



Bharat Heavy Electricals Limited
ELECTRONICS DIVISION
Mysore Road, Bangalore – 560026

Ph. 080-26998233
SC&PV – PVSS- DEPT.

NOTICE INVITING TENDERS

1 TENDER NUMBER(RFQ) : EDN/ PVSS/ NTPC/GANDHAR/22 MW/ CW/02; Dt: 30.07.2020

2 NAME OF WORK : **(A)** Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) **(B)** Electrification work for RCC control room and security room, **(C)** Inverter stations (4 Nos) and MCR yard (1 No.), **(D)** Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,**(E)** Access Bituminous Road ,**(F)** Switchyard foundation , **(G)** Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat.
(All listed works shall be Undertaken and executed)

3 ESTIMATED COST : **Rs.166.62 lakhs (Approx.) Plus applicable GST.**

4 EARNEST MONEY DEPOSIT : **Rs.3.35 Lakhs (Mandatory for MSME also)**
(a) **Bidders can submit Rs.3.35 Lakhs EMD through DD/SBI Collect (Please refer point no.: 21 of "Instructions to tenderer" for guideline for payment through SBI Collect)**
(b) **Alternatively bidders can submit Rs.2.0 Lakhs EMD through DD/SBI collect and balance Rs.1.35 Lakhs in the form of Bank Guarantee from the scheduled bank.**

5 SECURITY DEPOSIT : 50% of SD shall be submitted before start of work; Balance will be recovered from running Bills at a rate of 10%. (SD= 5% of the work order amount); 50% of SD will be released after completion of all the works and remaining 50% after 6 months from the date of completion of all the works.

6 COMPLETION TIME : **8 Months** (From the date of placement of Order/handing over of the site.)
(Please refer Page no 6 for Completion Time period Break-Up)

7 LAST DATE AND TIME FOR THE SUBMISSION OF DULY FILLED IN TENDER DOCUMENT : 21.08.2020 Before 01:00 P.M

8 PLACE OF SUBMISSION OF TENDER DOCUMENT : Shri. Thavamani Charles, Dy. Manager (SC&PV- PVSS)
5th Floor, New Engineering Building,
BHEL- Electronics Division
Mysore Road, Bangalore -560 026.

9 ADDRESS TO BE SUPERSCRIBED ON TENDER ENVELOPE : Shri. Thavamani Charles, Dy. Manager (SC&PV- PVSS)
5th Floor, New Engineering Building,
BHEL- Electronics Division
Mysore Road, Bangalore -560 026.

10 DATE AND TIME OF TECHNICAL BID OPENING : 21.08.2020 Before 01:30 P.M

NOTE: The tenderer shall return the dully filled in tender document after affixing signature on all pages and submit.

NIT Issued By

Thavamani Charles,
Dy. Manager, BHEL-EDN

CONTACTOR (SIGN & SEAL)



Bharat Heavy Electricals Ltd
Electronics Division
Mysore Road, Bangalore – 560026

Tender Document for

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat.

TENDER NUMBER RFQ: EDN/ PVSS/ NTPC/ GANDHAR/ SPV/ 20 MW/ CW/02; Dt: 30.07.2020

TECHNICAL BID DATE OF OPENING: 21-08-2020 (Price bid opening date intimation will be given separately)

Part – I	Technical cum Commercial Bid	.....	39 Pages
	Unpriced Price Bid	.....	23 Pages
	Technical and General Specification	.....	19 Pages
	BHEL General Conditions of Contract 2019	.....	33 Pages
	Tentative Tender Drawing	.....	07 Pages
	Tentative Field Quality Plan	.....	05 Pages
	Bank Guarantee format for EMD	.....	02 Pages
Part – II	Price Bid	.....	23 Pages

Note:

1. Part – I: To be submitted in a separate sealed cover.
2. Part – II: To be submitted in a separate sealed cover.
3. Earnest Money Deposit of Rupees 3.35 Lakhs shall be submitted as per point No. 4 of page No. 1 of this tender document.
4. Tenders will be liable for rejection if the above mentioned EMD is not submitted along with the tender.
5. Part-I, Part-II, Tender EMD sealed covers should be put in outer envelope and super scribbling the **Name of work and Name & Address of the Tenderer**.
6. Firms banned by BHEL are not eligible to participate in the tender. The tender envelope submitted by such a firms will not be opened for evaluation and no communication in this regard will be entertained.
7. In view of present pandemic situation, it is advised to all bidders to mandatorily ensure all precautionary measures as per guidelines issued by State/Central government/District administration to prevent spread of COVID-19 like usage of Personal protective Equipment's and other norms like wearing masks, maintaining social distance and other instructions issued from time to time.

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Dy. Manager, BHEL-EDN

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BHARAT HEAVY ELECTRICALS LTD, ELECTRONICS DIVISION, BANGALORE-26

TENDER NUMBER RFQ: EDN/ PVSS/ NTPC/ GANDHAR/ SPV/ 20 MW/ CW/02; Dt.: 30.07.2020

PART-I TECHNICAL-CUM-COMMERCIAL BID

(To be furnished by the Bidders)

01. NAME OF THE WORK : **(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar, Gujarat.**
(All listed works shall be Undertaken and executed)

02. APPROXIMATE ESTT.COST RS. : Rs.166.62 Lakhs (APPROX.) plus applicable GST.

03. COMPLETION PERIOD : **8 Months** (From the date of placement of Order/handing over of site.)

04. NAME OF THE CONTRACTOR :
(WITH CONTACT PERSON)

05. ADDRESS
(A) OFFICE :
E-mail :
TEL. PH. NO. :

(B)RESIDENCE :
TEL.PH NO :

06. PAN NO :
07. GST NO :
08. STAFF STRENGTH :
09. PLANT/EQUIPMENTS : List enclosed/not enclosed
10. a) SCOPE OF WORK : UNDERSTOOD/ NOT UNDERSTOOD
(As per schedule of items)
b) Accept to execute in total : YES/ NO
c) Bar chart to be submitted : YES/ NO
Individually for each work for L1 Scope
d) In order to complete the project
in the specified months schedule, vendor
to deploy separate Five gangs/teams (or) more

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as per site requirement for each individual activities along with tools and machineries, Undertaking should be submitted along with offer : YES/ NO

11. a) EMD PARTICULARS (DEMAND DRAFT/ SBI COLLECT REF NO. / BG DETAIL) :
b) Electronic Funds Transfer (EFT) form enclosed : Please fill up the form in ANNEXURE-II

12. Penalty as per BHEL General conditions of contract 2019 clause No. 2.7.9 : Accepted / Not accepted

13. Constitution of Firm : Individual / Sole Proprietorship Concern / Partnership Firm / Public Ltd. Company/ Private Ltd. Company.

14. BHEL reserves right to conduct reverse auction : Accepted / Not accepted
BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among all the techno-commercially qualified bidders. Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking."

15. Accept to pay statutory payments like ESI, PF, BOCW, etc., as per terms and conditions of BHEL and Govt. guideline's : Accepted / Not accepted

16. Accept for "stages of work completion", As per page no. 6 of this NIT : Accepted / Not accepted

17. BHEL Payment terms acceptance (Cl. no. 21, 22.1 & 22.2 of "Special Conditions of Contract") : Accepted / Not accepted

18. The bidder should encourage to use local labor that has the necessary skills as per the requirement of work. : Accepted / Not accepted

Note:

- 1. Bidders are advised to quote their best prices (% above/below the total estimate +/- (or) at par) as no further price bids will be accepted in case BHEL decides to open price bids instead of reverse auction.**
- 2. In view of the necessity to complete the works as per the schedule and for stringent quality control it is required that works awarded to contractor shall not be sublet by the contractor to any other agency in partial or full, without prior approval of BHEL. All works shall be carried out under the supervision of contractor by placing their regular employees at site**

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PRE-QUALIFICATION CRITERIA

1 Experience of having successfully completed RCC building works (such as Industrial and commercial) and other infrastructure works during last 7 years from the date of tender notice.

a) Three similar completed RCC building works and other infrastructure works each costing not less than an amount equal to 40% (i.e., Rs.66.65 lakhs).

OR

b) Two similar completed RCC building works each costing not less than an amount equal to 50% (i.e., Rs.83.35 lakhs).

OR

c) One similar completed RCC building works each costing not less than an amount equal to 80% (i.e., Rs.133.30 lakhs).

2. Average annual financial turn over during the last 3 years, ending 31st March of the previous financial year, should be 30% (i.e., Rs.50 lakhs).

Note: Offers of the Tenderers not meeting the above requirements are liable to be rejected.

Documents required to be submitted

1. Registration Certificate with ESI and PF Authority/Declaration.
2. Income Tax Returns for last Three years
3. Balance Sheet and Profit & Loss Account for the last 03 years by auditor.
4. Availability of Technical personnel in letter head.
5. Registration with BHEL/CPWD/other Govt. organization/PSU if any.
6. Declaration for full filling the BOCW requirements.
7. List of equipment to be mobilized at site.
8. GST Registration details or Declaration.
9. Declaration of MSE/Qualify for PPP MII order 2017

All the supporting documents to be signed and sealed by the bidder (BHEL have the rights to verify the original documents if required)

STAGES OF WORK COMPLETION

WORK COMPLETION BREAKUP								
S.No.	DESCRIPTION OF WORK	DURATION OF WORK (In Months)						
		1st	2nd	3rd	4th	5th	6th	7th
A	Construction of RCC Control room building (1 no.), RCC Security room building (1 no.)							
B	Electrification work for RCC control room and security room							
C	Inverter stations (4 Nos) and MCR yard (1 No.),							
D	Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying							
E	Access Bituminous Road							
F	Switchyard foundation							
G	Parking shed and other associated works							

1. Zero date will start from the date of placement of Order/handing over of the site/ Drawing received to successful bidder.
2. Liquidated damages clause applicable for Individual work as per clause No. 2.7.9 of BHEL General Conditions of Contract 2019.

INFORMATION TO THE TENDERER:

- (i) Successful Bidder should establish their Site office at Construction site, including common facilities such as toilet, water, electricity etc. in consultation with BHEL. Contractor has to arrange water and power as required for completing the job in the stipulated time frame at their own cost.
- (ii) Successful bidder should take utmost care of their manpower deployed, considering the current outbreak due to COVID-19, Successful bidder should take precautionary measures as per guidelines issued by State/Central government/District administration to prevent spread of COVID-19.
- (iii) Successful bidder should ensure usage of personal protective Equipment and other norms like wearing masks, maintaining social distance and other instructions issued from time to time during execution of work /mobilization of machinery and man power.
- (iv) The bidders should furnish "Site Inspection Certificate" in Annexure-III enclosed herewith.
- (v) Bidders should study the prevailing Market trend of Construction materials/laborers/other relevant requirement before quote and submit the competitive price.
- (vi) The bidder should encourage to use local labor that has the necessary skills as per the requirement of work.
- (vii) Before engaging the labour in to work, Contractor should get the NOC from labours' native police station as well as NOC from local police station (If applicable).
- (viii) The bidders should carry out preliminary survey at proposed construction site before submission of offer to ensure that the rate quoted for the relevant schedule of items are correct.
- (ix) Contractor to note BHEL reserves the right to get any part of the work done through other agency or deploy BHEL's own/hired/otherwise arranged resources, at the risk and cost of the contractor after due notice of a period of two weeks by BHEL, in the event of:-
 - a) Contractors continued poor progress
 - b) Withdrawal from or abandonment of the work before completion of the work.
 - c) Contractor's inability to progress the work for completion as stipulated in the contract
 - d) Poor quality of work
 - e) Corrupt act of Contractor
 - f) Insolvency of the contractor
 - g) Persistent disregard to the instructions of BHEL
 - h) Assignment, transfer, sub-letting of contract without BHEL's written permission
 - i) Non fulfillment of any contractual obligations
 - j) In the opinion of BHEL, the contractor is overloaded and is not in a position to execute job as per required schedule.
- (x) The liquidated damages/penalties arising out of Risk and Cost as explained under Sl.no (vii). BHEL shall recover the amount from any money due from Contractor, or from any money due to the contractor including security deposit, or by forfeiting any T & P or material of the contractor under this contract or any other contract of BHEL or by any other means or any combination thereof.



(ix) Documents to be submitted on award of work (as applicable):

- a) Security deposit in the form of Cash/DD/ NSC's / Kisan Vikas Patra / FDR / Bank Guarantee in favour of BHEL
- (b) Electronic Fund Transfer Form duly signed & sealed by banker along with cancelled cheque copy
- (c) Labour license of the workmen engaged valid for contract period (If applicable)
- (d) Workmen Compensation Insurance Policy for the workmen engaged valid for contract period
- (e) Deduction of statutory taxes (as applicable) at source would be enforced from the running bills at the rates prescribed unless exemption certificate is produced from the concerned authorities.

The following documents are to be submitted along with the Running Account Bills for process of payment

- a) Tax Invoice with details of GST number of BHEL and contractor.
- b) Measurement books duly filled and signed by officials of BHEL and contractor
- c) Provident PF Remittance challan for the bill duration.
- d) ESI Remittance challan for the bill duration.
- e) Invoice submitted along with running bills to indicate the GST amount charged and bear GST NUMBER etc. as per prevailing taxes.

Bill submitted subsequently to be accompanied with a declaration that GST liability on the earlier bill has been discharged.

