looped at the switch boxes. For point wiring neutral / earth wire looping for the first point shall be done in the switch box, and neutral / earth looping of subsequent point will be made from point outlet.

b) Lights, fans and call bells shall be wired in the ‘lighting’ circuits. 15A/16A socket outlets and other power outlets shall be wired in the ‘Power’ circuits. 5A/6A socket outlets shall also be wired in the “Lighting” circuit unless mentioned otherwise.

c) The wiring throughout the installation shall be such that there is no break in the neutral wire except in the form of a linked switch gear.

d) Surface wiring shall run, as far as possible, along the walls and ceiling so as to be easily accessible for inspection.

e) In all types of wiring, due consideration shall be given for neatness, good appearance and safety.

f) Colour coding:

Phase : Red / Yellow / Blue (three phase wiring)

Live : Red (single phase wiring)

Neutral: Black

Earth : Green 8. PASSING THROUGH WALLS OR FLOORS :-

i When wiring cables are to pass through a wall, these shall be taken through a protection (steel/PVC) pipe or porcelain tube of suitable size such that they pass through in a straight line without twist or cross in them on either end of such holes. The ends of metallic pipe shall be neatly bushed with porcelain, PVC or other approved material.

ii. Where a wall pipe passes outside a building so as to be exposed to weather, the outer end shall be bell mouthed and turned downwards and properly bushed on the open end.

iii. All floor openings for carrying any wiring shall be suitably sealed after installation.

9. JOINTS IN WIRING:-

i. No bare conductor in phase and/or neutral or twisted joints in phase, neutral, and/or protective conductors in wiring shall be permitted.

ii. There shall be no joints in the through-runs of cables. If the length of final circuit or sub main is more than the length of a standard coil, thus necessitating a through joint, such joints shall be made by means of approved mechanical connectors in suitable junction boxes.

iii. Termination of multi stranded conductors shall be done using suitable crimping type thimbles.

10. CONFORMITY TO I.E. ACT, I.E. RULES AND STANDARDS:-

i. All electrical works shall be carried out in accordance with the provisions of the Indian Electricity Act, 1910 and Indian Electricity Rules 1956 amended up to date.

ii. The work shall also conform to relevant Indian Standard codes of practice for the type of work involved.

iii. In all electrical installation works, relevant safety codes of practice shall be followed.

iv. The complete wiring installation shall confirm to IS : 732 amended up to date.

11. GENERAL REQUIREMENTS OF COMPONENTS :-

11.1 QUALITY OF MATERIALS:-

All materials and equipment supplied by the contractor shall be new. They shall be of such design, size and material as to satisfactorily function under the rated conditions of operation and to with stand the environmental conditions at site.

11.2 RATING OF COMPONENTS:-

i. All components in a wiring installation shall be of appropriate ratings of voltage, current and frequency, as required at the respective sections of the electrical installation in which they are used.

ii. All conductors, switches and accessories shall be of such size as to be capable of carrying the maximum current which will normally flow through them, without their respective ratings being exceeded.

11.3 CONFORMITY OF STANDARDS :-

All components shall conform to relevant Indian Standard specification, wherever existing. Materials with ISI certification mark shall be preferred. However for conduits, wiring cables, piano/tumbler switches and socket outlets, ISI marked materials shall only be permitted.

11.4 INTERCHANGEABILITY:-

Similar parts of all switches, lamp holders, distribution fuse boards, switch gears, ceiling roses, brackets, pendants, fans and all other fittings of the same type shall be interchangeable in each installation. SWITCHES & RECEPTACLES (Piano Type)

1. CONTROL SWITCHES FOR POINTS:-

i. The switch box or regulator box shall be hot dipped galvanized, factory fabricated. The wall thickness shall not be less than 1.2 mm (18 gauge) for boxes up to a size of 20 cm x 30 cm, and above this size 1.6 mm (16 gauge) thick boxes shall be used. The metallic boxes shall be duly painted with anticorrosive paint before erection.

ii. Where a large number of control switches and/or fan regulators are required to be installed at one place, these shall be installed in more than one outlet box adjacent to each other for ease of maintenance.

iii. An earth terminal with stud & 2 metal washers shall be provided in each box for termination of protective conductors and for connection to socket outlet/metallic body of fan regulator etc.

iv. Clear depth of the box shall not be less than 50 mm, and this shall be increased suitably to accommodate mounting of fan regulators in flush pattern.

v. The fan regulators can also be mounted on the switch box covers, if so directed by the Engineer-in-charge.

vi. Control switches (single pole switches) carrying not more than 16 A shall be of piano type, as specified, and the switch shall be "ON" when the nob is down.

vii. Only MCB's shall be used for controlling industrial type socket outlets.

viii. Control switch shall be placed only in the live conductor of the circuit. No single pole switch or fuse shall be inserted in the protective (earth) conductor, or earthed neutral conductor of the circuit.

ix. All switches, regulators, outlets & other accessories shall be white colour with matching white cover plate. In no case ivory or off white switches shall be accepted.

x. All switches shall be as per IS 3854 amended up to date.

2. **SOCKET OUTLETS:-**

i. Socket outlet shall be of the same type, white piano type as their control switches. These shall be rated either for 5A/6A or 15A/16A. Combined 5A/15A or 6A/16A six pin socket outlet shall be provided in `power' circuits.

ii. In an earthed system of supply, socket outlets and plugs shall only be of 3 pin type, the third pin shall be connected to earth through protective (loop earthing) conductor. 2 pin or 5 pin sockets shall not be permitted to be used.

iii. Every socket outlets shall be controlled by a switch or MCB, as specified. The control switch/MCB shall be connected on the `live' side of the line.

iv. Outlet boxes for socket outlets (both15A/16A and 5A/6A) points shall be of size 175 mm x 100mm.

v. Unless and otherwise specified, the control switches for the 5A/6A and 15A/16A socket outlets shall be kept along with the socket outlets.

xi. All sockets shall be as per IS 1293 amended up to date.

3. SWITCH BOX COVERS:-

Phenolic laminated sheets of approved white shade (same as switches and sockets) shall be used for switch box covers. These shall be of white 3 mm thick synthetic phenolic resin bonded laminated sheet as base material and conforming to grade P-I of IS:2036-1974, Secured to the box with counter sunk C.P. Brass Screws. The corners of cover plates shall be at right angle.

SWITCHES & BOXES (Modular Type)

i. The switch box or regulator box shall be made of metal on all sides, except on the front. The boxes shall be used of the same make and model as of modular switches. In no case the locally manufactured switch boxes will be accepted. The size of box shall be

governed by the number of switches/outlets/regulators on the respective board. The boxes shall be with zinc plating and yellow passivation to complies with the rust test as per IS 3854. The boxes should have slotted holes for level adjustments. The boxes shall be fitted with riveted brass earth terminals for earth connections.

ii. Clear depth of the box shall not in a range of 50 mm to 65 mm depending upon the size of board and manufacturer.

iii Control switch shall be placed only in the live conductor of the circuit. No single pole switch or fuse shall be inserted in the protective (earth) conductor, or earthed neutral conductor of the circuit. The switches shall be provided with silver contacts. The neutral should make first and breaks last.

iv. Socket outlet shall be rated either for 5A/6A or 15A/16A. 5/6 Amp sockets shall be of 5 pin type with shutters. Combined 5A/15A or 6A/16A six pin shuttered socket outlet shall be provided in `power' circuits. The earth pin shall be connected to earth through protective (loop earthing) conductor. All sockets shall be provided with safety shutters to allow easy entry of two pin plugs without the need to force the earth terminal by unsafe means. All sockets shall confirm to IS: 1293.

v. Every socket outlet shall be controlled by a switch, as specified. The control switch shall be connected on the `live' side of the line.

Vi The switches and sockets shall be manufactured using engineering plastic to make it fire retardant and highly resistant to impact.

vii. The fan speed regulators shall be of electronic and stepped type

viii. The RJ-45 data socket shall be suitable for cat5/cat 6 data cables.

ix. Gold plated contacts shall be provided in all communication jacks to enhance data and voice transmission.

SWITCHGEAR AND CONTROLGEAR

1. GENERAL ASPECTS:-

i. All items of switchgear and distribution boards (DB's) shall be metal clad type.

ii. The types, rating and/or categories of switch gear and protective gear shall be as specified in the tender schedule of work.

iii. RCCB's and RCBO's where specified, shall conform to the requirements of current rating, fault rating, single phase or three phase configuration and sensitivity laid down in the tender documents.

iv. While each outgoing way of distribution board (D.B.) shall be of miniature circuit breaker (MCB) as specified, and of suitable rating on the phase conductor, the corresponding earthed neutral conductor shall be connected to a common neutral terminal block and shall be capable of being disconnected individually for testing purpose.

v. Independent earth terminal block.

Every distribution board (single phase as well as three phase) shall have an earth terminal block identical to, but independent from neutral terminal block, to enable termination of protective (loop earthing) conductors (incoming as well as out goings) individually by screwed connection and without twisting.

vi. Earthing terminal (1 for single phase and 2 for three phase) shall be provided on the metal cladding of switches and D.B.'s for body earthing. These shall be suitably marked.

vii. Knock out holes, with or without end plates as per standard design of manufacturers, shall be provided in the metal cladding of switches and D.B.' s for termination of conduits/cables.

viii. Each distribution board shall be provided with a circuit list giving details of each circuit which it controls and the current rating of the circuit, and the size of the fuse element.