- i) by paying money to the Government (along with Tax paid Challan Copy)
- ii) by utilization of Input GST Credit

- f) BOCW Registration and payment proof.
- g) Field quality assurance documents (as applicable) as per instruction of Engineer In-charge.
- h) List of supplier/supplier's (material and manpower).
- i) After completion of work, bidders should mandatorily furnish NOC from all declared suppliers along with the running/Final Bill.

Mobilization at site:

- 1) Requisite Material (all construction materials like cement, sand, coarse aggregate, reinforcement steel, etc.,), men (mason, carpenter, bar binder, fabricator, etc.,) and machinery (DTH, Concrete mixer machine/RMC/AJAX with printing facility, Power chain saw, JCB/excavator/dozer, grader, tipper, etc., Total station & other equipment required for building works and levelling, grading works, and other associated works as listed in BOQ) should be arranged in order to complete the project within stipulated time period.
- 2) The contractor shall carry the work as per the approved Field Quality Plan issued by BHEL (Field quality plan enclosed with this tender for reference)
- 3) Calibration of equipment's should be done by NABL accredited laboratories.
- 4) Contractor shall submit the design mix report (from NABL/Govt. approved labs) and shall carry the work as per the approved design mix report, approved by BHEL/NTPC.
- 5) Contractor shall conduct the pile load test (Initial and routine test) (OR) any test (as applicable) and shall submit the report (from NABL/Govt. approved labs) as approved by BHEL/NTPC.

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Dy. Manager, BHEL-EDN

CONTACTOR (SIGN & SEAL)



Bharat Heavy Electricals Limited
ELECTRONICS DIVISION
mysore road- bangalore-26
INSTRUCTIONS TO TENDERER

1. Sealed Tender for the above noted work is hereby invited from Contractors experienced in similar civil works like RCC building works (such as Industrial, commercial and Residential).
2. Scope of work for, **(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at location as specified under Sl. No. 3 “Project scope, detail and location” as per Tender/approved construction drawing, works as per instruction of Engineer in charge, terms and condition of contract. However Depending on site conditions minor modification in works may be necessary.**
3. Project Scope, detail and Location:

Site Detail	Project detail	Location
Project Site	20MWp (AC) SPV Power plant for NTPC, Gandhar	Gandhar, Dist: Bharuch, State: Gujarat

4. **Tenders should be addressed to: Shri. Thavamani Charles, Dy. Manager (SC&PV- PVSS), NEB 5th Floor, Electronics Division, Bharat Heavy Electricals Limited, Mysore road, Bangalore – 560 026. In three separate sealed cover for “Technical cum Commercial Bid”, Price Bid and DD for Tender document Cost (if applicable) & EMD duly super scribed and put in an outer envelope, super scribing the Name of work, Tender no. and Name and address of the Tenderer.**
5. The local address of the Contractors, the name of the person to whom all the Correspondence are to be addressed should be indicated, with telephone number (both office and residence).
6. All entries in tender documents should be in one ink (preferably blue ink). Erasing and overwriting is not permitted. All corrections should be duly signed by tenderer concerned.
7. Tenderers shall fill in all the required particular in the blank space provided for this purpose in the tender documents and also sign in each and every page of the tender document including the drawings attached there to before submitting tender.

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8. Unit rate/percentage above or below estimate should be quoted in figures as well as in words in Indian Currency only i.e. Rupees and Paisa with reference to each item and for the items shown in the attached schedule. These rates shall be for the finished work at site. The rate shall include all taxes and duties payable on account of Octroi, Sales Tax, tax on work contract etc., and also expenses towards PF and ESI contributions (see clauses 8, 40 and Enclosure 'C') but excluding GST.
9. In case the rate quoted in figures differs from those quoted in words, the lower of the rates quoted will be taken as the tendered rate and shall be binding on the tenderer.
10. The rate to be quoted by the tenderer shall be firm and shall cover and include all statutory levies such as "Octroi, sales tax, excise duty etc., arising from Act passed by Parliament or State Legislature and rules framed there under. The rates shall further be deemed to include statutory levies arising from such Acts, Central or State, which may come into force, subsequent to submission of tenders.
11. (a) The rate quoted in the tender shall remain valid for a period of 'THREE MONTHS' from the date of opening tender.
(b) Tenderer shall not increase quoted rates, once the tenderer has submitted offers/quotation/price and during execution of contract in case tender is accepted.
(c) Successful bidder should execute the work strictly in accordance with Tender schedule quoted rates as accepted by BHEL.
(d) **PRICE VARIATION clause not applicable.**
12. The rates quoted should be inclusive of all taxes arising on the transaction. If BHEL is required to discharge the liability of any taxes on the transaction like TDS(IT), TDS(WCT), TDS(GST) (as applicable) under reverse charge mechanism or any other similar taxes, which is or becomes payable by BHEL, the same shall be deducted from the bills of the contractor. **The rate/Percentage quoted by bidder shall be including all taxes but excluding GST which shall be shown separately in price bid.**
13. Quantities shown in the schedule are only approximate and are liable to variation without entitling the Contractors to any compensation.

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CONTACTOR (SIGN & SEAL)



14. Before tendering, the tenderer are advised to inspect the site of work and its environments and be well acquainted with the actual working and other prevailing conditions, position of material and labour. They should be well versed with BHEL General Conditions of Contract instruction to the tenderers, drawing and specification and all other documents which form part of the agreement to be entered into subsequent to award of work. The tenderer should be specially note that it is tenderers responsibility to provide any items which is not specifically mentioned in the specifications and drawing, but which is necessary to complete the work.
15. Details and quantities of each item of work shown in the bill of quantities attached here to only approximate. They are given as a guide for the purpose of tendering only and are liable for variation and alteration at the discretion of the competent authority. The work under each item as executed shall be measured and price at the corresponding rates to be quoted by the Contractor in the bill of quantities attached hereto.
16. Should a tenderer find discrepancies or omission in the drawing attached to the tender documents or should be in doubt as to their meaning he should at once address to the authority inviting the tender for clarifications. Every endeavor is made to avoid any error which can materially affect the basis of the tender but successful tenderer shall take upon himself to provide for the risk of any error which may be subsequently discovered and shall make no subsequent claim on account thereof.
17. In the event of the tender being submitted by a firm the tender must be signed separately and legibly by each partner or member of the firm or in their absence, by the person holding the power of Attorney on behalf of firm concerned. In the latter case, a copy of the power of Attorney duly attested by a Gazette Officer must accompany the tender.
18. If in any case, the date of Tender Opening falls on holiday, the Tender will be opened on the next working day.
19. Every tender must be accompanied by Earnest Money Deposit. This earnest money will be refunded to the unsuccessful tenderer after finalization of the award of work. In the case of successful tenderer, the earnest money will be retained as a part of Security Deposit for satisfactory completion of the work in accordance with Clause-16 of BHEL General Conditions of the Contract. Tenders without Earnest Money Deposit receipt are liable to reject. No interest will be paid on the earnest money deposit.
20. **The Earnest money deposit may be furnished**
 - a) **Demand Draft in favour of BHEL EDN, Bangalore – 560026.**
 - b) **The Earnest money deposit may be furnished through online from SBI Collect.**
 - c) **Bank Guarantee as per Sl. No. 4 (b), page No. 1.**



Guidelines for payment of EMD Fee

Step-1: Please enter the following link in your internet address browser or click on the following link.
<https://www.onlinesbi.com/sbicollect/icollecthome.htm>

Please click on "proceed" after Clicking "Check Box" to proceed for payment after accepting terms and conditions

Step-2: Now the SBI's SB-Collect site gets opened. Please select State of Corporation as "Karnataka" and type of Corporation as "PSU-PUBLIC SECTOR UNDERTAKING" and then click on "Go" appearing on the screen.

Step-3: Now select "Bharat Heavy Electricals LTD" from the dropdown table appearing against "Industry Name" and click Submit

Step-4: Now select "Others" from the dropdown table appearing against "Category" and click Submit

Step-5: The below screen (similar) will appear. Please select sub category "EMD" and fill up other details and transfer money.

State Bank Collect / State Bank Collect

State Bank Collect

 BHARAT HEAVY ELECTRICALS LTD
BHEL HOUSE, SIRI FORT, NEW DELHI-110003

Provide details of payment

Select Payment Category *

SUB CATEGORY *

NAME *

VENDOR CODE

AMOUNT *

Remarks

Please enter your Name, Date of Birth (For Personal Banking) / Incorporation (For Corporate Banking) & Mobile Number. This is required to reprint your e-receipt / remittance(PAP) form, if the need arises.

Name *

Date of Birth / Incorporation* 

Mobile Number *

Enter the text as shown in the image *

21. For reimbursement of Earnest Money Deposit, the tenderer should fill the enclosed EFT form, obtain the Banker's signature and also enclose a photocopy of cancelled cheque leaf.
22. EMD may be submitted in Bank guarantee as per Sl. No. 4 (b), page No. 1, in BHEL format in Non-judicial stamp paper amounting Rs.200 (or) applicable rate at bidder's state, whichever is higher. **Bank guarantee from any Co-operative banks are not acceptable in any circumstances.**
23. Unless the bidder whose tender is accepted signs contract agreement (If applicable) within fifteen days (15 days) of the date of the order directing to do so, the amount of Earnest Money already deposited by bidder will be forfeited and acceptance of the tender withdrawn as per discretion of BHEL.

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Thavamani Charles,
Dy. Manager, BHEL-EDN

CONTACTOR (SIGN & SEAL)

24. If after opening of tenders a tenderer revokes the tender or increase of earlier quoted rates or after acceptance of his tender does not commence the work in accordance with the instruction of Engineer-in-charge, the Earnest Money Deposited by bidder will be forfeited and acceptance of bidder's tender withdrawn.
If only a part of work included in the tender had been awarded to the tenderer, the amount of Earnest Money to be retained will be based on value of the contract so awarded.
25. The BHARAT HEAVY ELECTRICALS LIMITED reserve the right to reject any or all the tenders received or accept any tender or part thereof without assigning reason thereof. In the case of acceptance of a part of tender, the time for completion may also be reduced to the extent considered necessary by the accepting authority.
26. Conditional and Unsigned tenders, tenders which are incomplete or otherwise considered defective, tenders which are not in accordance with the tender conditions laid down by the accepting officer and tenders not submitted in the prescribed forms are liable to be rejected.
27. Tenderer shall submit Solvency Certificate for the value specified from a Bank of standing regarding the tenderer's financial position (as applicable).
28. The tenderers should enclose relevant documents regarding constitution of firm i.e. Individual / Sole Proprietorship Concern / Partnership Firm / Public Limited Company / Private Limited.
29. The tenders should be enclosed with a list of contracts already held by the tenderer at the time of submitting the tender and giving the following particulars:
 - a) Name of the work, value and address.
 - b) The balance work remaining to be done on the same.
30. a) The filled in tender sealed cover shall be handed over/couriered/speed post to at office of "**Shri. THAVAMANI CHARLES, Dy. Manager (SC&PV- PVSS), NEB 5th Floor, Electronics Division, Bharat Heavy Electricals Limited, Mysore road, Bangalore – 560 026**" before the time fixed for submission of tender.
b) Tenders received after the due date & time of opening of tenders will be rejected.
31. The Contractors responsibility under this contract shall commence from date of receipt of the order or acceptance of tender.
32. Tenders submitted by speed post or courier service shall be posted with due consideration of any delay in postal delivery. Tenders received after the due date of opening tenders are liable to be rejected.



33. If proprietor or partner of a firm expires after the submission of tender or after the acceptance of tender, BHEL reserves the right to cancel the contract if the character of the firm undergoes a substantial change.
34. THE BHARAT HEAVY ELECTRICALS LIMITED will not be bound by any power of Attorney granted by the tenderer or changes in the composition of firm made subsequent to signing of the contract. They may however recognize such power of Attorney and changes after obtaining proper legal advice.
35. If the tenderer deliberately gives wrong information on tender regarding past unsatisfactory performance with BHEL sister units, BHEL reserves the right to reject such tender at any stage including contract execution period.
36. Words imparting the singular number shall also be deemed to include the plural number and vice-versa where the context so require.
37. The General and Special Conditions are complementary to each other and where they are in conflict, the special condition shall prevail.
38. The expenses for completing the stamping agreement shall be paid by the contractor.
39. Unless or otherwise stated above tendered work includes men, material, machine and commissioning of equipment as agreed to in the contract.
40. After completing of the job, the contractor has to furnish actual drawings of work done in consultation with Engineer-in-charge.
41. Any covering letter and comments of the tenderer should be submitted along with the offer.
42. Cement and steel for carrying out Civil Works will have to be procured by the Contractor. Materials shall be accompanied with Test certificates and connected dispatch documents for proof of source from approved manufacturer's works or stockyard. The Contractor shall provide all the materials needed for trial run, testing including chemicals, consumables etc. In quoting their rates, the Contractors are advised to take into account the cost of the above materials. All the construction materials should be approved by BHEL before commencement of work.
43. Contractor are required to follow Field Quality Plan (FQP) for Civil construction as approved by BHEL/customer in respect of Tests to be carried out and reports and documents to be furnished.
44. Should a tenderer or a contractor has a relative or in the case of firm or company, any of its shareholders relative is employed in Bharat Heavy Electricals Limited, the authority inviting tenders shall be informed of this fact at the time of submission of the tender, failing which tender may be disqualified or if such fact subsequently comes to light.
45. These 'INSTRUCTIONS TO TENDERER' & GENERAL CONDITIONS OF CONTRACT OF BHEL' shall be deemed to form an integral part of the Contract agreement for the work to be entered into. The

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Contractor has to scrutinize the same, and when submitting his tender, indicate his acceptance of both.