2. MCB TYPE DISTRIBUTION BOARDS (MCB DB) :-

i. MCB DB' s may be of single phase, three phase (horizontal type) suitable for feeding single phase loads or 3 phase (vertical type) suitable for feeding single phase as well as three phase loads, each phase isolation type three phase DB in which each phase can be isolated by a separate circuit breaker or RCCB, as specified. These shall be complete with accessories, but without MCB's, which shall be specified as a separate item in the tender documents.

ii. The current ratings and the number of ways shall be as specified. Blanking plates shall be provided to close unused ways. These shall be indicated as a separate item in the Schedule of work. iii.

MCB DB's shall be of surface/flush mounting pattern according to the requirement of their location, and shall be suitable to accommodate MCB's and MCB type isolators and RCCB (ELCB) at incoming in single pole or multipole configuration, as required.

ii. MCB DB's shall be double door type, dust and vermin proof conforming to IP 42, and shall be fabricated out of CRCA sheet steel, 1.6 mm thick, with stove enameled paint finish.

v. In case of Concealed / Recessed D.B.'s, cutting of brick work, providing suitable lintel, making good the wall including plastering etc. with necessary civil work including all Civil material shall be included in contractor's scope for proper completion of work.

vi. MCB DB's shall have removal type end plates with knock-outs at the bottom and top, and shall have hinged covers with locking arrangement.

vii. Only the knobs of the MCB's shall protrude out of the front covers through openings neatly machine made for the purpose.

viii. The bus bars used shall be solid electrolytic copper of appropriate sections.

ix. Din bar(s) shall be provided for mounting the MCB's.

x. The complete board shall be factory fabricated and shall be duly pre-wired in the works, ready for installation at site.

xi. The board shall be fully pre wired with single core PVC insulated copper conductors/insulated solid copper links, and terminated on to extended type terminal connectors, suitable for connections to the sizes of the respective conductors.

xii. All incoming and outgoing wiring to the pre wired MCB DB's shall be terminated only in the extended terminal connectors to be provided within the DB. The terminal connectors shall therefore be so provided as to facilitate easy cable connections and subsequent maintenance.

3. MCCB TYPE DISTRIBUTION BOARDS (MCCB DB):-

i. All MCCB DB' s shall be of three phase suitable for feeding single phase loads or 3 phase loads through SP/TP MCB's, IP 42 enclosure, sheet steel, double door with tinned copper bus bar, neutral bar, earth bar, knock outs etc. The DB's shall be original factory fabricated of approved make.

ii. The current ratings of Incomer MCCB shall be upto 250 amp and the number of ways shall be as specified. Blanking plates shall be provided to close unused ways.

iii. MCCB DB shall be of surface/flush mounting pattern according to the requirement of their location, and shall be suitable to accommodate Four pole MCCB at incomer and SP/TP MCB's at outgoings, as required. iii. MCCB DB's shall be dust and vermin proof conforming to IP 42, and shall be fabricated out of CRCA sheet steel, 1.6 mm thick, with stove enameled paint finish.

v. In case of Concealed / Recessed D.B.'s, cutting of brick work, providing suitable lintel, making good the wall including plastering etc. with necessary civil work including all Civil material shall be included in contractor's scope for proper completion of work.

vi. MCCB DB's shall have removal type end plates with knock-outs at the bottom and top, and shall have hinged covers with locking arrangement.

viii. The bus bars used shall be solid electrolytic copper of appropriate sections.

ix. Din bar(s) shall be provided for mounting the MCB's.

4. WORKMANSHIP:-

i. Good workmanship is an essential requirement to be complied with. The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice.

ii. The work shall be carried out under the direct supervision of a first class licensed foreman, or of a person holding a certificate of competency issued by the state Government for the type of work involved, employed by the contractor, who shall rectify then and there the defects pointed out by the Engineer-in-charge during the progress of work.

5. COMMISSIONING ON COMPLETION:-

Before the workman leaves the work finally, he must make sure that the installation is in commission, after due testing.

6. COMPLETION PLAN AND COMPLETION CERTIFICATE :-

i. For all works completion certificate after completion of work shall be submitted to the Engineer-in-charge.

ii. Completion plan drawn to a suitable scale in tracing cloth with ink indicating the following, along with three blue print copies of the same shall also be submitted.

a) General layout of the building.

b) Locations of main switch board and distribution boards, indicating the circuit numbers controlled by them.

c) Position of all points and their controls.

d) Types of fittings, viz. fluorescent, pendants, brackets, bulkhead, fans and exhaust fans etc. e) Name of work, job number, accepted tender reference, actual date of completion, names of Division/Sub-Division and name of the firm who executed the work with their signature.

7. ADDITION TO AN INSTALLATION:-

An addition, temporary or permanent, shall not be made to the authorized load of an existing installation until it has been definitely ascertained that the current carrying capacity and the condition of the existing accessories, conductors, switches etc affected, including those of the supply Authorities, are adequate for the increased.

EARTHING

1. SCOPE :-

This chapter covers the essential requirements of earthing system components and their installation. For details not covered in these specifications. IS code of Practice on Earthing (IS:3043-1987) shall be referred to.

2. INSTALLATION :-

1. ELECTRODES :-

i. Plate electrode shall be buried in ground with its faces vertical, and its top not less than 3 m below the ground level. The installation shall be carried out as per standard drawing.

ii. When more than one electrode is to be installed, a separation of not less than 2 m shall be maintained between two adjacent electrodes.

iii. a) The strip or conductor electrode shall be buried in trench not less than 0.5 m deep.

b) If condition necessitate the use of more than one strip or conductor electrode, they shall be laid as widely distributed as possible, in a single straight trench where feasible, or preferably in a number of trenches radiating from one point.

iv. Normally an earth electrode shall not be located closer than 1.5 m from any building. Care shall be taken to see that the excavation for earth electrode does not affect the foundation of the building; in such cases, electrodes may be located further away from the building, with the prior approval of the Engineer-in-Charge.

3. WATERING ARRANGEMENT :-

i. In the case of plate earth electrodes, a watering pipe 20mm dia. medium class pipe shall be provided and attached to the electrodes. A funnel with mesh shall be provided on the top of this pipe for watering the earth.

ii. The watering funnel attachment shall be housed in a masonry enclosure of size not less than 30cm*30cm*30cm.
iii. A cost iron/MS frame with MS cover, 6 mm thick, and having locking arrangement shall be suitably embedded in the masonry enclosure.

4. EARTHING CONDUCTOR (Main earthing lead):-

i. The earthing conductor shall be securely terminated on to the plate with two bolts, nuts, check nuts and washers.
ii. A double C-clamp arrangement shall be provided for terminating tape type earthing conductor with GI watering pipe coupled to the pipe earth electrode. Galvanized "C" shaped strips, bolts, washers, nuts and check nuts of adequate size shall be used for the purpose.
iii. The earthing conductor from the electrode up to the building shall be protected from mechanical injury by a medium class 15 mm dia GI pipe in the case of wire, and by 40 mm dia, medium class GI pipe in the case of strip. The protection pipe in ground shall be buried at least 30 cm deep (to be increased 60 cm in case of road crossing and pavements). The portion within the building shall be recessed in walls and floors to adequate depth in due coordination with the building work.
iv. The earthing conductor shall be securely connected at the other end to the earth stud/earth bar provided on the switchboard by:
v. Soldered or preferably crimped lug, bolt, nut and washer in the case of wire, and,
vi. Bolt, nut and washer in case of strip conductor.
vii. Earthing Terminal / neutral point / earth bus in case of equipments / sub stations.

5. PROTECTIVE (Loop earthing/earth continuity) CONDUCTOR :-

i. Earth terminal of every switchboard in the distribution system shall be bonded to the earth bar/terminal of the upstream switchboard by protective conductor(s).
ii. Two protective conductors shall be provided for a switchboard carrying a 3 phase switch gear thereon.
iii. All the mountings of industrial type switchboards shall be bonded to the earth stud/earth bar using a protective conductor looping from one to another. Loop earthing of individual units will not be however necessary in the case of cubical type switchboards.
iv. The earth connector in every distribution board (DB) shall be securely connected to the earth stud/earth bar of the corresponding switchboard by a protective conductor.
v. All metallic switch boxes and regulator boxes in a circuit shall be connected to the earth connector in the DB by protective conductor (also called circuit protective or loop earthing conductor), looping from one box to another up to the DB.
VI. The earth pin of socket outlets as well as metallic body of fan regulators shall be connected to the earth stud in switch boxes by protective conductor. Where the switch boxes are non-metallic type, these shall be looped at the socket earth terminals, switch or at an independent screwed connector inside the switch box. Twisted earth connections shall not be accepted in any case.
VII. Double earthing strips in rising mains, bus trunking etc. shall be securely connected to the earth bar/earth stud at the sending end switchboard. In the case of overhead bus bar systems, protective conductors shall be provided in addition to feeder cable armouring connection.

6. EARTH RESISTANCE:-

i. The earth resistance at each electrode shall be measured. No earth electrode shall have a greater ohmic resistance than 5 ohms as measured by an approved earth testing apparatus. In rocky soil the resistance may be up to 8 ohms.

ii. Where the above stated earth resistance is not achieved, necessary improvement shall be made by additional provisions, such as additional electrode(s), different type of electrode, or artificial chemical treatment of soil etc., as may be directed by the Engineer-in-charge.

7. MARKING :-

i. Earth bars/terminals at all switchboards shall be marked permanently either as "E".

ii. Main earthing terminal shall be marked "SAFETY EARTH - DO NOT DISCONNECT

CABLES

LOW VOLTAGE (L.V.) CABLES

1. Wires

The design manufacture, testing and supply of single core FRLS PVC insulated 1.1 KV grade stranded twisted wires under this specifications shall comply with latest edition of following
standards.

IS : 3961 Current rating for cables.

IS : 5831 HRPVC/PVC insulation and sheath of electric cables.

IS : 694 HRPVC/PVC insulated cables for working voltage upto and including 1100 volts.

IEC : 754(i) FRLS PVC/HFFR insulated cable.

Copper/Aluminium stranded twisted conductor HRPVC / FRLS PVC / PVC insulated wires shall be used in conduit as per item of work. Aluminium for power cables and copper for control cables shall be used.

The wires shall be colour coded R Y B, for phases, Black for neutral and Green for earth. Progressive automatic in line indelible, legible and sequential marking of the length of cable in meters at every one meter shall be provided on the outer sheath of cable.

2. Cables

The design, manufacture, testing and supply of the cable under this specification shall comply with latest edition of following standards:

IS : 8130 Conductors for insulated electric cables and flexible cords.

IS : 5831 HRPVC/PVC insulation and sheath of electric cables.

IS : 3975 Mild steel wires, strips and tapes for armouring cables.

IS : 3961 Current rating of cables.

IS : 694 HRPVC/PVC insulated (heavy duty) electric cables for working voltage upto and including 1100 volts.

IS : 424-1475 (F-3)

Power cable-flammability test.

IS : 7098(I) Specification for cross linked polyethylene insulated XLPE/PVC sheathed cable for working voltage upto 1.1 KV. IS : 1554 Specification for PVC insulated (heavy duty) electric cables for working voltages upto and including 1100 volts.

IS : 10810 Testing method of cable.
IS : 6121 Cable glands.
ASTM-D : 2863 Standard method for measuring the minimum oxygen concentration to support candle-like combustion of plastics (Oxygen Index).
ASTM-D : 2843 Standard test method for measuring the density of smoke from the burning or decomposition.
IEEE : 383 Standard for type of test Class-IE, Electric cables, field splicers and connections for power generation station.
ASTME : 662IEC :
754 (A)
Standard test method for specific optical density of smoke generated by solid materials.
IS : 10418 Cable drums.
3. Technical Requirements
a) The cables shall be suitable for laying in racks, ducts, trenches conduits and under-ground buried installation with uncontrolled back fill and chances of flooding by water.
b) They shall be designed to withstand all mechanical, electrical and thermal stresses under steady state and transient operating condition.
c) The aluminium/copper wires used for manufacturing the cables shall be true circular/sector in shape before stranding and shall be of uniformly good quality, free from defects. The conductor used in manufacture of the cable shall be of H2 grade.
d) The cable should withstand 1 – 50 KA for 1 sec with insulation armour insulated at one end. Bidder shall furnish calculation in support of capability to withstand the earth fault currents. The current carrying capacity of armour and screen (as applicable) shall not be less than the earth fault current values and duration. Copper screen of each core shall be suitable for carrying full fault/earth current.
e) The fillers and inner sheath shall be of non-hygroscopic fire retardant materials and shall be suitable for the operating temperature of the cable.
Filler and inner sheath shall not stick to insulation and outer sheath. f) Progressive automatic in line indelible, legible and sequential marking of the length of the cable in meters at every one meters shall be provided on the outer sheath of all cables and at every 5 meter 'FRLS' marking in case of 'FRLS' cables.
g) Strip/Wire armouring following method (b) mentioned in IS:3975 shall only be acceptable. For single core cable aluminium wire armouring shall be used.
h) Allowable tolerance on the overall diameter of the cables shall be + 2mm.
i) The normal current rating of all PVC insulated cables shall be as per IS:3961.
j) A distinct inner sheath shall be provided by pressure extrusion process for all multicore armoured and unarmoured cables as per IS:5831.
k) Outer sheath shall be provided by extrusion process as per IS:5031.
l) The breaking load of armour joint shall not be less than 95% of that armour wire. Zinc rich paint shall be applied on armoured joint surface.
m) In plant repairs to the cables shall not be accepted.
n) All the cables shall be supplied in non-returnable drums as per IS:10418.

FRLS Cables

i) The inner and outer sheath of cables shall have an oxygen index of not less

than 29 as per ASTMD : 2863.
ii) The maximum acid gas generation by weight as per IEC:754 (i) shall not be more than 20% for outer sheath material of all cables. Bidder shall also guarantee the maximum theoretical acid gas generation with 20% by weight of outer sheath.
iii) The cables inner and outer sheath shall meet the requirement of light transmission of 40% (minimum and shall be tested as per ASTMD:2843). In case the test for light transmission is conducted as per ASTME:662. The bidder shall furnish smoke density values as per this standard and shall corelate the anticipated light transmission when tested as per ASTMD:2843.
iv) The cable shall pass the fire resistance test as per SS:42, 41, 475 (I) and flammability test as per IEEE:383.
v) Smoke/light density rated shall be 40% (minimum) and 65% (maximum).

5. Inspection

All cables shall be inspected at manufacture place and on receipt of the same at site checked for any damage during transit.

6. Joint in Cables

The contractor shall take care that the cables received at site are distributed to various locations in such a manner as to ensure maximum utilization and avoidance of cable jointing. Cable shall be rechecked before cutting in lengths, where the joints are unavoidable, the location of such joints shall be got approved from the Owner/Consultant. The joints shall be done by qualified jointer strictly in accordance with manufacturer's instruction/drawings.

7. Joint Boxes For Cables

The cable joint boxes shall be of appropriate size suitable for type of cable of particular voltage rating.

8. Jointing of Cables

All cable joints shall be made in suitable, approved cable joints boxes, on the jointing of cables in the joint box and the filling in of compound shall be done in accordance with manufacturer's instructions and in an approved manner. All straight through joints shall be done in epoxy mould boxes with epoxy resins. Straight through joints shall not be permitted unless the length of run is in excess of cable drum.

End terminations of cables more than 1.1 KV grade shall be done with epoxy mould boxed and epoxy resin. Cable glands shall be 1.1KV grade double compression type and made to tin plated heavy duty brass casting and machine finished. Glands shall be of robust construction capable of clamping cable and cable armour, firmly without injury of cable.

All washers and hardwares shall be made of brass tinned. Rubber components used in the glands shall be made of neoprene of tested quality.

Cable lugs shall be tinned copper/aluminium solderless crimping type conforming to IS:8309 suitable for aluminium or copper conductor.

Crimping of terminals shall be done by using Corrosion inhibitory compound, with crimping tool.

The contractor shall liaise fully with all other contractors to achieve an efficient and properly coordinated installation where equipment has to be re-positioned due to lack of site liaison, no extra cost shall be incurred by the client.

9. Testing of Cables

Cables shall be tested at factory as per requirement of IS:1554 Part-I. The tests shall incorporate routine tests, type tests and acceptance tests. Prior to dispatch of cables. All the testes will be witnessed by Employer / Consultant in accordance with testing procedure approved by Consultant at no extra cost to Employer. Besides that the following tests shall be carried out:

a) Insulation test between phases and phase to earth for each length of cable before and after jointing.

On completion of cable laying work, the following test shall be conducted in the presence of Architect/Owner.

a) Insulation resistance test (Sectional and overall) 1000/5000V depending upon the voltage grade of cable.

b) Continuity test.

10. Laying of Cable

The cable drum shall be placed on jacks before unwinding the cable. Great care shall be exercised in laying cables to avoid forming kinks. At all changes in directions in horizontal & vertical places, the cable shall be bent with a radius of bend not less than 12 – 15 times diameter and 8 times only at places of space constraints.

The cable of 1.1KV grade shall be laid not less than 750mm below ground level in a 375mm wide trench (throughout), where more than one cable is to be laid in the same trench, the width of the trench shall be increased such that the interaxial spacing between the cables except where otherwise specified shall at least be 150mm minimum or as per site requirements or as approved by the Engineer-incharge. Where single core cables are used in multiphase systems, the cables shall be installed in trefoil where possible.

In case the cables are laid in vertical formation due to unavoidable circumstance the depth per tier shall be increased by 200mm (minimum). Cable shall be laid in reasonably straight line, where a change in direction takes place a suitable curvature shall be i.e. either 20 times the dia meter of the cable or the radius of the bend shall not be less than twice the diameter of the cable drum or whichever less. Minimum 3 meter long loop shall be provided at both sides of every straight through joint & 3 meters at each end of cable or as directed at site.

Greater care shall be exercised in handling the cable in order to avoid forming ‘Kinks’. the cable drum shall in-verbally conveyed on wheels and the cable unrolled in right direction as indicated on the drum by the manufacturer. The cable shall be pulled over rollers in the trench steadily and uniformly without jerks and strains.

Cables laid in trenches in single tier formation, 10 cms. in total sand cushioning be provided below and above the cable before a protective cover is laid. For every additional vertical tier. The 30cm of sand cushion be provided over the initial tier. The cable shall be protected by 2nd class bricks of size not less than 230x115x75mm, stone tiles/RCC curved channel be placed on top of the sand breadth wise for the full length of the cable and where more than one cable is to be laid in the same trench the brick shall cover all cables and project at least 8 cms. over the outer sides of the end cables.

Filling of trenches shall be done after the sand cushioning and laying of tiles or bricks are carried out to the satisfaction of the Engineer-in-charge (Refer drawing). Back fill for trenches shall be filled in layer not exceeding 150 mm. Each layer shall be properly rammed & consolidate before laying the next layer.

RCC pipe shall be provided for all road crossing. The size of the pipe shall be according to the cable and a minimum 100mm dia. pipe shall be provided. The pipe shall be laid in ground with special arrangement and shall be cement jointed and concreting shall be made as per relevant IS with latest amendment. Nothing extra shall be paid on this account. Location of cables laid directly underground shall be indicated by cable marker at an interval of 30 meters & with change of direction. Aluminium strip cable tag of 20mm wide with engraved tag no. shall be provided at both ends of cable.

Where the cables are to be laid in ducts (masonry trenches) in side the building, they will have to be laid on MS rack/ on MS cable trays grouted in walls trenches. Cables sizing through floors shall be protected from mechanical damage by a steel channel to a height of one meter above the floor where cable pass through wall they shall be sleeved with PVC/steel conduit.