In cases of variation between the two in any matter, the conditions in the 'THE INSTRUCTIONS TO TENDERER' shall prevail. (Extracts of important clauses of BHEL GCC are enclosed).

46. All operations to be carried out by the Contractor during the execution of the contract such as drilling, welding etc., shall be done with proper equipment to be brought by the tenderer. Contractor shall make his own power and water supply.
47. The Contractor shall comply with the provision of Employees Provident Fund's and miscellaneous Provisions Act 1952 and rules, regulations and other orders issued there under. He as an employer shall be liable to pay employer's contribution/deductions towards PF under the PF Act in respect of all labour employed by him for the execution of the contract in accordance with the provisions of the Employees' Provident Funds and Miscellaneous Provisions Act, 1952 as amended from time to time. For this purpose he shall indicate the code number obtained from the Regional Provident Fund Commissioner or he should obtain a code number if he has not and produce the Photostat copy of the challan receipt of monthly remittance of the contribution made by him to the Commissioner. He shall also furnish such returns such returns as are due, under the Act, to be sent to the appropriate authorities through the Principal Employer".
48. The Contractor should get himself registered with the E.S.I Authorities as an independent Employer, obtain a separate code number and remit the dues in respect of the Labour employed by him for the work and produce the challan/Receipts of remittance of the ESI contributions due under the E.S.I Act to the Company authorities. He shall also furnish such returns, as are due, under the Act, to be sent to the appropriate authorities' through the Principal Employer. The contractor can remit their ESI & PF through a sub-agent who processes the ESI & PF code and agrees to enter an MOU with the contractor.
45. If any action is brought in by P.F. Commissioner/ESI authorities on BHEL for the work done by the Contractor for his labourers regarding PF/ESI amount due, short remittances, non-remittances etc., the Contractor shall defend the case on behalf of BHEL and / or reimburse BHEL the expenses so incurred.
46. The Contractor shall apply and obtain license under Contract labour (R&A) Act 1970 and comply the relevant provisions of this Act in respect of the labour employed by him for executing this contract. The contractor shall furnish necessary returns to the authority through the Principal Employer.
47. Contractor shall insure all his labourers and material. Any claim by his Employees for damages shall be settled by the Contractor even if action is against BHEL or to reimburse the legal expenses incurred by BHEL.

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48. Any action brought in by anybody on BHEL regarding patent, right etc., used by Contractor in execution of work shall be defended by the Contractor and / or reimburse BHEL the cost of the same.
49. Contractor shall produce necessary records, documents; explanation whenever he is called upon to do by any Government Agencies.
50. Contractor should obtain "Workmen Compensation Policy" for their Employees.
51. LEAD, LIFT, DEWATERING ETC.,
 - a) Unless otherwise specified in the tender schedule, the rates for all items will be deemed to include all leads, lifts and descents involved in the work.
 - b) No separate payment will be made for dewatering (including seepage, surface drainage and monsoon water) desludging and allied operations at any stage of the work, and the cost of such operations will be deemed to be included in the contract rates.
 - c) No separate payment will be made for curing including pumping of curing water where ever necessary.
52. EXTRA ITEMS

No extra items of work shall be carried out by the contractor other than those authorized to do so in writing by the Engineer-in-charge. For any such items of work executed as per instructions of Engineer-in-charge, the rates will be fixed on the basis indicated under clause 50 of BHEL GCC/as per terms and conditions of BHEL. The schedule of rates to be followed in this case will be CPWD schedule of rates.



BHARAT HEAVY ELECTRICALS LIMITED

(ELECTRONICS DIVISION)

mysore road- bangalore-26

GENERAL CONDITIONS OF CONTRACT/TECHNICAL SPECIFIC ATION

It is hereby agreed by me/us that the BHEL General Conditions of Contract including subsequent amendments/ additions/deletions to clauses if any, and conditions pertaining the settlement of disputes by Arbitration form an integral part of the tender documents and that the tender submitted by me/ us is subject to the aforesaid BHEL General Conditions of Contract/ Technical Specification for scope of tender works which has been read and accepted by me/us.

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SAFETY CODE

RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF SAFETY OF MEN, EQUIPMENT, MATERIAL AND ENVIRONMENT

1. Before commencing the work, contractor shall submit a "SAFETY PLAN" to the authorized BHEL Official. The 'SAFETY PLAN' shall indicate in detail the measure that would be taken by the contractor to ensure safety of men, equipment, material and environment during execution of the work. The plan shall take care to satisfy all requirements specified hereunder. The contractor shall submit Safety Plan along with his offer. During negotiations before placing of work order and during execution of the contract BHEL shall have right to review and suggest modification in the Safety Plan. Contractor shall abide by BHEL decision in this respect.
2. The contractor shall take all necessary safety precautions and arrange for appropriate appliances as per direction of BHEL or its authorized officials to prevent loss of human lives, injuries to personnel engaged, and damage to property and environment.
3. The contractor shall provide to its work force and ensure the use of the following personal protective equipment as found necessary and as directed by the authorized BHEL Officer:-Safety Helmets conforming to IS-2925: 1984.
 - (i) Safety Belts conforming to IS-3521: 1983.
 - (ii) Safety Shoes conforming to IS-1989: 1978.
 - (iii) Eye and Face protection devices conforming to IS-8520: 1977 and IS-8940: 1978.
 - (iv) Hand and body protection devices conforming to:
IS-2573: 1975
IS-6994: 1973
IS-8807: 1978
IS-8519: 1977

All tools, tackles, lifting appliances, material handling equipment scaffolds, cradles, safety nets, ladders, equipment's etc. used by the contractor shall be of safe design and construction. These shall be tested and certificate of fitness obtained before putting them to use and from time to time as instructed by authorized BHEL Official who shall have the right to ban the use of any item.

All electrical equipment's, connections and wiring for constructions power, its distribution and use shall conform to the requirement of the Indian Electricity Act and Rules. Only electricians licensed by the appropriate statutory authority shall be employed by the contractor to carry out all types of electrical works.



All electrical appliances including portable electric tools used by the contractor shall have safe plugging system to source of power and be appropriately earthed. The contractor shall not use any hand lamp energized by electric power with supply voltage of more than 24 volts. For work in confined space lighting shall be arranged with power sources of not more than 24 volts.

The Contractor shall adopt all fire safety measures as laid down in the "Code for fire Safety at Construction Sites" issued by the Safety Department of the Construction Management (HQ) of BHEL and as per directions of the authorized BHEL Official. A copy of the above referred "Code of Fire Safety at the Construction Sites" shall be made available by BHEL to the contractor for reference, on demand by the contractor, during tendering stage itself.

Where it becomes necessary to provide and/or store petroleum products, explosives, chemicals and liquid or gaseous fuel or any other substance that may cause fire or explosion, the contractor shall be responsible for carrying out such provisions and/or storage in accordance with the rules and regulations laid down in the relevant government acts, such as Petroleum Act, Explosives Act, Petroleum and Carbides of Calcium Manual of the Chief Controller of Explosives, Govt. of India. etc., prior approval to the authorized BHEL Official at the site shall also be taken by the contractor in all such matters.

The contractor shall arrange at his cost (wherever not specified) appropriate illumination at all work spots for safe working when natural daylight may not be adequate for clear visibility.

The contractor shall be held responsible for any violation of statutory regulations local, state or central and BHEL instructions that may endanger safety of men, equipment, material and environment in his scope of work or another contractor or agencies. Cost of damages if any, to life and property arising out of such violation of statutory regulations and BHEL instructions shall be borne by the contractor.

In case of a fatal or disabling injury accident to any person at construction sites due to the lapses by the contractor, the victim and/or his/her dependents shall be compensated by the contractor as per statutory requirements. However, if considered necessary, BHEL shall have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating the victim and/or his/her dependents. Before imposing any such penalty, appropriate enquiry shall be held by BHEL giving opportunity to the contractor to present his case.

In case of any damage to property by the contractor, BHEL shall have the right to recover cost of such damages from payments from payments due to the contractor after holding an appropriate enquiry.

In case of any delay in the completion of a job due to mishaps attributable to lapses by the contractor; BHEL shall have to recover cost of such delay from payments due to the contractor, after notifying suitably and giving him opportunity to present his case.

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If the contractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given a reasonable opportunity to do so; and/or if the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions regarding safety issued by the authorized BHEL Official, BHEL shall have the right to take corrective steps at the risk and cost of the contractor after giving a notice of not less than seven days indicating the steps that would be taken by BHEL.

The contractor shall submit report of all accidents, fires and property damage, dangerous occurrence to the authorized BHEL Official immediately after such occurrence, but in any case not later than twelve hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. In addition, the contractor to the authorized BHEL Official shall also submit periodic reports on safety from time to time as prescribed.

Before commencing the work, the contractor shall appoint/nominate a responsible officer to supervise implementation of all safety measures and liaison with his counterpart of BHEL.

If safety record of the contractor in execution of the awarded job is to the satisfaction of Safety Department of BHEL, issue of an appropriate certificate to recognize the safety performance of the contractor may be considered by BHEL after completion the job



SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

The special conditions of contract and other contract documents are complimentary to each other and shall be read in conjunction with each other. In case of any conflict of meanings between the special conditions of contract and the BHEL General Conditions of Contract the provisions of the special conditions of contract shall override the corresponding provisions of the BHEL General Conditions of Contract.

2. SCOPE OF WORK

The scope of work includes for the full, final and entire completion **(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying , (E) Access Bituminous Road , (F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar, Gujarat** as detailed in specifications and drawings, which forms part of this Contract. The scope of work also includes cleaning/removing all debris in line with bill of quantity as directed by Engineer In-charge. The scope of work under this contract shall cover supply of all materials, labour, tools, and plants etc., unless otherwise specified in the specifications, descriptions of items or in foregoing clauses.

3. SITE CONDITIONS

a) Before tendering the Contractor shall get themselves acquainted with site conditions such as the nature of soil likely to be encountered during the course of the work etc,. The rates quoted by the contractor shall be deemed to have been quoted after getting acquainted with the prevailing site conditions. Initial jungle clearance, stripping of top soil etc., shall also be included in the quoted rates. No claims on the pretext of ignorance of site conditions shall be entertained.

b) The site of work is as mentioned in the Tender document.

4. SITE FACILITIES

A. LAND

The Employer will allot land as available free of cost to the contractor for his office stores. He must maintain the areas allotted to him in a neat and clean conditions as required by the Employer. The contractor shall provide adequate storage and office facilities with approval from the Engineer. The rate quoted by the contractor shall be deemed to include for these and no separate payment will be made towards these. On completion of work, the site shall be cleaned by the contractor of all materials, temporary debris, rubbish plants and equipment's, belonging to the contractor at no extra cost. The



site and surroundings shall be handed over in a neat and clean condition. In case of any failure by the contractor, the employer will get inside cleared at risk and cost of the Contractor.

B. POWER AND WATER SUPPLY

Facilities for drawing Power and water required at site for execution of the works shall be arranged by the contractor at his expense and risk. The necessary source for power & water supply has to be organized by vendor. Necessary distribution box, extension board points duly earthed, and with armoured safe power cables to be laid across the field provided point shall be in the scope of the tenderer. Further, laying of water intake and distribution pipes across the Site to various points of work from Electricity source provided water source point shall be in the scope of the tenderer. If required D.G generation sets shall be provided for Power arrangement by the contractor at his own cost. The tenderer shall make provision for temporary storage of water at suitable locations with pump if required to reach the water supply to work areas. The contractor will have to make his own arrangements for the same, without claiming any extra charge for the power and water drawal and distribution equipment.

5. MACHINERY

The Contractor shall at his own expense, supply all tools, plant and equipment (hereinafter referred to as T & P) required for execution of contract, as specified in the tender documents. whole of the works shall be executed in perfect conformity with the specifications and drawings. If contractor perform any works in a manner contrary to the specifications and drawings and without reference to the Engineer-in-charge, he shall bear all the costs arising or ensuring there from.

- a) All technical documents regarding the construction of works are given in the metric system and work should be carried out according to metric system.
- b) The work shall be carried out as per detailed drawings supplied by the employer. The working drawings shall be emailed progressively to the contractor free of cost. The contractor shall keep one set of drawings (duly protected from dust and wear and tear) at his own expenses always available at site for reference of Engineer-in-charge and other representatives.
- d) The works shall be carried out as per detailed specifications enclosed with the tender. For items for which there is no mention in the drawings, detailed specification relevant IS specification (latest edition) shall be followed.
- e) The contractor shall submit to the Employer for their approval complete drawings, of all temporary works and staging which he may require for carrying out the works shown in the drawings.

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He shall at the same time if so required by the Employer submit his calculations relating to strength and anticipated deflection in respect of any aforesaid temporary works. He shall also submit for the approval of Employer drawings showing the methods he proposes to adopt for the erection of the various parts of the temporary works. Any modification to the drawings that may be required by the Employer shall be made by the contractor at his own cost. However, notwithstanding the approval of modification required for temporary works, the contractor shall be fully responsible for their efficiency, security and maintenance and for all obligations and risks in regard to such works, specified or implied in this contract and be shall reinstate the same at his own cost, should any mishap or accident occur causing damage or injury there from, subject however, to such clauses of the General conditions as may be applicable in such cases.