Where the cables are laid in open (in building) along walls, ceiling or above false ceiling, cable rack (ladder type) or cable tray shall be provided. The size of the cable tray or rack shall depend on the number of cables to pass over that rack. Cable tray/rack shall be properly supported through wall/ceiling according to the site conditions. Cable laid on tray & riser shall be neatly dressed &clamped at an interval of 1000 mm & 750mm for horizontal & vertical cable run respectively either side at each bend of cable. All power cables shall be clamped individually & control cables shall be clamped in groups of three or four cables. Clamps for multicore cables shall be fabricated of 25x3 GI flats. Single core power cable shall be laid in trefoil formation & clamped with trefoil clamps made of PVC/fiber glass. Cable openings in wall/floor shall be sealed by the contractor suitably by Hessian tape & bitumen compound or by any other proven to prevent ingress of water. After the cables are laid, shall be tested as per IS and the results submitted to Architects/Engineer and in case the results found unsatisfactory, all the repairing/ replacing of cables will be done by the contractor free of charge.

Cable shall be installed so that separation shown in the table below are observed.

HV Cable	-	HV Cable	50 mm
ELV & LV 230 V/433 V	-	ELV & LV cable 230 V/433 V	50 mm
HV cables	-	ELV & LV cables 230 V/433 V	300 mm
LV cables 433 V	-	Telephone/Instrument cable	350 mm
All cables	-	All wet / hot pipe work	600 mm

L. T. PANEL

1. CONSTRUCTION FEATURES

a) Panels shall be indoor, metal clad, modular construction, fix type (except circuit breaker cubicles) air insulated and floor mounted type.

b) Unless otherwise mentioned, panels shall be of single front construction and shall be of dead front type.

c) All panels shall be extensible on both sides.

d) All panels shall be dust proof and vermin proof.

e) The panels shall have horizontal Bus bar Chamber at top of the panel even for top cable entry.

f) All panels shall have provision for cable entry from top or from bottom or both as required. The same shall be confirmed to the Vendor during detailed engineering approval of shop drawing of panel manufacturer.

g) All panels including capacitor panels shall be fully compartmentalized with metal insulating partitions between individual compartments.

h) The Horizontal bus bar chamber shall be separate & totally enclosed.

i) Minimum thickness of CRCA MS sheet member shall be 1.6 mm for non load bearing members and 2.0 mm for load bearing members.

j) All panels shall comprise a continuous line up of dead front, free standing vertical sections. The installation of circuit breakers shall be limited to the bottom two tiers only. In two tiers formation two nos. of up to 1000 Amp. breakers can be provided.

k) All doors and cutouts shall be provided with neoprene gaskets.

l) The back doors of the panels shall be double door leaf type where the panels have more than 400 mm width.

m) All doors shall be supported by strong concealed type hinges.

n) All relays, meters, and switches etc. shall be flush mounted type.

o) All incoming terminals shall be provided with shrouds. Supports / shrouds shall be transparent and shall be made of SMC / DMC material. However Bakelite Hylam material is not acceptable and shall not be used anywhere in panels.

p) The complete structure shall be rigid, self supporting free from vibration, twists and bends etc.

q) The panels housing circuit breaker feeders shall be in single front draw out execution. The incoming & bus coupler circuit breaker feeders shall be in single tier formation while the outgoing circuit breaker feeders may be in double tier formation, unless otherwise specified.

r) A suitable barrier shall be provided between the circuit breaker and the associated control.

s) The number of modules shall be so decided that the cable alleys are not over crowded. However the number of module in any panel shall not exceed six. The minimum size of module shall be 300mm and 225mm for starter and switch fuse / MCCBs feeders respectively. The minimum clear width of cable alley shall be 300mm.

t) In cable alley, outgoing terminals shall be identified with feeder number.

u) The panel shall be provided with three phase buses and neutral bus bars of aluminium sections throughout the length of the panel and shall be adequately supported and braced to withstand the stresses due to the short circuit. Maximum temperature rise of bus bars and bus bar connection while carrying rated current shall not exceed 40 C over an ambient temperature of 50 C. Bus bar sizing calculation shall be submitted for approval before start of fabrication..

2 BUS AND BUS TAPS

a) The main buses and connection shall be of high grade of aluminium bus bars conductivity aluminium 1 aluminium alloy (Grade EC-91 E), sized for specified current ratings with max, temp. limited to 85 deg. C (35 deg. above 50 deg. ambient temp.).

b) Vertical bus bars shall be designed depending upon the actual feeder requirement. Bimetallic connector shall be provided for connection between dissimilar metals.

c) Bus bars and connections shall be fully insulated for working voltage with adequate phase 1 ground clearances. Insulating sleeves for Bus bars and shrouds for joint shall be provided. Minimum clearance of 25 mm is required between phases and between phase & earth.

d) Shrouds for bus bars joints / tapping points shall be of fiber glass only. Bus insulators shall be flame retardant, track resistant type with high creepage surface and of non-hygroscopic material such as epoxy / SMC / DMC.

e) Bus bars shall be supported and braced to withstand the stresses due to max. short circuit current and also to take care of any thermal expansion. .

f) The bus bar size shall be of similar size as of bus duct.

3 CHANGEOVER SWITCHES

a) Changeover switches shall be 3 pole, heavy duty, group operated load break fault make type with AC 23A duty.

b) The switches shall be capable of successfully withstanding the thermal stress for one sec. caused by the short circuit corresponding to the fault level specified.

c) The switches shall be able to withstand mechanical stresses caused by the peak short circuit currents corresponding fault level specified.

d) The switches shall be provided with operating handle compartment door and shall be so interlocked that on the hinged compartment door and shall be so interlocked that:

e) The door can be opened only when the switch is in OFF position.

f) It shall not be possible to close the switch when the door is open.

g) The switch shall be provided with pad-locking arrangement for 250A and above rating.

h) The switch shall be provided with defeat interlock facilities.

4 FUSES

a) All fuses shall be HRC cartridge link type.

b) The fuses shall be provided with visible indication when they have operated.

c) Rating of the fuses shall be so chosen so as to have co-ordination with switch. Fuses shall preferably mounted directly on plug in type fuse bases & sufficient number of insulated fuse pullers shall be supplied.

d) Fuses and links functionally associated with the same circuit shall be mounted side by side.

Earthing and neutral links in main supply circuits shall be of silver plated copper & of bolted pattern.

5 CONTACTORS

a) Contactors shall be of double break, single throw and electromagnetic and non gravity type.

b) Contactors shall be suitable for interrupted duty and shall be rated for class AC-3 duty.

c) Main contacts of contactors shall be silver faced.

d) Operating coils of contactors shall be suitable for operation on 220/240V AC, 1 phase, 50 Hz supply. e) Contactors shall be provided with at least two pairs of 'NO' and 'NC auxiliary contacts.

f) Contactors shall not drop out at voltages down to 70% of coil rated voltages and min. pick up voltage shall be 85%.

6 OVERLOAD RELAYS

a) Overload protection for each motor feeder (wherever required) shall be provided by thermal overload relay on each of the three phases.

b) The relay shall be duly compensated against fluctuations on ambient temp. and frequency and shall have single phasing preventer feature.

c) Relay shall be hand reset type from the front of the cubicle door.

Overload relay for fan applications shall be of heavy duty type with provision of bypassing the same during starting of the fan.

7 CAPACITORS

a) The capacitor shall be of mixed dielectric type rated for 440Volts. Capacitors shall be provided with discharge resistors. The value of discharge resistors should be such that the residual voltage be less than 50V in one minute.

b) Capacitors shall be suitable for prolonged operation at an rms. voltage between terminals not exceeding 1.10 times the rated voltage, excluding transients.

c) Capacitors shall be suitable for continuous operation at an rms. line current not exceeding 1.30 times the current which occurs at rated sinusoidal voltage and rated frequency excluding transients.

d) The maximum continuous reactive output of a capacitor (including any due to flow of harmonic currents) shall not exceed 30% over rated reactive output of a capacitor.

e) Loss in the capacitors shall be kept as low as possible. (Max. 0.5W/KV AR).

f) Wherever capacitor consists of several elements inside the units, each element shall be provided with individual fuses, so that the unit need not be discharged or

disconnected (although with moderate reduction in output), if one of short circuit to any of the elements.

8 AUTOMATIC POWER FACTOR CONTROL RELAY

a) Automatic Power factor control relay (APFCR) shall operate its auxiliary relay by sensing the power factor of the plant thru' current and voltage signals.

b) APFCR shall have no. of steps specified in drawings. c) APFCR shall be provided with Built in PF meter (0.5 lag to 0.5 lead), calibrated setting dial.

d) APFCR shall be suitable for 5A secondary current.

e) APFCR shall be suitable for flush mounting in capacitor panel/MCCs.

f) Current rating of its auxiliary relay shall be compatible with switching and continuous energization of main contactor of capacitors. Otherwise, additional relay shall be provided.

9 COOLING

a) All the Capacitor Panels shall be properly ventilated. If required a small exhaust fan of suitable rating shall be provided on the rear door of the panel, with the opening properly covered with fine wire mesh. The fan shall start/stop automatically along with normal start/stop provision.

b) Louvers shall be provided on the door on rear side with a fine wire mesh.

10 CURRENT TRANSFORMERS

a) Current Transformers shall be cast - resin type .AII secondary connections shall be brought out to terminal blocks where connection will be made.

b) Accuracy class of the current transformers shall be :

(i) Class 5P20 for protection.

(ii) Class 1.0 for metering.

(iii) Class PS for differential Protection & REF.

c) Current transformer shall be provided with test links and shorting on both secondary leads for testing purpose.

d) All current transformers shall be earthed by a separate earth link on terminal blocks.

e) Additional name plate of CTs l PTs shall be provided (if required) at such a place that it shall be possible to find out details of CTs l PTs after mounting in the panel.

11 VOLTAGE TRANSFORMERS

a) Voltage transformers shall be cast-resin, fixed type and shall have an accuracy class of 1.0.

b) Low voltage fuses, sized to prevent overload, shall be installed in all ungrounded secondary leads. Fuses shall be suitably located to permit easy replacement while the board is energized.

12 RELAYS

Relays wherever provided shall be of draw-out design with built-in testing facilities. Small auxiliary relays may be in non-draw out execution-.

13 CONTROL AND SELECTOR SWITCHES

a) Control and selector switches shall be of rotary type having enclosed contacts, which are accessible by the removal of cover.

b) Control and selector switches shall be of flush mounted type and on front of panels. .

c) Selector switches shall be of stay-put maintained contact type.

d) Control switches shall be provided with escutcheon plate clearly marked to show the position.

14 INDICATING METERS AND INSTRUMENTS

Indicating instrument (96 x 96 mm) shall be digital meter, switch board type and accuracy class of.! (1 % full scale ± 1 count).

15 INDICATING LAMPS

a) Indicating lamps shall be of LED type, low watt consumption and provided with appropriate value of resistors. The LEDs shall also have an in-built surge suppressor.

b) Bulbs and lenses shall be interchangeable and easily replaceable from the front of the panel.

16 PUSH BUTTONS

a) All push buttons shall be of the push to actuate the contact type.

b) All push buttons shall be oil tight and shall be provided with adequate no. of contacts.

17 POWER AND CONTROL CABLE TERMINATION

a) Suitable supporting arrangement shall be provided for all power and control cables entering the panel.

b) Removable undrilled gland plate of 3 mm thick of MS for multicore cables and 4mm thick of Aluminium for single core cables sufficient in size to accommodate all compression type, heavy duty brass glands shall be provided.

c) Adequate termination arrangement shall be provided for all power cables which shall be aluminium / copper conductor, PVC insulated, sheathed, armoured PVC sleeved overall, heavy duty cables, 1.1 KV grade. Power cables termination shall be by means of crimping type lugs on conductor cables.

d) The terminal blocks shall be bolted lug type for cables. These shall be protected type and rated for 1100 Volts service. The minimum current rating of terminal block shall be 16 Amp. The construction shall be such that after the connection of cable by means of lugs, necessary clearance and creep age distance are available.

e) Wherever there is more than one equipment connected on the same feeder, separate terminals shall be provided.

18 INTERNAL WIRING

a) All internal wring shall be carried out with stranded copper conductors, PVC insulated, 1100/650 V grade.

b) Min. size of conductor 2.5 sq. mm for AC control wiring and 4.0 sq. mm. for DC control wiring. Current transformer secondary wiring shall be with 2.5 sq. mm conductor.

C) All wiring shall be run on the sides of the panels and shall be neatly bunched and shall not affect access to equipment mounted in the panels.

d) Wiring shall be terminated on terminal blocks using crimping type lugs and without joints or tees on their runs.

e) Power wiring shall be done either by phase identifying colored wires or suitably colored PVC sleeves shall be provided at each end of wire.

The following wiring codes shall be used.

Instrument Transformer : Red, yellow or blue depending upon phase with which wire is associated.

A-C phase wire : White

A-C Neutral wire : Black

Earth connection : Green

f) PVC identification ferrules, yellow colour with black engraved letter shall be provided at each end of all control wires marked to correspond with equipment designation & termination numbers.

g) Ferrules provided shall be oil tight and numbered from left to right.

19 TERMINAL BLOCKS

a) Terminal blocks for control wiring shall be 650V grade 10 sq. mm size.

b) Terminal blocks shall be grouped depending on circuit voltage. Different voltage groups of terminals blocks shall be segregated. c) Terminals blocks shall be numbered for identification and provision shall be provided for terminal labels.

d) Terminal blocks requiring duplication shall be provided with solid bonding links.

e) Terminal blocks for current transformer secondary lead wires shall be provided with shorting, disconnecting I earthing facilities.

f) Terminal blocks and control wiring shall be so arranged that only one conductor of external wiring required to be terminated in at each terminal.

20 GROUND BUS

a) A ground bus, rated to carry maximum fault current, shall extend to full length of the panel.

b) The ground bus shall be provided with two-bolt drilling with GJ. bolts and nuts at each end to receive up to 75X 10 mm G.I. flat. .

c) Each stationary unit shall be connected directly to the ground bus. The frame of each circuit breaker and shall be grounded through heavy multiple contacts at all times.

d) Wherever the schematic diagrams indicate a definite ground at the switchgear, a single wire for each circuit thus grounded shall be run independent to the ground bus and connected thereto.

e) C.T. shall be earthed through removable links so that earth of one circuit may be removed without disturbing other.

f) Frames and non current carrying metal parts of all equipment mounted shall be effectively to earth bus.

g) All hinged doors shall be connected to earth bus by flexible tinned bare copper wire.

h) Instrument and relay cabinets shall be connected to earth by 2.5 sq. mm stranded copper insulated wire 1100 V grade.

21 SPACE HEATERS

Each cubicle shall be provided with thermostat controlled space heaters.

22 AC/DC POWER SUPPLY

a) The panels shall be suitable to receive following power supplies.

AC Supply : Single Feeder

DC Supply : Double Feeder

b) Isolating switch fuse units shall be provided at each switchgear for the incoming supplies, 4-pole, single throw for AC. c) Bus-wires of adequate capacity shall be provided to distribute the incoming supplies to different cubicles. Isolating switch-fuse units shall be provided at each cubicle for AC supplies.

d) AC load shall be so distributed as to present a balance loading on three phase supply system.

23 NAME PLATES

a) Name plates of anodized aluminium shall be furnished at cubicle and at each instrument, device mounted on and inside the cubicle.

b) Caution notice on suitable metal plate shall be affixed at the back of each vertical panel.

c) Name plates for feeders shall be provided on front and back of the panel.

24 TROPICAL PROTECTION

a) All equipment, accessories and wiring shall have fungus protection, involving special treatment of insulation and metal against fungus, insects and corrosion.

b) Screens of corrosion resistant material shall be furnished on all ventilating louvers to prevent the entrance of insects.

25 PAINTING

a) All surfaces shall be sand blasted, pickled and grounded as required to produce a smooth, clean surface free of scale, grease and rust.

b) After clearing, the surfaces shall be given a phosphate coating followed by 2 coats of high quality primer and stoved after each coat.

c) The panels shall be finished with two coats of Siemens Grey (Shade RAL 7032) powder coated / Polyester enameled.

26 TESTS & INSPECTION

After completion of all work at the manufacturer's works the switchboards shall be inspected and tested in presence of Purchaser's representative. However, stage inspection may be carried out from time to time to check progress of work and workmanship. The following tests shall be carried out:

i) All routine tests specified in relevant Indian/British Standards shall be carried out on all circuit breakers.

ii) Test for protective relay operation by primary or secondary injection method.

iii) Operation of all meters.

iv) Secondary wiring continuity test

v) Insulation test with 1000 Volts megger, before and after voltage test. vi) HV test on secondary wiring and components on which such test is permissible (2 KV for one minute)

vii) Simulating external circuits for remote operation of breaker, remote indicating lights and other remote operations, if any.

viii) Measurement of power required for closing/trip coil of the breaker.

ix) Pick up and drop out voltages for shunt trip and closing coils.

x) CT Polarity test.

Vendor shall provide all facilities such as power supply, testing instruments and apparatus required for carrying out the tests. Required copies of test certificates for all

the tests carried out along with copies of type test certificates and certificates from Sub-Vendor for the components procured from them are to be submitted before dispatch of switch boards.

27. DRAWINGS AND INFORMATION

The Vendor shall furnish following drawings/documents in accordance with enclosed requirements:

i) General Arrangement drawing of the Switchboard, showing front view, plan, foundation plan, floor cutouts/trenches for external cables and elevations, transport sections and weights.

ii) Sectional drawings of the circuit breaker panels, showing general constructional features, mounting details of various devices, bus bars, current transformers, cable boxes, terminal boxes for control cables etc.

iii) Schematic and control wiring diagram for circuit breaker and protection including indicating devices, metering instruments, alarms, space heaters etc. Vendor drawings to be based on Purchaser's Control Wiring Diagram, if furnished.

iv) Terminal plans showing terminal numbers, ferrules markings, device terminalnumbers, function etc.

v) Relay wiring diagrams.

vi) Equipment List.

Vendor shall furnish required number of copies of above drawings for Purchaser's review, fabrication of switch boards shall start only after Purchaser's clearance for the same. After final review, required number of copies and reproducible shall be furnished as final certified drawings.

The information furnished shall include the following:

i) Technical literature giving complete information of the equipment.

ii) Erection, Operation and Maintenance Manual complete with all relevant information, drawings and literature for auxiliary equipment and accessories, characteristics curves for relays etc.

iii) A comprehensive spare parts catalogue.

TOOLS

One complete set of all special or non-standard tools required for installation, operation and maintenance of the switch board shall be provided. The manufacturer shall provide a list of such tools individually priced with his quotation.

DEVIATIONS

Deviation from specification must be stated in writing at the quotation stage. In absence of such a statement, it will be assumed that the requirements of the specifications are met without exception.

PART-II

PRICE BID
FOR

ELECTRICAL WORKS-PORTAL STRUCTURES RESIDENTIAL AREA-EXTERNAL-PHASE-II

AT

INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY,
AMARKANTAK (M.P.)