6. BENCH MARKS AND REFERENCE POINTS

The contractor shall construct and maintain proper benchmarks and reference points of the intersection of all main walls, no separate payment shall be made for this and rates quoted deemed to include this cost. Surveying where ever required is in contractor scope.

7. SAFETY PRECAUTIONS

The contractor shall at times observe the safety code and make necessary action as required in the tender. In default thereof, the employer may get this done departmentally or through other agencies and recover the cost from the contractor.

The Contractors shall also abide by all the security regulations promulgated from time to time by employer.

8. RATES

The rates to be quoted are intended to provide for works duly and properly completed in accordance with the general and special conditions of contract and specifications and drawings together with such alteration and/or conditions as may be required / ordered without prejudice to the generality thereof shall include for detail of construction which are obviously and fairly intended and which may not have been specifically referred in these documents and working drawings and but are essential for execution and satisfactory completion of work including those of minor nature and shall be deemed to include and cover internal the followings.

- a) Arrangements for obtaining the clearance wherever required from statutory bodies, regarding license for construction, permanent electricity, water supply, and sanitary connections including payment of necessary fees, inspection charges and obtaining financial certificates for using these services.



The various items rates quoted in the schedule as applicable shall be deemed to include the above services and no separate payments shall be made towards these.

- b) The cost of all superintendence and labour materials, tools, plants, equipment's, mobilizing and demobilizing equipment fuel lubricants, fixture, transport charges, temporary and permanent works and quarrying charges, testing, screening, washing, handling of materials, stacking and removal charges, of any rejected materials and water and power arrangements and satisfactory maintenance of the same satisfactory completion of the work intended.
- c) All fees, duties, royalties, rent and compensation to owner for surface damage or taxes and impositions payable to local authorities, in respect of land an structure, for all materials supplied for the work or any other duties/expenses for which the contractor may become liable or may be put to under any provision of the law for the purpose of in connection with the execution of the contract including levies payable on the transactions.
- d) Settings out of works profiles etc., and of construction repair and up-keep of all centre lines, bench marks and levels and page there of including provisions of masonry/concrete pillars showing the centre line of structure/gridlines and levels and maintenance and protection of the same including providing fencing etc., throughout the period of contract.
- e) Breaking, maintenance and removal of temporary works and buildings.
- f) Supply of complete, Moulds, cost of testing of materials etc.
- g) Working in all conditions including in/under water liquid, conditions etc., and shall also include bailing or pumping out water from the foundations, basements or any other sources of whatsoever de-sludging and allied operation at any stage of work including all suspension period and delays whatsoever. Cost of curing including pumping and cost of water whatever necessary.
- h) In the interest of completion of work within the stipulated time, certain works are to be carried out during the monsoon period also. No separate payment will be made to the contractor for such works and it will be deemed to be included in the contract rates.
- i) Diversion and draining works, protection works, temporary facilities, bridges, gangway.
- j) Work at all depth in foundation below the ground level and in superstructure up to all height above ground level including all lifts and distances involved at any other place of work and disposed/barrow areas.
- k) Unless otherwise specified in the specification schedule cost of all leads/lifts etc.
- l) Provision of centering, scaffolding, strutting props etc.,



- m) All materials and labour required for fencing in a protection against risk of accidents and for providing necessary/planking strutting with hand rails, gumboots, helmets, safety belts etc., during the progress of work.
- n) Prevention on trespassing by providing barrier arrangements for the safety of the public or employees during the provision of works.
- o) Works in all shapes include and curved all sizes as shown are as required.
- p) Cleaning the site after the completion of work all debris, left out construction materials machine equipment's, temporary offices, stores, works shop etc., including dressing the area neat and clean shape.
- q) Such other incidental charges or contingencies as may have been provided for in the specifications.

9. LABOUR COLONIES

Labour camp will not be permitted within the project premises.

10. ESCALATION

The rates to be quoted by the tenderer shall be firm and shall cover and include all statutory levies, arising from, acts passed by parliament or by state legislature, the rates shall further be deemed to include statutory levies arising from such Acts, Central or State, which may come into force subsequent to submission of tenders. The tenderer shall note that no claim for enhancement of rates, on the ground that existing statutory levies have been increased, or that new statutory levies have come into effect after tender, or on any other ground, will be entertained on any account.

11. QUANTITY

The probable quantities of the several items of work are furnished in the schedule of quantities. It must be clearly understood that neither the probable quantities nor the value of individual items nor the aggregate value of the entire work shall be binding on the Employer/Engineer does not in any way assure the contractor or Guarantee that the said probable quantities are correct or that the work will correspond to these. The Employer/Engineer reserve the right to omit, vary or add to the item/work described in the schedule, of quantities and no claim for compensation will be entertained on this account.

12. VARIATION/DEVIATION IN QUANTITIES

The contractor shall not make any alteration in addition to or omission from the work as described in the tender document except in pursuance of the written instructions of the Engineer-in-charge. No such deviation from the work described in the tender documents shall be valid unless the same has been specifically confirmed and accepted by the accepting officer in writing and incorporated in the contract. The rates quoted are firm.



13. MATERIALS

BHEL will not supply any materials unless otherwise specified.

14. SUPPLY OF CEMENT, STEEL , PAINT AND OTHER CONSTRUCTION MATERIALS, IS TO BE MADE BY CONTRACTOR

Makes / Source of supply of cement, steel, paint and other construction materials shall be as per approval of BHEL/NTPC.

15. SUPPLY BY CONTRACTOR

The work is for a completed job including labour and supply of all materials except those otherwise specified in the bid document.

The material and works shall be subject to inspection and test as per field quality plan (FQP) duly approved by BHEL/NTPC.

All materials supplied by the contractor according to the contract conditions shall be subject to inspection and passing by the Engineer-in-charge or his representatives from time to time, the contractor providing all facilities for such instruction free of cost.

BHEL officers connected with the contract shall have the power at any time to inspect and examine any stores or materials intended to be used in or on the work, whether on the site or at any factory or workshop or other place where such stores or materials are being fabricated or manufactured or at any place the same are lying and the contractor shall give necessary facilities for such inspection and examination.

The Engineer-in-charge shall be entitled to have tests made of any stores or materials supplied by the contractor shall provide at his own expense all facilities which the Engineer-in-charge may require for this purpose. If at the discretion of the Engineer-in-charge an independent expert is employed to make any such tests his charges shall be borne by the contractor only if the tests disclosed that the said stores or materials are not in accordance with the provision of the contract.

Should the Engineer-in-charge/Civil Engineer consider at any time during the construction or reconstruction or prior to the expiry of the Maintenance Period that the stores or materials provided by the contractor are unsound or of quality inferior to that contracted for, or otherwise not in accordance with the contract (in respect where the decision of the Engineer-in-charge/Civil Engineer shall be final and conclusive) the contractor shall on demand, in writing from the Engineer-in-charge specifying the stores or materials complained of, not with-standing that the same may have been inadvertently passed, certified that and paid forth with remove the stores or materials so specified and provide other and suitable stores or materials at his own expense, to the entire satisfaction of the Engineer-in-charge/Civil Engineer and in the event of his failing to do so within a period to be specified by the Engineer-in-charge/Civil Engineer, in his demand aforesaid, the Engineer-in-charge/Civil Engineer may replace within the other stores or materials complained of at the risk and expense in all respect of the contractor.

The liability of the contractor under this conditions, shall not extend beyond the maintenance period aforesaid except as regards stores or materials which the Engineer-in-charge/Civil Engineer shall have previously given notice to the contractor to replace (Maintenance period for any work under this organization will be six months from the date of actual completion of the particular work and handing over to BHEL).



16. INTERRUPTION TO THE WORKS

While quoting the rates/prices the Contractor should take in to account the fact that due to the design or other stipulations at site, or the necessity to follow a particular sequence of overall construction operation, or non-supply of particular drawings, or the connected work or other reasons, interruptions are likely to be encountered in a work of this nature and magnitude. No claims for such interruptions will be entertained on any account.

17. EXTENSION OF TIME OR PENALTY/LIQUIDATED DAMAGES

Extension of time or penalty/liquidated damages as the case may be will be determined as stipulated in clause No. 2.7.9 of BHEL General Conditions of Contract 2019.

18. COMPLETION OF WORK AND MEASUREMENT

- a) All work shall be carried out according to authorized dimensions and measurement will be restricted to those authorized dimension even though the Contractor may for convenience of this work exceed the authorized dimensions.
- b) All work shall be measured in accordance with the applicable standard method of measurements prescribed by the Indian Standard Institution (1200 latest edition) unless otherwise specified.
- c) The Contractor shall admit for technical inspection, works which are likely to be embedded or covered by other works and have the necessary measurement books and certificates to this effect duly signed by the Engineer before the works are covered.
- d) On completion of the work, the Contractor must submit to the Engineer the following documents for passing of works.
 - i) A copy of the working drawing showing there on all addition and alterations in the process of execution.
 - ii) A certificate for embedded and covered up works as in sub-para (C) above
- e) The authorized Contractors representative and a representative of the Employer shall jointly sign a certificate of handing over any completed work and date of signature of that certificate will be that the date from which the maintenance period of that unit will be reckoned.
- f) Notwithstanding the above, insurance cover has to be taken by the contractor for the full value of work as also for the duration of the contract period. 50% of the Security Deposit shall be released only on the total completion of the building and handing over to BHEL to their satisfaction. Remaining 50% of Security Deposit shall be released subject to the stipulation in BHEL's GCC after 6 months from the date of completion of the building

19. MAINTENANCE OF WORK

The contractor will be responsible for the maintenance of works during the period of construction until the various items are taken over, and for a further period of six months, from the date of taking over.



If the contractor fails to maintain the building satisfactorily, it will be got done by other agency and cost towards such maintenance together with departmental charges will be recovered from his bills/dues.

20. SECURITY DEPOSIT

Upon acceptance of the tender, the successful tenderer shall remit the security deposit with Bharat Heavy Electricals Ltd within the time as specified in the Letter of Intent.

The rate of Security Deposit will be 5% of work order value.

The contractor should submit the Security Deposit before the start of the work by

- i) Cash (as permissible under the income Tax Act).
- ii) Pay order, demand draft in favour of BHEL.
- iii) Local cheques of scheduled banks, subject to realization.
- iv) Securities available from Post Offices such as National Saving Certificates, Kisan Vikas Patras etc.,(Certificate should be held in the name of contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back).
- v) Bank Guarantee from scheduled Banks/Public financial Institutions as defined in the companies Act subject to a maximum of 50% of the total security deposit value. The balance 50% has to be remitted either by cash or in the other form of security. The Bank Guarantee format should have the approval of BHEL.
- vi) Fixed Deposit Receipt issued by scheduled Banks/Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/C BHEL, duly discharged on the back.
- vii) Security Deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of the Security Deposit should be collected before start of the work and balance 50% may be recovered from the running bills.
- viii) EMD of the successful tenderer shall be converted and adjusted against the Security Deposit. The Security Deposit shall not carry any interest.

NOTE: Accepting of Security Deposit against Sl. No. (iv) and (vi) above will be subject to hypothecation or endorsement on the documents in favour on BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

For extra items of work and deviated quantities, security deposit will be recovered at 10% of the value of deviated amount. The security deposit will be released as stipulated under relevant clause of GCC 2019.

21. RUNNING ACCOUNT PAYMENTS

During execution of work, monthly payments of all works in place will be made on the basic measurements recorded in measurement sheet/book in respect of items executed but no claim on the account will be entertained, if for any reason payments are not so made. PRICE VARIATION clause not applicable.

22.1 MOBILIZATION ADVANCE/ADVANCE PAYMENT - NOT APPLICABLE

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22.2 INTEREST & RECOVERY - NOT APPLICABLE

23. Statutory Deduction towards Income Tax will be made as per rules.

24. In respect of all labour directly or indirectly employed on the work by the Contractor, the Contractor shall comply with the provisions of the contract labour (Regulation and Abolition) Act 1970 or any amendment thereof and all legislations and rules of the State and or Central Government or other Authority, framed from time to time governing the protection of health, sanitary arrangements, wages, welfare and safety for labour employed on building and construction works. The rules and other statutory obligations with regard to fair wages, welfare and safety measures, maintenance of the register etc., will be deemed to be part of the contract.

25. The Contractor is required to take insurance for all workers employed on works towards payment for workmen compensation. The insurance has to be taken out within 15 days of the award of work and has to be produced at the time of signing agreement. Half (1/2%) shall be deducted for every bill if the contractor fails to produce a proof of having taken such an insurance to cover his workmen. However the contractor shall be fully responsible for all the consequences arising out of such default. This may also be read with relevant clauses of BHEL GCC 2019.

25. TIME OF COMPLETION

The date of commencement of work shall be counted from the date of handing over the site to the contractor. It may be clearly understood that time is the essence of the contract and the entire work should be completed within the time imposed in the tender document letter of intent.

26. The Contractor has to pay the Works Contract Tax (Under relevant section of the State Government Act) of their own on Monthly basis.