NATIONAL PROJECTS CONSTRUCTION CORPORATION LIMITED

(A GOVT. OF INDIA ENTERPRISE)

ABSTRACT OF EXTERNAL ELECTRICAL WORKS – PORTAL PHASE 2 OF IGNTU			
Sub Head	**Description**	**Amount (DSR Items) (in Rs.) A**	**Amount (NS Items) (in Rs.)B**
I	**Cables**	**820,715.80**	**4,544,072.08**
II	**Earthing System**	**389,868.00**	**827,701.29**
III	**HT System**	**42,110.00**	**7,148,663.39**
IV	**External Lighting**	**-**	**882,498.38**
V	**DG Set**	**-**	**2,295,768.90**
VI	**Feeder Pillars**	**-**	**2,410,995.00**
	Total (In Rs.)	**1,252,693.80**	**18,109,699.02**
	Cost Index @13% for DSR Items	**162,850.19**	**-**
	Total (In Rs.)	**1,415,543.99**	**18,109,699.02**
	Quoted percentage above (+)		
	Quoted percentage below (-)		
VII	**Total Amount (A+B)**		
Amount in words:			

NATIONAL PROJECS CONSTRUCTION CORPORATION LIMITED
(A GOVT. OF INDIA ENTERPRISE)

Sr. No	SR Item Codes	Description	Unit	Qty	Rate	Amount
Sub-	Hed-1:	LT Cables (DSR Items)				
1	Part-II External 1.1 MVCBGR25	Laying of one number PVC insulated & PVC sheathed/XLPE Power Cable of 1.1.KV grade of size not exceeding 25 sq.mm direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required.	Meter	1080	85.00	91,800.00
2	Part-II, External 1.2. MVCBGR25	Laying of one number PVC insulated & PVC sheathed/XLPE Power Cable of 1.1.KV grade of size not exceeding25 sq.mm but not exceeding 120 sq.mm direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required.	Meter	100	91.00	9,100.00
3.	Part-II, External 1.3 MVCBGR400	Laying of one number PVC insulated & PVC sheathed/XLPE Power Cable of 1.1.KV grade of size not exceeding 120 sq.mm but not exceeding 400 sq.mm direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required.	Meter	1130	97.00	109,610.00
4.	Part-II, External 1.4 MVCBGRT25	Laying of one number PVC insulated & PVC sheathed/XLPE Power Cable of 1.1.KV grade of size not exceeding 25 sq.mm direct in ground in the same trench in onr tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc. as required.	Meter	1600	57.00	91,200.00
5.	Part-II, External 1.5 MVCBGRT120	Laying of one number PVC insulated & PVC sheathed/XLPE Power Cable of 1.1.KV grade of size not exceeding 25 sq.mm but not exceeding 120 Sq.mm direct in ground in the same trench in onr tier horizontal formation including excavation, sand	Meter	20	60.00	1,200.00

		cushioning, protective covering and refilling the trench etc. as required.				
6	Part-II, External 1.6 MVCBGRT400	Laying of one number PVC insulated & PVC sheathed/XLPE Power Cable of 1.1.KV grade of size not exceeding 25 sq.mm but not exceeding 400 Sq.mm direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc. as required.	Meter	600	63.00	37,800.00
7	Part-II, External 1.7 MVCBPIP25	Laying of one number PVC insulated & PVC sheathed/XLPE Power Cable of 1.1.KV grade of size not exceeding 25 sq.mm in existing RCC/HUME/STONEWARE/METAL pipe etc. as required.	Meter	85	15.00	1.275.00
8.	Part-II, External 1.7 MVCBPIP400	Laying of one number PVC insulated & PVC sheathed/XLPE Power Cable of 1.1.KV grade of size exceeding 25 sq.mm but not exceeding 400 sq.mm in existing RCC/HUME/STONEWARE/METAL pipe etc. as required.	Meter	150	15.00	2.250.00
9	Part-II, External 1.11 MVCBSUR 25	Laying of one number PVC insulated & PVC sheathed/XLPE Aluminum conductor cable of 1.1.KV grade of size not exceeding 25 sq.mm on surface as required	Meter	50	31.00	1,550.00
10	Part-II, External 1.12 MVCBSUR 120	Laying of one number PVC insulated & PVC sheathed/XLPE Aluminum conductor cable of 1.1.KV grade of size exceeding 25 sq.mm but not exceeding 400 sq.mm on surface as required	Meter		59.00	
11	Part-II, External 1.13 MVCBSUR 400	Laying of one number PVC insulated & PVC sheathed/XLPE Aluminum conductor cable of 1.1.KV grade of size exceeding 120 sq.mm but not exceeding 400 sq.mm on surface as required	Meter	35	61.00	2,135.00
12	Part-II, External	Supplying & making of end terminations with brass				

	4.1.MVET	compression gland and Al. lugs for following sizes of PVC insulated and PVC sheathed/SLPE Al. conductor cable of 1.1 KV grade as required.				
a)	4.1.30	3.5 x 300sq.mm	Each	14	508.00	7,112.00
b)	4.1.27	3.5 x 185sq.mm	Each	14	319.00	4,466.00
c)	4.1.24	3.5 x 95sq.mm	Each	4	197.00	788.00
d)	4.1.33	4 x 16sq.mm	Each	16	196.00	3,136.00
e)	4.1.34	4 x 25sq.mm	Each	2	137.00	274.00
13	Part-II, External 3.1.CBTR	Fabricating and installation of following size of perforated MS cable Trays including horizontal & vertical bends, reducers, tees, cross members, and other accessories as required and duly suspended from the ceiling with MS suspenders and including painting with powder coating etc. as required.				
a)	3.1.2	150mm width x 50mm depth x 1.6mm thickness	Meter	50	335.00	16,750.00
b)	3.1.4	300mm width x 50mm depth x 1.6mm thickness	Meter	75	524.00	39,300.00
c)	3.1.6	450mm width x 50mm depth x 1.6mm thickness	Meter	0	775.00	
14	DSR for drainage works	Constructing brick masonry Manholes in cement mortar(cement: coarse sand- 1:4) RCC top slab with (Cement: coarse sand: stone aggregate-1:2:4) foundation concrete (cement: sand: stone aggregate-1:4:8) inside plastering 12mm thick with cement mortar				
a)	19.7.1.1+(19.8.1.1x0.30)-19.18.1.+19.19.1.1	Inside 900mm x 800mm and 750mm deep with FPS bricks with class designation -75,including pre-cast RCC manhole cover& frame of rectangular shape of 600 mm x 450mm internal dimension	Nos	34	6055.70	205,893.80
b)	19.7.2.1-19.18.1+ 19.19.1.1	Inside 1200mm x 900mm deep with FPS bricks with class designation -75,including pre-cast RCC manhole cover& frame of rectangular shape of 600 mm x 450mm internal dimension	Nos.	8	11758.00	94,064.00

15	DSR for Earth works – 19.6	Supplying and laying NP22 class RCC Hume pipe with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 as required, complete with excavation of suitable size of trenches and making good of the same				
a)	19.6.2+ 2.10.1.2	150 mm dia	Mtrs.	40	317.90	12,716
b)	19.6.3 +2.10.1.2	250 mm dia	Mtrs.		373.25	
c)	19.6.4 +2.10.1.2	300 mm dia	Mtrs.		453.80	
d)	19.6.5 +2.10.1.3	450 mm dia	Mtrs.	130	679.20	88296.00
	Total of Sub-Head – 1 carried to summary sheet (DSR Item)					820,715.80
S.No.	DSR Item Codes	Description	Unit	Qty	Rate	Amount
	Sub-Head -1 L.T Cables (Non-Schedule Items)					
1	NSI	Supply of following sizes of XLPE/PVC insulated Aluminum/Copper conductor strip/wire armored, overall PVC sheathed 1.1 KV grade cables conforming to relevant IS code and technical specifications.				
1.1	NSI	XLPE insulated AI Ar. Cable				
a)		3.5 x 300sq.mm	Meter	1545	2075.71	3,206,977.57
b)		3.5 x 185sq.mm	Meter	340	1357.61	461,585.72
c)		3.5 x 95 sq.mm	Meter	150	739.31	110,896.11
d)		4 x 16 sq.mm	Meter	470	222.59	104,615.97
e)		4 x 25 sq.mm	Meter	300	295.90	88,769.88
2	NSI	Supplying of following sizes of XLPE/PVC insulated Aluminum/Copper conductor strip/wire Armored, overall PVC sheathed 1.1.KV grade cables conforming to				

		relevant IS code and technical specifications.				
2.1	NSI	SLPE insulated Cu. Ar. Cable				
a)		2 x 4 sq.mm	Meter	750	211.99	158,990.83
b)		4 x 6 Sq.mm	Meter	495	522.90	258,837.07
c)		2 x 2.5 Sq.mm	Meter	800	167.82	134,258.92
				4850		
3	NSI	Supply and making End termination with brass Single/Double compression gland including providing and crimping of aluminum/copper solder less lugs/ferrules for XLPE/PVC insulated armored power aluminum/copper conductor cables 1.1 KV grade of following sizes				
3.1	NSI	Single Compression Gland for Cu. Cable				
a)		2C x 4 Sq.mm	Each	60	165.00	9,900.00
b)		4c X 6 Sq.mm	Each	18	380.00	6,840.00
		2C x 2.5 Sq.mm	Each	20	120.00	2,400.00
		Total of Sub Head -1 Carried to summary sheet (NS Item)				4,544,072.08
S. No.	DSR Item Codes	Description	Unit	Qty	Rate	Amount
		Sub-Head II- Earthling System (DSR Items)				
1.1	3.5EARGIPL	Earthing with G.I. earth Plate 600mm x600mm x 6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) as required.	Sets	20.00	1585.00	31700.00
1.2	3.8 EARCOKPL	Extra for using slat and coke for G.I. or Copper Plate earth electro code as required.	Sets	20.00	1484.00	29680.00
2.1	3.6 EARCUPL	Earthing with G.I. earth Plate 600mm x600mm x 6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement	Sets	4.00	3263.00	13052.00

		and watering pipe etc. (but without charcoal or coke and salt) as required.				
2.2.	3.8 EARCOKPL	Extra for using slat and coke for G.I. or Copper Plate earth electro code as required.	Sets	4.00	1484.00	5936.00
3.	3.17 EARCUSTSUR	P/F 25mm x 5 mm Copper Strip on surface or in recess for connections etc as required.	Sets		358.00	
4	4.14 LCEARGIT	Providing and laying 32mm x 6 mm G.I. Strip	Meter	500.00	65.00	32500.00
5	3.19 EARGIWRSUR	Providing and fixing 6SWG dia GI Wire on surface or in recess for lop earthing as required	Meter.	6000.00	24.00	144000.00
6	1.21 PVCCON	Supplying & fixing of following sizes of PVC conduit along with accessories in surface/recessed including cutting the wall & making good the same in case of recessed conduit as required, for conduiting in Flat and form flat to LV shaft				
A	1.21.2	25 mm dia	Mtrs		47.00	
7	3.23 EARBUS	Providing and fixing 50mm x 5 mm Cu. Strip on surface or in recess for connections etc. as required.	RM	200.00	665.00	133000.00
		Total Sub-Head – II carried to summary sheet (DSR Items)				389868.00
S.No.	DSR ItemCodes	Description	Unit	Qty	Rate	Amount
	Sub-Head II – Earthing	And Lightening Conductor System (Non- DSR Items)				
1	NSI	Providing and fixing following sizes of G.I. Strip on surface/existing cable tray/PVC Pipe complete with all necessary hardwares as required for fixing				
a		50mm x 5 mm	RM	800.00	150.00	120000.00
2	NSI	Providing & Laying of following PVC insulated Cu. Conductor unarmored cable				
a		1C x 70 sq.mm (Lightning arrestor)	RM	200.00	726.41	145282.29
3	NSI	Supply, erection, testing & commissioning of ESE Stormaster type Lightning Protection complete with the	Sets	4.00	140604.75	562419.00

		lightning Air Terminal-Configured asa Spheroid which is comprised of separate electrically isolated 4 panels surrounding an Earthed Central Finial. The insulation material used to electrically isolate the panels shll be comprised of a base polymer which provides high Ozone & UV resistance with a dl-electric strength of 24-38 KV/mm tested as per NFC 17-102&IEC 60-1:1989. The ESE terminal shall be tested & certified by CPRI(Central Power Research Institute, Govt. of India) for the Impulse current of 45 KA(8/20 micro sec)with 5 positive &5 negative impulse. The terminal shall offer a protection radius of 50-68 Meters with the level 1 (High) protection & preferably to be mounted on roof top & centre of the building.				
		Total of Sub-Head –II carried to summary sheet (Non-schedule Items)				827701.290
S.No.	DSR Item Codes	Description	Unit	Qty	Rate	Amount
1	Sub-Head –III:33 KV HT	SUBSTATION (NON- DSR ITEMS)	EACH	1.00	7093029.84	7093029.84
		Supply, unloading, shifting, erection, testing & commissioning of Package type sub-stations (PSSS) as per specifications, complete with 33 KV, 16KA Switchgears, Transformers and 1100V Switchgear as per specification & as described below:-				
		(Note : The Civil RCC foundation for PSS shall be in the scope of Civil Contractor but approval of related drawings & co-ordination is part of the electrical works/item)				
1.1		CSS-I				
		Outdoor type package substation with facility for internal lighting, earthing, padlocks etc. connection between RMU & transformer will be by 3 Nos. 1 c x 95 sq.mm XLPE cable Busbar and connections from				

		transformer to LT Switchgear will be by bus bar connections. Cable termination kits for RMU are in our scope of supply (within enclosure).				
A		HT Panel(RMU Unit): 1 No. 33 KV, 630 A 21KA/3 Sec Indoor type, Non-extensible Manual Operated SF6 gas insulated Ring Main Unit with 2 Nos. load Switches 1 No. Vacuum Circuit breaker enclosed in a stainless steel tank with self powered microprocessor bases numerical relay and dedicated CT's for protection of Transformer				
i)		IDMT RELAY for Circuit Breakers – Self Powered (Merlin Gerin type VIP 35 or equivalent).				
ii)		The Ring Switches and Tee-Off Circuit Breaker are provided with integrated Earthing Switches with Making capacity.				
iii)		-Neon cable indicator for ring switches & Circuit breaker				
iv)		Integral earthing facility for ring switches				
v)		Shunt trip coil rated for 230 V AC				
vi)		Trip push button for T-off circuit breaker				
vii)		SF6 Gas pressure indicator				
viii)		Padlocking facility				
B		Transformer: 1 No. 1000 KVA, 33 KV/433V hermetically sealed corrugated tank type design off circuit oil filled transformer with off load tap changer, tapping range +5% to -5% in step of 2.5% each step complete with standard fittings & accessories confirming to IS 2026.				
C		LT DETAILS (AS PER SLD)				
1		SECTION 1				
		INCOMER –(DG SET -160 KVA)				
		1*320A, 4 Pole, 50 KA, MCCB (with microprocessors based release)				
a		METERING & CONTROLS				

		-BREAKER on/off/trip INDICATING LAMPS WITH CONTROL FUSES				
		-shunt trip coil				
		-Auto/Manual/Test Selector switch.				
		-Ammeter complete with CT and Selector switches as required				
		-Frequency meter				
		-Electronic energy meter of required rating complete				
		-ON/OFF phase indicating lamps with control fuses.				
b.		BATTARY CHARGER – 1 SET consisting of:				
		-Transformer & rectifier				
		-DC Voltmeter.				
		-DC Ammeter				
		-charging rate selector switch OFF/TRICKLE/BOOST.				
		- charging mode/fully charged indication				
C		PUSH BUTTON CONTROLS.				
		-Engine Start				
		Engine Stop				
		-Engine Test				
2		SECTION 2				
		INCOMER (MPSEB LINE)				
		1*1600 A, 4 Pole, 50 KA, ADB, EDO(with microprocessor based release)with U/V release and shunt release with the following:-				
B		METERING & CONTROLS				
		-BREAKER ON/OFF/TRIP indicating lamps with control fuses				
		- Shunting trip coil				
		-Ammeter complete with CT and selector switches as required				
		-Voltmeter complete with selector switches as required				

		-Frequency meter				
		-Multi function meter				
		-ON/OFF phase indicating lamps with control fuses				
3		SECTION – 4				
		BUSBARS				
		-1600 A, TPN, AI Bus Bars with heat shrinkable PVC Sleeves-as shown in SLD				
4		SECTION –N 5				
		OUTGOINGS (arrangement as per SLD)				
		-630 A, TP, 50 KA MCCB - 4 N.o				
		-400 A, TP, 50 KA MCCB – 2 N.o				
		-200 A, TP, 35 KA MCCB – 1 N.o.				
		Each outgoing MCCB will have Ampere Meter with selector switch of required rating.				
		Any item necessary for the completion of the system but not mentioned in the BOQ shall be included by the supplier.				
		Note: The panel control wiring shall be so adjusted, with help or necessary PLC so that on Mains Failure DG Set starts immediately. The stopping of DG Sets shall also be automatic after a pre-determined time of getting signal from mains supply. The incoming MCCB's shall be interlocked as per requirements and the scheme will be approved by the consultant. The incorporate fully automatic load management system where in only the required DG sets will automatically start as per load requirements. Any item necessary for the completion of the system but not mentioned in the BOQ shall be included by the supplier.				
6		CAPACITOR SECTION				
A.		SECTION – 1				

		INCOMER				
		630A, 3 Pole, MCCB with U/V release and shunt release with a minimum of 5 No and 5 NC auxiliary contracts and with following:				
a.		METERING & CONTROLS				
		-breaker ON/OFF/TRIP indicating lamps with control fuses				
		-shunt trip coil				
B		Automatic Power Factor				
		Correction System with following:				
		1 Number solid state Binary mode				
		Automatic power factor sensing and				
		Correction relay complete in all				
		Respects (12 stages)				
		The APFCR relay will be from the DUAL SOURCE MULTIFUNCTION METER FROM TRINITY-MODEL-POWER CUBE. The relay will have different set points for the mains supply & generator supply.				
		LT Power Capacitor Banks along with contractors and HRC fuses as detailed below:				
		12 number TP contactors of 63 A Capacity with MCCB – 25 KVAR				
3	NSI	Supply of following sizes of XLPE Aluminum Armored 33 KV grade HT cables conforming to relevant IS code and technical specifications.				
A		3.5 x 185 sq.mm	Meter	15	3708.90	55,633.54
Note : Any indicating lamps to be used, in all the panels, will be LED type and of same make and size.						
		Total NON DSR of Sub Head – III carried to summary sheet				7,148,663.39
		-Colour coding of all bus bars to be done as per relevant standards				