27. The management of BHEL shall be at liberty to terminate the contract by issuing a month's notice to the contractor without assigning any reason what so ever. As regards unsatisfactory performance or noncompliance with any of the terms & conditions of the contract by the contractor. The management of BHEL shall have the right to terminate the contractor forthwith without notice & rearrange the balance work through other agencies at the risk & cost of the contractor & under such circumstances, the Earnest Money Deposit/Security Deposit paid by the contractor shall stand forfeited.

28. SPECIAL CONDITIONS OF TENDER

- i) The successful bidder should open local office for Technical staff/Administrative group at Bangalore City for easy interactions/ monitoring of work at site./ Attend meetings at Bangalore city/site as and when instructed by BHEL.
- ii) Tenderers should not disclose any price bid details/discounts in the technical bids.
- iii) The successful bidder should construct site office / toilets for their workmen at site in consultation with Engineer-in-charge.



29. WORKMEN COMPENSATION POLICY

The contractor is required to take Insurance for all the workers employed on the works towards payments for workmen compensation. The Insurance has to be taken out within 15 days of the award of work and has to be provided at the time of signing the agreement. Half percent (0.5%) of the amount shall be deducted from every bill if the contractor fails to produce a proof of having taken such an insurance to cover his workmen. However the contractor shall be fully responsible for the consequences arising out of such default.

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LIST OF INDIAN STANDARD

Following is the list of various Indian Standards,
Relevant to the Civil Engg., work

1. EARTH WORK

- i) IS 1200-1992, Method Part I Earthwork, Measurement of Building, and Civil Engineering works, and chapter No.2 of CPWD/specification 1977.

2. MORTAR (PLASTERING)

- 1) IS 2394-1984: Code of practice for application of lime plasters finish.
- 2) IS 1661-1972: Code of practice for application of cement lime plasters finish.
- 3) IS 2402-1963: Code of practice for external rendered finishes.

3. CONCRETE WORK & RCC WORK

- 1) IS 456-2000: Code of practice for plain and reinforced concrete.
- 2) IS 432(part 1) –1982(Third Revision): Mild steel and medium tensile steel bars
- 3) IS 1766-1998: Cold twisted steel bars for concrete reinforcement.

4. BRICK WORK

- 1) IS 2212-1991: Code of practice for brick work.

5. STONE WORK

- 1) IS 1597-1992 (Part – I & II): Code of practice for construction of stone masonry.

6. MARBLE WORK

- 1) IS 1124-1974: Methods of test for water absorption of natural building works.

7. STEEL WORK

- 1) IS 800-2007(Third Revision): Code of practice for use of structural steel in general building construction.
- 2) IS 1308-1984: Steels doors, windows and ventilators
- 3) IS 1081-1960: Code of practice for fixing glazing of metal (steel & aluminium doors, windows & ventilators)
- 4) IS 1161-1998: Steel tubes for structural purposes.
- 5) IS 4351-2003: Steel doorframes.
- 6) IS-6245-5245-1971: Metal rolling shutters and rolling grills.



8. FLOORING

- 1) IS 2114-1984: Code of practice for laying in situ terrazzo floor finish.
- 2) IS 2571-1970: Code of practice for in situ cement concrete flooring.
- 3) IS 5318-1969: Code of practice of lying of flexible P.V.C. sheet & tiles flooring.

9. ROOFING

- 1) IS 3007(pt-I)-1999: Code of practice of lying of corrugated cement sheets.

10. FINISHING

- 1) IS 133-2004: Enamel, Interior (a) under coating (b) Finishing colour as required.
- 2) IS 348-1968: French Polish.
- 3) IS 427-2005: Distemper, dry colour as required.
- 4) IS 425-1969: Distemper, oil emulsion as required.
- 5) IS 5410-1992: Cement paint, Colour as required.
- 6) IS 5411 (pt.1)-1974: Plastic emulsion paint for interior use.
- 7) IS 6278-1971: Code of practice for white washing & color washing.

11. DEMOLITION AND DISMANTILING

- 1) IS 1200 (pt. 18)-1974: Method of measurements of demolition and dismantling.

12. SAFETY CODE

- 1) IS 5916-1970: Safety code for construction including use of hot bituminous materials.
- 2) IS 4130-1991: Safety code for demolition of building.
- 3) IS 3754-1966: Safety code for excavation works.
- 4) IS 3696(Pt-1)-1987: Safety code for Scaffolds.

A) DISTEMPERING ON NEW SURFACE. (OILBOUND)

1. COAT OF PRIMER	....	0.07 Litre/Sq.m (one coat)
2. COAT OF DISTEMPER	.....	0.10 Kg/Sq.m (2 coats)

DISTEMPERING WITHOUT PRIMER

FOR 1 COAT	.....	0.10 Kg/Sq.m (For 1 coat)
FOR 2 COATS	.....	0.15 Kg/Sq.m (For 2 coats)

B) SYNTHETIC ENAMEL PAINT.

a) ON NEW SURFACE	... PRIMER	....	0.09 Litre/Sq.m (For1 coat)
ENAMEL PAINT	(2 COATS)	0.15 Litre/Sq.m (For 2 coats)

b) ON OLD SURFACE

2 COATS WITHOUT PRIMER	...	0.20 Litre/Sq.m
1 COAT	...	0.10 Litre/Sq.m

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c) WATER PROOF CEMENT PAINT

1 COAT ... 0.18 Kg/Sq.m

2 COAT ... 0.30 Kg/Sq.m

d) PLASTING EMULSION PAINT:

2 COATS OF PLASTIC EMULSION 0.09 Litre/Sq.m

1 COAT OF PLASTIC EMULSION 0.073 Litre/Sq.m

ON NEW SURFACE

1 COAT PLASTIC FIX PRIMER ... 0.081 Litre/Sq.m

2 COATS PLASTIC EMULSION ... 0.09 Litre/Sq.m

These standards are indicative, any additional IS standard/specification required to be followed shall be adhered to by the contractor/bidder.

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FORM OF TENDER

Having examined the invitation to bid, Instructions to Bidder, General conditions of contract, Special conditions, Specifications tender schedule, Contract drawings and other documents for the above work, we the undersigned, offer to construct, erect complete and maintain the whole of the said in conformity with the said bid documents on the terms and conditions and under the provisions set out or called for in the contract documents at the rates listed in the schedule of unit prices or elsewhere in the contract documents.

We undertake if our bid is accepted, to commence the works within 7 days from the date of issue of award and to complete and delivery the whole of the works comprised in the contract as per the time schedule agreed to the contract document.

We agree to abide by this bid for the period of three months from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before expiry of the period.

Until and unless a formal agreement is prepared and executed this bid, together with your award thereof shall constitute a binding contract between us.

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Dy. Manager, BHEL-EDN

CONTACTOR (SIGN & SEAL)



Annexure - I

Certificate by Chartered Accountant on letter head

This is to Certify that M/S
(hereinafter referred to as 'company') having its registered office at is registered under MSMED Act 2006, (Entrepreneur Memorandum No (Part-II) dtd:
Category: (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722(E) dated October 5, 2006 :
Rs.....Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
Rs.....Lacs

(Strike off whichever is not applicable)

The above investment of Rs.....Lacs is within permissible limit of
Rs.....Lacs forMicro / Small (Strike off which is not applicable)
Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is(dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name -

Membership number -

Seal of Chartered Accountant

NIT Issued By

Thavamani Charles,
Dy. Manager, BHEL-EDN

CONTACTOR (SIGN & SEAL)



ANNEXURE II

**Electronic Funds Transfer (EFT) OR
Paylink Direct Credit Form**

Please Fill up the form in **CAPITAL LETTERS** only.
TYPE OF REQUEST(Tick one): CREATE CHANGE

BHEL Vendor / Supplier Code:				
Company Name :				
Permanent Account Number(PAN):				
Address				
City:		PINCODE	STATE	
Contact Person(s)				
Telephone No:				
Fax No:				
e-mail id:				
1	Bank Name:			
2	Bank Address:			
3	Bank Telephone No:			
4	Bank Account No:			
5	Account Type: Savings/Cash Credit			
6	9 Digit Code Number of Bank and branch appearing on MICR cheque issued by Bank			
7	Bank swift Code(applicable for EFT only)			
8	Bank IFSC code(applicable for RTGS)			
9	Bank IFSC code(applicable for NEFT)			

- A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.
- B If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
- C This authority remains in full force until BHEL, EDN, Bangalore receives written notification requesting a change or cancellation.
- D I have read the contents of the covering letter and agree to discharge the responsibility expected of me as a participant under ECS / EFT.

Date:

Authorised Signatory:
Designation:

Telephone NO. with STD Code

Company Seal

Bank Certificate

We certify that _____ has an Account No. _____ with us and we confirm that the bank details given above are correct as per our records.

Date: (.....) Signature
Place: Signature

Please return completed form along with a blank cancelled cheque or photocopy thereof to:
Bharath Heavy Electricals Ltd,
Attn:
Electronics Division, Mysore Road,
BANGALORE - 560 026
In case of any Querry, please call : 080-26998xxx / 2674xxxx or fax no. 080-2674xxxx

NIT Issued By

Thavamani Charles,
Dy. Manager, BHEL-EDN

CONTACTOR (SIGN & SEAL)



Ref.
Date:

SITE INSPECTION CERTIFICATE

This is to Certify that, I / We.....

..... had inspected the proposed
Construction site thoroughly and understood the scope of works to be carried out in
line with construction drawings/designs/data/Bill of quantities/schedule of items /
Specifications as brought out in the Tender as desired by BHEL.

Agreeable to all Terms & Conditions of Contract and assure to complete the work
Within the stipulation time frame.

Note: In case of bidder unable to visit the site due to any reason, bidder may kindly note that it is the responsibility of the bidder to ensure and understand the scope of work and site condition in line with NIT terms and condition.

Signature of the contractor

Name:
Seal

NIT Issued By

Thavamani Charles,
Dy. Manager, BHEL-EDN

CONTACTOR (SIGN & SEAL)



Ref.
Date:

Declaration in Vendors Letter head

Subject: Certification of MSE or Qualifying PPP-MII ,Order 2017

This is to certify that our firm(Bidder Name) located at.....(address of company) is registered with MSE / Qualify PPP-MII Order 2017.

Required documents is attached with Tender documents supporting above declaration

For and on behalf of
M/s

NIT Issued By

Thavamani Charles,
Dy. Manager, BHEL-EDN

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Additional Clauses for GST:

1. BHEL GST Number of Nodal Agency:

Nodal Unit Registered as Supplier of Goods/Services in GST: Andhra Pradesh
GSTIN of Nodal Unit: Will be intimated later after award of work.

- 2. HSN (Harmonized System of Nomenclature) / SAC (Services Accounting Code) to be mandatorily mentioned in all quotations & invoices submitted.**
- 3. Invoice submitted should be in the format as specified under GST Laws viz. all details as mentioned in Invoice Rules like GSTN registration number, invoice number, quantity, rate, value, taxes with nomenclature – CGST, SGST, IGST mentioned separately, HSN Code / SAC Code etc.**
- 4. Payment of GST to vendors as applicable will be made only if it is matching with data uploaded by Vendors**
- 5. Vendors to give undertaking that GST as mentioned in the Invoice has been paid/will be paid either through cash or admissible input credit and also file the returns**
- 6. For invoices paid on Reverse charge basis – that it is “payable on reverse charge basis” to be mentioned on the invoice.**
- 7. With respect to supplies, vendor should intimate BHEL immediately on dispatch for parallel billing on customer**
- 8. Vendor should get GST registration, if not available, in the state of Andhra Pradesh immediately after placement of order.**

NIT Issued By

Thavamani Charles,
Dy. Manager, BHEL-EDN

CONTACTOR (SIGN & SEAL)

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
(A) Civil Works for RCC Control room Building (1no) & RCC Security room building (1no)					
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 2 km outside the periphery of the area cleared at location shown by BHEL/NTPC.	Sqm	620.00	8.23	5105.00
2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material up to a distance of 2km at location shown by BHEL/NTPC.. Beyond 60 cm girth upto and including 120 cm girth	each	5.00	1111.53	5558.00
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	1051.00	119.29	125378.00
4	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in soft rock complete as per direction of Engineer in charge.	Cum	50.00	231.21	11561.00
5	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in Hard rock complete as per direction of Engineer in charge.	Cum	50.00	666.63	33332.00
6	Filling available excavated earth/murram (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 2 km and lift upto 1.5 m complete as per direction of Engineer in charge.	Cum	906.00	144.09	130546.00
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	55.00	4105.97	225829.00
8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	24.00	4453.32	106880.00
9	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All works above plinth level and up to floor five level, excluding the cost of centering, shuttering and finishing: 1:2:4 (Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20/12.5mm mm nominal size)	Cum	21.00	5611.75	117847.00
10	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works upto plinth level	Cum	89.00	5246.23	466915.00
11	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works above plinth level upto floor V level	Cum	64.00	6166.96	394686.00