		-All bus bars to be equipped with heat shrinkable PVC Sleeves as per relevant standards				
Sub- Head –IIIO HT System (DSR Items)						
1	Part-II ,External 2.8 33CBGR400	33 KV cable laying upto 400 Sq.mm in ground: Laying of one number XLPE Power Cable of 33 KV grade of size exceeding 120 sq.mm but not exceeding 400 sq.mm direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required	Meter	15	130.00	1,950.00
2	Part-II ,External 5.14 33HXLIJ	Supplying & making of INDOOR cable end terminations with HEAT SHRIKABLE JOINTING KIT with all accessories including lugs suitable for following sizes of 3 core, XLPE AI conductor cable of 33 KV grade as required.				
a)	5.14.3	3 x 185 sq.mm	Each	2	8460.00	16,920.00
3	Part-II ,External 5.15 33HXLOJ	Supplying & making of OUTDOOR cable end terminations with HEAT SHRIKABLE JOINTING KIT with all accessories including lugs suitable for following sizes of 3 core, XLPE AI conductor cable of 33 KV grade as required.				
	5.15.3	3 x 185 sq.mm	Each	2	11620.00	23,240.00
		Total DSR of Sub-Head-III carried to summary sheet				42,110.00
	ELECTRICAL ESTIMATE – EXTERNAL –PORTAL PHASE -2, IGNTU, MP					
Sr. No	Description		Unit	Qty	Rate	Amount
	Sub- Head –IV : External Lighting (Non – DSR Items)					
1	Supply, installation, testing & Commissioning of following SOLAR lights, 11 W CFL lamp giving 900 lumens light output (TATA BP SOLAR CAT N.O MV3) complete in all respect including pole and lamps etc.		Sets	20	34854.81	697,096.13
2.	Supply, installation, testing & Commissioning of following Bollard lights,(HAVELL'S CAT No.-LHLCO1126099 or equivalent in other makes) complete in all respects including lamps 26 W CFL. TATA BP SOLAR CAT N.O MV3) complete in all respect		Sets	60	3090.04	185,402.25

	including pole and lamps etc.				
	Total of Sub-Head – IV carried to (Non DSR Items) summary sheet				882,498.38

	ELECTRICAL ESTIMATE – EXTERNAL –PORTAL PHASE -2, IGNTU, MP				
Sr. No	Description	Unit	Qty	Rate	Amount
	Sub- Head –V : DG SETS (Non – DSR Items)				
1	DG SETS – REFER DETAILED SPECIFICATIONS FOR DG SETS (General Specifications for Electrical Works, PART – VII DG SETS, 2006, CPWD Document.)				
1.1	Supply, installation, testing & Commissioning of 82.5 KVA Silent DG Set comprising of Suitable Engine coupled to 415 V 82.5KVA Stamford make alternator both mounted on common Base frame with other standard accessories i.e. Fuel tank, Batteries with leads.	Sets	1	1361520.31	1,361,520.31
1.2	Supply, installation, testing & Commissioning of 160 KVA Silent DG Set comprising of Suitable Engine coupled to 415 V 160KVA Stamford make alternator both mounted on common Base frame with other standard accessories i.e. Fuel tank, Batteries with leads.	Sets	1	821,877.42	821,877.42
1.3	Supply, installation, testing & Commissioning of AMF Panel for 82.5 KVA Silent DG Set	Sets	1	112,371.16	112,371.16
	Total of Sub-Head –V carried to summary sheet (Non DSR Items)				2,295,768.90

Sr. No	Description	Unit	Qty	Rate	Amount
	Sub- Head – VI : Preamble to BOQ for MV Panels				
Sub-	Head VI: MV Panels				
DISTRIBUTIONS PANELS					
	Design, supply, erection & commissioning of following distribution panels made of 2 mm thick CRCA Steel sheets, Floor mounted, fully enclosed, compartmentalized, dust & vermin proof with hinged & lockable doors, & complete with earting, painting as required and mounted with the following: (for detail specs refer technical specifications).				
1	External light feeder pillar	Set	1	54520.00	54520.00
A.	SECTION - 1				
	INCOMER				
	32 A, TP, MCB with following with contactor and timer:				
a.	METERING & CONTROLS				
	- ON/OFF phase indicating lamps with control fuses.				
	-Ammeter complete with CT and selector switches as required				
	-Voltmeter complete with selector switches as required				
B.	SECTION – 2				
	BUSBARS				
	-100A, TPN, Al Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
C	SECTION – 3				
	OUTGOINGS				
	-25 A, SP, MCB – 12 N.o.				
2	FEEDER PILLAR 1	Set	1.00	207660.00	207660.00
A	SECTION – 1				
	INCOMER				
	630A,TPN, 50KA MCCB with following with following:				

A	METERING & CONTROLS				
	-ON/OFF Phase indicating lamps with control fuses.				
	-Ammeter complete with CT and Selector Switches as required				
	-Voltmeter complete with selector switches as required				
	-Multifunction Meter				
B	SECTION – 2				
	BUSBARS				
	-800A, TPN,A1 Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
C	SECTION – 3				
	OUTGOINGS				
	250A,TPN, 36KA MCCB– 4 Nos.				
	63A, TPN, 25 KA MCCB – 1 Nos.				
	32 A,TPN,MCB – 1 Nos.				
3	FEEDER PILLAR 2	Set	1	204140.00	204140.00
A.	SECTION – 1				
	INCOMER				
	630A, TPN, 50KA MCCB with following with following:				
a.	Metering & Controls				
	-ON/OFF phase indicating lamps with control fuses				
	-Ammeter complete with CT and Selector Switches as required				
	-Voltmeter complete with selector switches as required				
	-Multifunction Meter				
B.	SECTION - 2				
	BUSBARS				
	-800A, TPN,A1 Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
C	SECTION – 3				
	OUTGOINGS				
	250A,TPN, 36KA MCCB– 3 Nos.				

	63A, TPN, 25 KA MCCB – 1 Nos.				
	160 A,TPN,36KA MCCB – 1 Nos.				

Sr. No	Description	Unit	Qty	Rate	Amount
4	FEEDER PILLAR - 3	set	1.00	204140.00	204140.00
A	SECTION - 1				
	INCOMER				
	630 A, TPN,50KA MCCB with following with following:				
a	METERING & CONTROLS				
	-ON/OFF phase indicating lamps with control fuses.				
	-Ammeter complete with CT and selector switches as required				
	-Voltmeter complete with selector switches as required				
	-Multifunction Meter				
B	SECTION – 2				
	BUSBARS				
	-800A, TPN, Al Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
C	SECTION - 3				
	OUTGOINGS				
	250A,TPN, 36KA MCCB– 3 Nos.				
	63A, TPN, 25 KA MCCB – 1 Nos.				
	160 A,TPN,36KA MCCB – 1 Nos.				
5	BOYS HOSTEL FEEDER PILLAR	Set	1.00	137250.00	137250.00
A	SECTION - 1				
	INCOMER				
	630 A, TPN,36KA MCCB with following with following:				
A	METERING & CONTROLS				
	-ON/OFF phase indicating lamps with control fuses.				
	-Ammeter complete with CT and selector switches as required				
	-Voltmeter complete with selector switches as required				
	-Multifunction Meter				
B	SECTION – 2				

	BUSBARS				
	-200A, TPN, AI Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
	-125A,, TPN, AI Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
	100A,, TPN, AI Bus Bars with heat shrinkable PVC Sleeves – 1 Set				

Sr. No	Description	Unit	Qty	Rate	Amount
C	SECTION – 3				
	OUTGOINGS				
	-100 A,TPN, 35KA MCCB + Contactor – 1 Nos.				
	-63A, TPN, 25 KA MCCB- 1 Nos				
	-63 A,TPN, MCB – 6 Nos				
	-40A, TPN,MCB – 7 Nos				
	-32A, TPN, MCB with contactor and timer – Nos				
	-25A, SP, MCB – 6 Nos				
6	GIRLS HOSTEL FEEDER PILLAR	Set	1.00	135875.00	135875.00
A	SECTION - 1				
	INCOMER				
	160 A, TPN,36KA MCCB with following with following:				
a	METERING & CONTROLS				
	-ON/OFF phase indicating lamps with control fuses.				
	-Ammeter complete with CT and selector switches as required				
	-Voltmeter complete with selector switches as required				
	-Multifunction Meter				
B	SECTION – 2				
	BUSBARS				
	-200A, TPN, AI Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
	-125A,, TPN, AI Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
	100A,, TPN, AI Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
C	SECTION – 3				
	OUTGOINGS				
	-100 A,TPN, 35KA MCCB+ Contactor – 1 Nos.				

	-63A, TPN, 25 KA MCCB- 1 Nos				
	-63 A,TPN, MCB – 6 Nos				
	-40A, TPN,MCB – 7 Nos				
	-32A, TPN, MCB with contactor and timer – Nos				
	-25A, SP, MCB – 6 Nos				

Sr. No	Description	Unit	Qty	Rate	Amount
7	STAFF RESIDENCES BUILDING PANEL (1-7)	set	7.00	209630.00	1467410.00
A	SECTION - 1				
	INCOMER				
	250 A, TPN,36KA MCCB with following with following:				
a	METERING & CONTROLS				
	-ON/OFF phase indicating lamps with control fuses.				
	-Ammeter complete with CT and selector switches as required				
	-Voltmeter complete with selector switches as required				
	-Multifunction Meter				
B	SECTION – 2				
	BUSBARS				
	-250A, TPN, AI Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
	100A,, TPN, AI Bus Bars with heat shrinkable PVC Sleeves – 1 Set				
C	SECTION – 3				
	OUTGOINGS				
	-250 A,TPN, 35KA MCCB+ Contactor – 1 Nos.				
	-63A, TPN, 25 KA MCCB- 1 Nos				
	-40A, TPN,MCB – 2 Nos				
	-40A, DP,MCB – 22 Nos				
	25A ,DP, MCB-1 Nos				
	-10A, SP, MCB – 22 Nos				
	1 Phase , KWH Meter – 21 Nos				
Note : Any indicating lamps to be used, in all the panels, will be LED type and of same make and size					
Note: all energy meters mentioned in this section will be electronic type complete with electromechanical counter					
Total of Sub-Head – VI carried to summary sheet (NSI Item)					**2410995.00**