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
12	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	168.00	186.86	31393.00
13	Centering and shuttering including strutting, propping etc. and removal of form for Columns, Pillars, Piers, Abutments, Posts and Struts complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	152.00	481.31	73159.00
14	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Lintels, beams, plinth beams, girders, bressumers and cantilevers FOR ANY HEIGHT	sqm	294.00	362.14	106471.00
15	Centering and shuttering including strutting, propping etc. and removal of form for Suspended floors, roofs, landings, balconies and access platform complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	225.00	454.64	102295.00
16	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	sqm	47.00	399.70	18786.00
17	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Stairs, (excluding landings)	sqm	22.00	408.26	8982.00
18	Supplying and filling in plinth with sand/murrum under floors, including watering, ramming, consolidating and dressing complete.	Cum	15.00	1281.20	19219.00
19	Dry stone SOLING AVERAGE 23 cm thick including supply of stones, ramming with sand and preparing surface complete.	sqm	135.00	479.01	64667.00
20	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	25.00	4039.29	100983.00
21	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	80.00	4979.34	398347.00
22	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 up to floor V level. Cement mortar 1:4 (1 cement :4 coarse sand)	sqm	10.00	611.46	6115.00
23	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and finishing with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 coarse sand) finished rough with sponge. EXTERNAL PLASTER	sqm	246.00	261.94	64438.00
24	12 mm cement plaster of mix : 1:6 (1 cement: 6 coarse sand): INTERNAL PLASTER	sqm	467.00	172.89	80740.00
25	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand) DRAIN PLASTER	sqm	72.00	181.15	13044.00
26	6 mm cement plaster of mix : 1:3 (1 cement : 3 fine sand) CEILING PLASTER	sqm	222.00	149.14	33110.00
27	Providing and laying heavy duty vitrified ceramic floor tiles as approved by BHEL/NTPC in different sizes (Minimum thickness shall be 9mm) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 30mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm	Sqm	87.00	984.36	85640.00
28	Providing and laying heavy duty anti skid vertrified Ceramic floor tiles of size 300x300 mm or more (thickness shall be 9mm), of 1st quality conforming to IS : 15622, of approved make, in colours as approved by Engineer In-charge, laid on 30 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	sqm	18.00	713.99	12852.00
29	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622, of approved make, in all colours, shades in skirting, dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm,including pointing in white cement mixed with pigment of matching shade complete.	Sqm	80.00	675.88	54071.00
30	Providing & fixing Acid and alkali resistant tile in flooring on a bed of 30 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand). Tile thickness should be 20mm.	Sqm	17.00	980.72	16673.00

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
31	Providing & fixing dado/skirting Acid and alkali resistant tile on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand). Tile thickness should be 12mm.	Sqm	36.00	1054.65	37968.00
32	Cement concrete flooring (with ironite hardener) 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, etc. complete. 50 mm thick with 10 mm nominal size stone aggregate IS 2571	sqm	41.00	516.60	21181.00
33	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement. 18 mm thick	sqm	11.00	341.87	3761.00
34	Finishing with acid and or alkali resistant Epoxy paint/COATING, 2mm thk heavy duty industrial grade (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work	sqm	41.00	124.25	5095.00
35	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Sqm	25.00	1187.39	29685.00
36	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand), laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. Polished Granite stone slab, colour as approved by Engineer In-charge.	sqm	5.00	2313.45	11568.00
37	Providing and fixing 20 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite of any colour and shade.	Sqm	10.00	2629.02	26291.00
38	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth. Granite Stone of approved shade	Sqm	4.00	2110.29	8442.00
39	Providing and applying plaster of paris putty of 2 mm thickness of approved brand over plastered surface to prepare the surface even and smooth complete. Plaster of Paris (Gypsum Anhydrous) conforming to IS: 2547 shall be used for plaster of paris punning.	Sqm	668.00	129.04	86196.00
40	Finishing walls with Acrylic Smooth exterior emulsion weather proof paint of required shade : New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior weather proof primer applied @ 2.20 kg/10 sqm) EXTERNAL	Sqm	246.00	108.04	26579.00
41	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gms/litre (for Internal walls and ceiling), of approved manufacturer, of required shade and colour complete, as per manufacturer's specification: Two or more coats on new work INTERNAL WALLS AND CEILING	Sqm	668.00	57.17	38190.00
42	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade: Two or more coats on new work SCADA ROOM	Sqm	53.00	84.39	4473.00
43	Painting with acid alkali resistant paint of approved brand and manufacture of required colour to give an even shade: Two or more coats on new work BATTERY ROOM	Sqm	53.00	85.31	4522.00
44	White washing with lime to give an even shade : New work (three or more coats)	Sqm	200.00	18.73	3746.00
45	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	Sqm	200.00	39.36	7872.00

UN-PRICED PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
46	Supplying and fixing rolling shutters (Mechanical gear operated) of approved make, made of required size M.S. laths, interlocked together through their entire length with effective bridge depth of 12mm lath sections, interlocked with each other and ends lock arrangements for inside and outside locking with malleable cast iron clips conforming to IS: 2108 and with mechanical device chain and crank operation for operating rolling shutters complete, including the cost of providing and fixing necessary fittings and fixtures of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 75x1.02 mm (18-gauge steel) M.S. laths with 1.20 mm thick top cover	sqm	9.00	2565.09	23086.00
47	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile C: Fixing with adjustable lugs with split end tail to each jamb	meter	6.00	291.49	1749.00
48	Providing and fixing ISI marked flush door (MDF) shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters. 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	sqm	5.00	1983.71	9919.00
49	Providing and fixing factory made uPVC door frame made of uPVC extruded sections having an overall dimension as below (tolerance $\pm 1\text{mm}$), with wall thickness 2.0 mm ($\pm 0.2\text{ mm}$), corners of the door frame to be Jointed with galvanized brackets and stainless steel screws, joints mitred and Plastic welded. The hinge side vertical of the frames reinforced by galvanized M.S. tube of size 19 X 19 mm and 1mm ($\pm 0.1\text{mm}$) wall thickness and 3 nos. stainless steel hinges fixed to the frame complete as per manufacturer's specification and direction of Engineer-in-charge Extruded section profile size 48x40 mm	meter	26.00	145.40	3781.00
50	Providing and fixing to existing door frames, 24 mm thick factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm ($\pm 0.2\text{ mm}$) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm ($\pm 0.1\text{ mm}$) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm ($\pm 0.2\text{ mm}$) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm ($\pm 0.1\text{ mm}$) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C. and bathroom door shutter).	Sqm	11.00	1155.02	12706.00
51	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, galvanized light gauge rolled form supporting system in double web construction pre painted with steel capping, of approved shade and color to give grid of maximum size of 1200x600 mm as per manufacturers details including supporting grid system, expansion fasteners for suspension arrangement from RCC, providing opening for AC ducts (if required), return air grills (if required), light fixtures, etc., all complete: 15 mm thick MINERAL FIBER BOARD, in tile form of size 600mm x 600mm.	Sqm	20.00	968.16	19364.00

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
52	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) : For Fixed portion, Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	250.00	299.33	74834.00
53	Providing and fixing, for shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately). Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	200.00	358.41	71682.00
54	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in paneling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of Engineer-in-charge. Pre-laminated particle board with decorative lamination on both sides	sqm	15.00	686.77	10302.00
55	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item): With tinted glass panes of 4.0 mm thickness float glass for windows	sqm	15.00	655.74	9837.00
56	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item): With toughened glass panes of 10.00 mm thickness for Partition and doors	sqm	20.00	2917.82	58357.00
57	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	kg	150.00	341.02	51154.00
58	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 300x10 mm	each	10.00	76.62	767.00
59	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 250x10 mm	each	10.00	67.93	680.00
60	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 125 mm	each	20.00	39.13	783.00
61	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete : 300x16	each	20.00	168.69	3374.00
62	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete. Single rubber stopper	each	20.00	22.27	446.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
63	Providing and fixing bright finished brass 100 mm mortice latch and lock, ISI marked, with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS : 1868) aluminium lever handles of approved quality with necessary screws etc. complete.	each	10.00	491.11	4912.00
64	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	each	9.00	558.65	5028.00
65	Providing and fixing Brass 100mm mortice latch and lock with 6 levers without pair of handles (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	Each	10.00	300.81	3009.00
66	18 mm thick moulded cement mortar band in two coats under layer 12 mm thick with cement mortar 1:5 (1 cement : 5 coarse sand) top layer 6 mm thick with cement mortar 1:4 (1 cement : 4 fine sand).	cm per m	50.00	10.63	532.00
67	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : In 75x75 mm deep chase	meter	50.00	155.64	7782.00
68	Diluting and injecting chemical emulsion for POST- CONSTRUCTIONAL anti-termite treatment (including the cost of chemical emulsion) :Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor: With Chlорpyriphos/Lindane E.C. 20% with 1% concentration	sqm	191.00	675.98	129112.00
69	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 110 mm diameter	meter	31.50	200.11	6304.00
70	Providing and fixing on wall face unplasticised - PVC moulded fittings/accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. Shoe (Plain) 110 mm Shoe	each	9.00	74.65	672.00
71	Providing and laying in situ five course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric memberane over roof consisting of first coat of bitumen primer @ 0.40Kg per sqm, 2nd & 4th courses of bonding material @ 1.20 kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, 3rd layer of roofing membrane APP modified Polymeric membrane 2.0 mm thick of 3.00 Kg/ sqm weight consisting of five layers prefabricated with centre core as 100 micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20 micron HMHDPE film. 5th, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat (item of laying brick tiles shall be paid for separately).	sqm	201.25	268.14	53964.00
72	Providing and laying brick tiles over muntry roofs, grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement, over 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat: With common burnt clay F.P.S. (non modular) brick tiles of class designation 10	sqm	201.25	337.45	67912.00
73	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto any height. Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	13024.66	54.78	713425.00
74	Making plinth protection 75mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	sqm	65.00	402.82	26184.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
75	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	300.00	66.75	20025.00
76	Steel work welded in built up sections/ framed work, including cutting, hoisting,fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	kg	200.00	61.43	12287.00
77	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.Hot finished welded type tubes	kg	300.00	94.10	28231.00
78	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade : Two or more coats on new work	sqm	100.00	79.74	7974.00
79	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	20.00	4015.24	80305.00
80	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 using 6mm down stone chips, providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification. Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	sqm	38	337.48	12825.00
81	Providing and fixing PVC pipes for cable entry conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm, pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 150mm dia complete as per direction of Engineer In-Charge.	RM	20.00	104.81	2097.00
82	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :W.C. pan with ISI marked white solid plastic seat and 390 mm high with lid complete as per direction of Engineer In-Charge.	Each	3.00	3451.18	10354.00
83	Providing and fixing approved quality paper holder fix on wall with rawl plugs all materials labours etc., all complete as directed by the Engineer-in-charge.C.P. brass	Each	3.00	382.94	1149.00
84	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :One urinal basin with 5 litre white P.V.C. automatic flushing cistern complete as per direction of Engineer In-Charge.	Each	2.00	3268.36	6537.00
85	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require: White Vitreous China Wash basin size 550x400 mm with a pair of 15 mm C.P. brass pillar taps	Each	3.00	1867.57	5603.00
86	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws hard board backing complete as per direction of Engineer In-Charge.and washers complete.	Each	4.00	841.68	3367.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
87	Providing and fixing PTMT TOWEL RAIL complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour. brass towel rail 600mm long and 20 dia mm with C.P. brass brackets complete as per direction of Engineer In-Charge.	Each	3.00	390.65	1172.00
88	Providing and fixing approved quality liquid soap dispenser and holder fix on wall with rawl plugs all materials labours etc., all complete as directed by the Engineer-in-charge.	Each	3.00	65.50	197.00
89	Providing and fixing approved brands of three layered Sintex Water tank-PVC water tanks including,lifting, positioning and cost of all labours, materials, fittings etc.complete as per direction of Engineer In-Charge.- (2000L each)	ltrs	1500.00	5.77	8660.00
90	Providing and fixing Stainless Steel A ISI 304 (18/8) KITCHEN SINK Pantry unit of sufficient size with sandwich type of platform with one sink (Nirali Make) plumbing fixture plumbing fixtures as per IS: 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required: 510x1040 mm bowl depth 200 mm complete as per direction of Engineer In-Charge.	Each	1.00	3663.17	3664.00
91	Providing and fixing PVC, soil waste and vent pipes conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm, pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 75 mm dia complete as per direction of Engineer In-Charge.	RM	20.00	65.50	1311.00
92	Providing and fixing PVC, soil waste and vent pipes conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm, pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 110 mm dia complete as per direction of Engineer In-Charge.	RM	50.00	85.16	4258.00
93	Providing and fixing PVC, soil waste and vent pipes conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm, pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 150 mm dia complete as per direction of Engineer In-Charge.	RM	10.00	104.81	1049.00
94	Providing & fixing 100 mm PVC for gully, floor or nahani trap at all heights and levels complete as per direction of Engineer In-Charge.	Each	10.00	458.55	4586.00
95	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :25 mm nominal bore complete as per direction of Engineer In-Charge.	Each	2.00	326.13	653.00
96	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :32 mm nominal bore complete as per direction of Engineer In-Charge.	Each	1.00	381.30	382.00
97	Providing and fixing brass stop cock of approved design, quality and make 15mm NB complete as per direction of Engineer In-Charge.	Each	1.00	198.47	199.00
98	Providing and fixing brass stop cock of approved design, quality and make 20mm NB complete as per direction of Engineer In-Charge.	Each	1.00	214.15	215.00
99	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc. 15 mm nominal outer dia Pipes	meter	20.00	268.73	5375.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
100	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc. 20 mm nominal outer dia Pipes	meter	20.00	313.67	6274.00
101	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc. 25 mm nominal outer dia Pipes	meter	10.00	368.64	3687.00
102	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall. 20 mm nominal outer dia Pipes	meter	20.00	201.36	4028.00
103	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall. 25 mm nominal outer dia Pipes	meter	20.00	242.20	4844.00
104	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall. 32 mm nominal outer dia Pipes	meter	20.00	315.24	6305.00
105	Providing and fixing brass bib cock of approved quality: 15 mm nominal bore complete as per direction of Engineer In-Charge.	Each	3.00	198.47	596.00
106	Providing and fixing brass bib cock of approved quality 20 mm nominal bore complete as per direction of Engineer In-Charge.	Each	3.00	214.15	643.00
107	Providing and fixing brass stop cock of approved design, quality and make 15mm NB complete as per direction of Engineer In-Charge.	Each	1.00	198.47	199.00
108	Providing and fixing brass stop cock of approved design, quality and make 20mm NB complete as per direction of Engineer In-Charge.	Each	1.00	214.15	215.00
109	Providing and fixing vista make vertical blind of approved color and brand cost is including of supply of materials, fixing, labour charges, transportation all leads, lifts, taxes etc. complete at all height and levels complete as per direction of Engineer In-Charge.	Sqm	20.00	556.82	11137.00
110	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete: Serrated with central bulb (225 mm wide, 8-11 mm thick)	meter	10.00	185.78	1858.00
111	Providing and laying Non Pressure NP-3 class (Medium duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete. 450 mm dia RCC pipes	meter	10.00	1524.48	15245.00
112	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. G.I. pipes	kg	500.00	103.65	51824.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
113	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	Sqm	25.00	411.67	10292.00
TOTAL AMOUNT: (A)					Rs. 4,941,470.00

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
<u>(B) Electrical works (ELECTRIFICATION FOR CONTROL ROOM (1NO.) AND SECURITY ROOM BUILDING (1NO.)</u>					
1	LED indoor luminaire, industrial grade with diffuser and heat sink, minimum 3-star BEE rating, 36W, 240V, Philips/ Surya Roshini / Wipro/ Bajaj/ Crompton make as per LM79- 08 & LM80-15 standards as approved by NTPC/BHEL	Nos	35.00	3684.81	128969.00
2	LED indoor luminaire, industrial grade with diffuser and heat sink, minimum 3-star BEE rating, 18W, 240V, Philips/ Surya Roshini / Wipro/ Bajaj/ Crompton make as per LM79- 08 & LM80-15 standards as approved by NTPC/BHEL	Nos	20.00	1228.27	24566.00
3	LED bulkhead luminaire around the building (on the outer walls), 9W, 240V, minimum 3 star BEE rating, Philips/ Surya Roshini / Wipro/ Bajaj/ Crompton make as per LM79- 08 & LM80-15 standards as approved by NTPC/BHEL	Nos	20.00	163.77	3276.00
4	Ceiling fan 1200 mm sweep 5 star type of reputed make as approved by NTPC/BHEL	Nos	6.00	2865.97	17196.00
5	Fan regulator Modular type of reputed make as approved by NTPC/BHEL	Nos	6.00	204.71	1229.00
6	6A modular type switch of reputed make as approved by NTPC/BHEL	Nos	100.00	122.83	12283.00
7	6A, 1ph, 5 pin, switched socket outlet Modular type of reputed make as approved by NTPC/BHEL	Nos	10.00	122.83	1229.00
8	16A, 1ph, 5 pin, switched socket outlet Module type of reputed make as approved by NTPC/BHEL	Nos	10.00	245.63	2457.00
9	3x6A, 1ph, 5 (2-3) pin socket outlet controlled by one 16A switch of reputed make as approved by NTPC/BHEL	Nos	5.00	409.42	2048.00
10	25A, 1ph, 5 pin, industrial socket with MCB enclosure of reputed make as approved by NTPC/BHEL	Nos	8.00	286.60	2293.00
11	63A, 3ph, 415V, industrial socket with MCB enclosure of reputed make as approved by NTPC/BHEL	Nos	2.00	402.05	805.00
12	Exhaust fan 450mm of reputed make as approved by NTPC/BHEL	Nos	12.00	7779.05	93349.00
13	Power distribution board of reputed make as approved by NTPC/BHEL	Nos	2.00	6141.35	12283.00
14	Cables, cable conduits for the above, all conduits (Embedded in wall or floor) including accessories shall be 1" pvc pipe (dia) of reputed make as approved by NTPC/BHEL	Mtr	1500.00	32.76	49140.00
15	4CX25 Sq mm Cu Cable of reputed make as approved by NTPC/BHEL	Mtr	50.00	368.48	18424.00
TOTAL AMOUNT: (B)					Rs. 369,547.00
Plus applicable GST					

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
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C: CONSTRUCTION OF INVERTER STATIONS (4NOS) AND MCR YARD (1NO.) AND OTHER ASSOCIATED WORKS

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 2 km outside the periphery of the area cleared at location shown by BHEL/NTPC.	Sqm	1034.00	8.23	8513.00
2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material up to a distance of 2km at location shown by BHEL/NTPC.. Beyond 60 cm girth upto and including 120 cm girth	each	10.00	1111.53	11116.00
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	1154.00	119.30	137668.00
4	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in soft rock complete as per direction of Engineer in charge. Ordinary rock	Cum	50.00	231.21	11561.00
5	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in Hard rock complete as per direction of Engineer in charge. Hard Rock	Cum	20.00	666.62	13333.00
6	Filling available excavated earth/murram (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 2 km and lift upto 1.5 m complete as per direction of Engineer in charge.	Cum	1117.00	144.09	160947.00
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	31.00	4105.97	127286.00
8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	5.00	4453.32	22267.00
9	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All works above plinth level and up to floor five level, excluding the cost of centering, shuttering and finishing: 1:2:4 (1 Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20/12.5mm mm nominal size)	Cum	5.00	5611.75	28059.00
10	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:1½:3 (M20) (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	Cum	5.00	4730.12	23651.00
11	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works upto plinth level	Cum	114.00	5246.23	598071.00

UN-PRICED PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
12	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works above plinth level upto floor V level	Cum	91.00	6166.96	561194.00
13	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, pedestal, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	202.00	186.86	37747.00
14	Centering and shuttering including strutting, propping etc. and removal of form for all heights : plinth beams, Tie/Lintel beams, girders, bressumers and cantilevers FOR ANY HEIGHT	sqm	397.00	362.14	143772.00
15	Centering and shuttering including strutting, propping etc. and removal of form for Suspended floors, roofs, landings, balconies and access platform complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	209.00	454.64	95020.00
16	Centering and shuttering including strutting, propping etc. and removal of form for Columns, Pillars, Piers, Abutments, Posts and Struts complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	329.00	481.31	158351.00
17	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Stairs, (excluding landings)	sqm	50.00	408.26	20414.00
18	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Walls (any thickness)/cable trench wall including attached pilasters, butteresses, plinth and string courses etc.	sqm	10.00	399.70	3998.00
19	Supplying and filling in plinth with sand/murru under floors, including watering,ramming, consolidating and dressing complete.	Cum	10.00	1281.20	12812.00
20	Dry stone SOLING AVERAGE 23 cm thick including supply of stones, ramming with sand and preparing surface complete.	sqm	30.00	479.01	14371.00
21	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	20.00	4039.29	80786.00
22	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	5.00	4979.34	24897.00
23	Random rubble masonry with hard stone in foundation, below fencing and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level for fencing work with :Cement mortar 1:6 (1 cement : 6 coarse sand). Complete as per direction of Engineer-in-charge.	cum	5.00	4015.25	20077.00
24	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	sqm	200.00	181.15	36231.00
25	White washing with lime to give an even shade : New work (three or more coats)	sqm	200.00	18.73	3746.00
26	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	sqm	200.00	39.36	7872.00
27	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	sqm	100.00	1187.39	118740.00
28	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto any height. Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	17999.00	54.78	985906.00

UN-PRICED PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
29	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	6209.00	66.75	414464.00
30	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished welded type tubes	kg	5709.00	94.10	537240.00
31	Painting with synthetic enamel paint of approved brand and manufacture/paint treatment to be suitable for Coastal corrosion to give an even shade : Two or more coats on new work	sqm	400.00	79.74	31895.00
32	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm + 0.05 %, total coated thickness with zinc coating 120 gsm as per IS: 277 in 240 mpa steel grade, 5-7 microns epoxy primer on both sides of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	sqm	271.00	411.67	111564.00
33	Providing & Grouting of dowel tubes / Shear keys / Joints of precast members / Joints of base plates with M-60 grade cementitious grout (Non Shrink) of approved make by suitable means (Free flowing / pump), curing etc. Complete as per directions of Engineer-in-charge. (The payment shall be made on the basis of actual weight of approved grout injected.) Stirrer mixed cementitious grout (non shrink) of approved make in dowel tubes / Shear keys / Joints of precast members.	kg	50.00	48.71	2436.00
35	Supplying and Laying at yard 40mm mm/20 mm size stone aggregate	cum	23.00	1147.84	26401.00
TOTAL AMOUNT: C					Rs. 4,696,054.00
Plus applicable GST					

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying , (E) Access Bituminous Road , (F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
D. CONSTRUCTION OF CHAIN LINK FENCING WORK WITH GATE AT 4 NOS INVERTER STATIONS, 1 NO. MCR YARD AND 1 NO. SWITCHYARD INCLUDING GRAVEL LAYING AND OTHER ASSOCIATED WORKS					
Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	144.00	119.30	17179.00
2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	25.00	4105.97	102650.00
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	32.00	4453.32	142507.00
4	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	6253.00	66.75	417398.00
5	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.Hot finished welded type tubes	kg	855.00	94.10	80459.00
6	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge. Made of G.I. wire of dia 4 mm	Sqm	1080.00	522.96	564797.00
7	Fencing with R.C.C. post placed at required distance, embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post one side only, provided with horizontal lines and two diagonals of barbed wire weighing 9.38 kg per 100 metres (minimum), between the two posts fitted and fixed with G.I. staples on wooden plugs or G.I. binding wire tied to 6 mm bar nibs fixed while casting the post (cost of R.C.C. posts, struts, earth work and concrete to be paid for separately) :- Payment to be made per metre cost of total length of barbed wire used. With G.I. barbed wire	meter	1620.00	7.87	12753.00
8	Hot Dip Galvanisation of fencing column post and stay post etc.	KG	4196.00	26.22	110003.00
9	Painting with synthetic enamel paint of approved brand and manufacture/paint treatment to be suitable for Coastal corrosion to give an even shade : Two or more coats on new work	sqm	500.00	79.74	39868.00
10	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, pedestal, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	201.00	186.86	37560.00
11	Brick work with common burn clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	48.00	4039.29	193886.00
12	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	sqm	124.00	181.15	22463.00
13	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	sqm	243.00	39.36	9565.00
14	White washing with lime to give an even shade : New work (three or more coats)	sqm	243.00	18.73	4552.00
15	Providing and fixing PVC pipes for cable entry conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm. pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 150mm dia complete as per direction of Engineer In-Charge.	RM	30.00	104.81	3145.00

UN-PRICED PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
16	Supplying and Laying at yard 40mm / 20 mm size stone aggregate	cum	875.00	1147.84	1004357.00
TOTAL AMOUNT: D					Rs. 2,763,142.00
Plus applicable GST					

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
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E. CONSTRUCTION OF ACCESS BITUMINOUS ROAD AND OTHER ASSOCIATED WORKS

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge. including watering, rolling compaction under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density).	Cum	66.00	119.30	7874.00
2	Banking excavated earth/borrow earth in layers not exceeding 20 cm in depth, breaking clods, watering, rolling each layer with ½ tonne roller, or wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing up, in embankments for roads, flood banks, marginal banks, and guide banks etc., lead upto 5Km and lift upto 1.5 m, under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density). : All kinds of soil	cum	53.00	308.68	16361.00
3	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge. With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	cum	48.00	1651.61	79277.00
4	Supplying and stacking at site. 63 mm to 45 mm size stone aggregate	cum	40.00	1007.38	40296.00
5	Supplying and stacking at site.53 mm to 22.4 mm size stone aggregate	cum	30.00	1147.84	34436.00
6	Supplying and stacking at siteStone screening 11.2 mm nominal size (Type B)	cum	15.00	1297.90	19469.00
7	Supplying and stacking at site Moorum (binding material for wbm)	cum	8.00	529.92	4240.00
8	Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate, watering and compacting to the required density .	cum	56.00	503.32	28186.00
9	Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications : On W.B.M. @ 0.75 Kg / sqm	sqm	315.00	27.58	8689.00
10	2 cm premix carpet surfacing with 1.8 cum and 0.90 cum of stone chippings of 13.2 mm size and 11.2 mm size respectively per 100 sqm and 52 kg and 56 kg of hot bitumen per cum of stone chippings of 13.2 mm and 11.2 mm size respectively, including a tack coat with hot straight run bitumen, including consolidation with road roller of 6 to 9 tonne capacity etc. complete (tack coat to be paid for separately). With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt	sqm	315.00	113.52	35759.00
11	Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications : On bituminous surface @ 0.50 Kg / sqm	sqm	315.00	22.07	6953.00

UN-PRICED PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
12	Providing and laying seal coat of premixed fine aggregate (passing 2.36 mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG - 10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete.	sqm	315.00	48.34	15229.00
TOTAL AMOUNT: E					Rs. 296,769.00
Plus applicable GST					

UN-PRICED PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
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F. CONSTRUCTION OF SWITCHYARD FOUNDATION AND OTHER ASSOCIATED WORKS

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 2 km outside the periphery of the area cleared at location shown by BHEL/NTPC.	Sqm	6210.00	8.23	51126.00
2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material up to a distance of 2km at location shown by BHEL/NTPC.. Beyond 60 cm girth upto and including 120 cm girth	each	5.00	1111.53	5558.00
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	1278.00	119.30	152461.00
4	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in soft rock complete as per direction of Engineer in charge.	Cum	50.00	231.21	11561.00
5	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in Hard rock complete as per direction of Engineer in charge.	Cum	25.00	666.62	16666.00
6	Filling available excavated earth/murram (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 2 km and lift upto 1.5 m complete as per direction of Engineer in charge.	Cum	1146.00	144.09	165125.00
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	45.00	4105.97	184769.00
8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	10.00	4453.32	44534.00
9	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All works above plinth level and up to floor five level, excluding the cost of centering, shuttering and finishing: 1:2:4 (1 Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20/12.5mm mm nominal size)	Cum	5.00	5611.75	28059.00
10	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:1½:3 (M20) (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	Cum	5.00	4730.12	23651.00
11	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works upto plinth level	Cum	148.00	5246.23	776442.00

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
12	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works above plinth level upto floor V level	Cum	12.00	6166.96	74004.00
13	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, pedestal, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	185.00	186.86	34570.00
14	Centering and shuttering including strutting, propping etc. and removal of form for all heights : plinth beams, Tie/Lintel beams, girders, bressumers and cantilevers FOR ANY HEIGHT	sqm	55.00	362.14	19918.00
15	Centering and shuttering including strutting, propping etc. and removal of form for Suspended floors, roofs, landings, balconies and access platform complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	56.00	454.64	25460.00
16	Centering and shuttering including strutting, propping etc. and removal of form for Columns, Pillars, Piers, Abutments, Posts and Struts complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	351.00	481.31	168939.00
17	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Stairs, (excluding landings)	sqm	25.00	408.26	10207.00
				0.00	0.00
18	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Walls (any thickness)/cable trench wall including attached pilasters, butteresses, plinth and string courses etc.	sqm	108.00	399.70	43169.00
19	Supplying and filling in plinth with sand/murruum under floors, including watering,ramming, consolidating and dressing complete.	Cum	10.00	1281.20	12812.00
20	Stone soiling 23 cm thick including supply of stones and preparing surface complete. (including ramming with sand, watering & compaction etc)	sqm	105.00	479.01	50296.00
21	Brick work with common burn clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	11.00	4039.29	44433.00
22	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	5.00	4979.34	24897.00
23	Random rubble masonry with hard stone in foundation, below fencing and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level for fencing work with :Cement mortar 1:6 (1 cement : 6 coarse sand). Complete as per direction of Engineer-in-charge.	cum	5.00	4015.25	20077.00
24	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	sqm	100.00	181.15	18116.00
25	White washing with lime to give an even shade : New work (three or more coats)	sqm	100.00	18.73	1873.00
26	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	sqm	100.00	39.36	3936.00
27	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	sqm	10.00	1187.39	11874.00
28	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto any height. Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	13032.00	54.78	713842.00
29	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	1716.00	66.75	114548.00

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
30	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished welded type tubes	kg	788.00	94.10	74154.00
31	Painting with synthetic enamel paint of approved brand and manufacture/paint treatment to be suitable for Coastal corrosion to give an even shade : Two or more coats on new work	sqm	100.00	79.74	7974.00
32	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm + 0.05 %, total coated thickness with zinc coating 120 gsm as per IS: 277 in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	sqm	39.00	411.67	16056.00
33	Providing & Grouting of dowel tubes / Shear keys / Joints of precast members / Joints of base plates with M-60 grade cementitious grout (Non Shrink) of approved make by suitable means (Free flowing / pump), curing etc. Complete as per directions of Engineer-in-charge. (The payment shall be made on the basis of actual weight of approved grout injected.) Stirrer mixed cementitious grout (non shrink) of approved make in dowel tubes / Shear keys / Joints of precast members.	kg	50.00	48.71	2436.00
34	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. G.I. pipes	kg	300.00	103.65	31095.00
TOTAL AMOUNT: F					Rs. 2,984,638.00
Plus applicable GST					

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
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G: CONSTRUCTION OF PARKING SHED AND OTHER ASSOCIATED WORKS

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 2 km outside the periphery of the area cleared at location shown by BHEL/NTPC.	Sqm	56.00	8.23	462.00
2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material up to a distance of 2km at location shown by BHEL/NTPC.. Beyond 60 cm girth upto and including 120 cm girth	each	2.00	1111.53	2224.00
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	60.00	119.30	7158.00
4	Filling available excavated earth/murram (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 2 km and lift upto 1.5 m complete as per direction of Engineer in charge.	Cum	39.00	144.09	5620.00
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	5.00	4105.97	20530.00
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	28.00	4453.32	124694.00
7	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, pedestal, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	81.00	186.86	15136.00
8	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto any height. Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	996.00	54.78	54557.00
9	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	1680.00	66.75	112144.00
10	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.Hot finished welded type tubes	kg	1680.00	94.10	158095.00
11	Painting with synthetic enamel paint of approved brand and manufacture/paint treatment to be suitable for Coastal corrosion to give an even shade : Two or more coats on new work	sqm	95.00	79.74	7575.00
12	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm + 0.05 %, total coated thickness with zinc coating 120 gsm as per IS: 277 in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	sqm	99.00	411.67	40756.00

UN-PRICED PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
13	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	11.00	4039.29	44433.00
14	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	sqm	72.00	181.15	13043.00
15	White washing with lime to give an even shade : New work (three or more coats)	sqm	72.00	18.73	1349.00
16	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	sqm	72.00	39.36	2834.00
TOTAL AMOUNT: G					Rs. 610,610.00

Plus applicable GST

Activities	Summary of the activities	
A	Construction of RCC Control room building (1 no.), RCC Security room building (1 no.)	Rs. 4,941,470.00
B	Electrification work for RCC control room and security room	Rs. 369,547.00
C	Inverter stations (4 Nos) and MCR yard (1 No.),	Rs. 4,696,054.00
D	Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying	Rs. 2,763,142.00
E	Access Bituminous Road ,	Rs. 296,769.00
F	Switchyard foundation	Rs. 2,984,638.00
G	Parking shed and other associated works	Rs. 610,610.00
Total value of the works (rounded off)		Rs. 16,662,230.00
QUOTE PERCENTAGE (%) ABOVE/Below (+/-) (OR) AT PAR TO TOTAL AMOUNT		XXXXXXX
QUOTED PERCENTAGE (%) IN WORDS ABOVE/Below (OR) AT PAR TO TOTAL AMOUNT		XXXXXXX
Plus applicable GST		
NOTE:		
1. CONTRACTOR SHOULD QUOTE PERCENTAGE (%) ABOVE/Below (OR) AT PAR TO TOTAL AMOUNT		
2. QUOTED PERCENTAGE (%) IS APPLICABLE ON ALL ITEM RATES UNIFORMLY.		

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
	<p style="text-align: center;">CIVIL WORKS</p>
<u>PROJECT:</u> 25 MW FLOATING SOLAR PV PROJECT AT NTPC SIMHADRI IN ANDHRA PRADESH	PAGE 1

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
<p>1.0 SITE LEVELLING AND GRADING:</p> <p>1.1 Site levelling works involves the following works:</p> <p>1) All works related to site clearance including removal of bushes, trees, levelling, grading, finishing and other additional works shall be carried out by the Contractor. Mandatory permission/ licenses/ statutory clearances from Competent Authorities for site levelling activities like removal of tree and bushes, undertaking blasting related works, disposal of cutting material etc. shall be carried out by the contractor.</p> <p>2) Site grading level shall be fixed with due reference to site drainage of the whole area, existing drainage pattern, maximum flood level and system requirements.</p> <p>3) Site levelling works/scheme shall match with the specific functional requirement of Solar PV optimum generation considering the full utilization of the plot area for the desired capacity.</p> <p>4) Consideration from the boundary and fencing requirements.</p> <p>1.2 Based on the spot level, contour survey done and meeting above requirements, bidder can propose different site grade levels. The site levelling may be carried in patches/blocks. Bidder may also propose the site leveling and grading matching with the natural topography of the land considering the optimized use of the land, however bidder shall ensure to meet the desired power generation capacity in the allotted plot area. Bidder shall also ensure that no water ponding and flooding occurs in the low lying areas & effective drainage is provided in the whole plot area, in all kind of site levelling and grading or plant at natural topography schemes, bidders has to ensure to provide proper and effective drainage system in line with "Drainage System" chapter. After performing the optimization of levels from the detailed site survey by the Contractor, the final formation level of the plot in various areas shall be finalized. The area shall be suitably cut and filled to suit the layout requirement. The site levelling and grading scheme incorporating the above aspects shall be submitted to NTPC for approval.</p> <p>1.3 Fill shall normally be made up of Cohesive Non swelling material capable of being compacted upto 95% Standard Proctor density. In case earth has to be borrowed from outside the plant boundary, the same shall be arranged by the Contractor himself. The slope at the edge of graded areas</p>	<p>A-1 SITE LEVELING & GRADING</p>

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
	<p>shall not be flatter than 1:1.5 (1 vertical to 1.5 horizontal) in cutting and 1:2 in filling. In case of fill by rock material, the same shall be done in line with relevant Indian Standard.</p> <p>1.4 All buildings & switchyard area/sub-station area shall be constructed in levelled area. No foundation shall be allowed on back filled soil and in that case the depth of foundations shall reach up to NGL. Final Level will be approved in detail engineering.</p> <p>1.5 The slope protection measure shall be provided in case inter levelled patches level difference is more than 2.0m. Random rubble/boulder/stone pitching/concrete blocks etc. shall be provided for the slope protection for road side slope, storm water ditches/drainage, embankment slopes, inter levelled patches slopes etc. as per design requirements.</p> <p>1.6 Suitable sand erosion control measure shall be provided in case any sand dune falls inside the plot area. The same may be made with Random rubble/boulder/stone pitching/concrete blocks etc. Bidder shall also provide sufficient grass/buses/trees covers on these dune.</p>

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
<p>1.0</p> <p>GENERAL</p> <p>This chapter covers the Specific technical and functional requirements.</p> <p>The design calculations and drawings for RCC structure/Room, Steel structure, foundation system, road work, drainage, etc. shall be submitted for prior approval of NTPC before commencement of construction. The construction methodology for road works, drains shall be also be submitted for NTPC approval before start of works.</p> <p>All design of RCC and Steel structures shall be carried as per IS: 456 and IS 800 respectively and other specific code as applicable to specific structures.</p> <p>2.0</p> <p>CMCS, INVERTER ROOMS, SECURITY ROOM:</p> <p>The following structures shall be designed and provided by the bidder:</p> <p class="list-item-l1">(I) CMCS Building: For the operation and maintenance of SPV Plant one Central Monitoring and Control Station (CMCS) with 11 KV switchgear room shall be provided. The CMCS building shall consist of the following:</p> <ul style="list-style-type: none"> 1. Air conditioned SCADA Room 2. Inverter, battery room, ACDB and 11 KV Switchgear Room <p>Inverter(s), battery room, ACDB and 11 KV Switchgear room shall be based on manufacturer recommendation, easy passage of O&M persons and cable trench layout required. The CMCS shall be RCC framed structure with bricks/concrete blocks masonry walls.</p> <p>The minimum size & requirements of the CMCS Building & all items shall be as per tender drawing.</p> <p class="list-item-l1">(II) Inverter Rooms: Inverter rooms consist of PCU's, LT panels, batteries, etc. shall be provided based on manufacturer recommendation, easy passage of O&M persons and cable trench layout required. The Inverter Room shall be RCC framed structure with bricks/concrete blocks masonry walls and containerized solutions.</p> <p>The battery and its associated equipment shall be suitably segregated inside the Inverter room with proper ventilation arrangement.</p>	

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS						
<p>2.1</p> <p>2.1.1</p> <p>2.1.2</p>	<p>The equipment inside the inverter room shall be placed so as to provide sufficient space for their maintenance.</p> <p>The layout, design and drawings for all RCC structure, etc. and foundation system shall be approved from NTPC before start of works.</p> <p>The buildings and allied works shall be designed to meet NATIONAL BUILDING CODE (SP: 07 2016) requirements.</p> <p>Finish floor level of all building shall be minimum 450 mm above from Finish graded level.</p> <p>Specification for RCC Building for CMCS and Inverter room.</p> <p>The CMCS building shall be made of RCC framed structure with bricks/concrete blocks masonry walls. The thickness of outer masonry walls shall be minimum 230mm in case of bricks and minimum 200mm thick in case of concrete blocks. The following detailed specification shall also be followed for RCC works:</p> <p>Floor Finishes</p> <table border="1" data-bbox="382 1073 1377 1291"> <tr> <td data-bbox="382 1073 663 1147">Switchgear/Inverter rooms</td><td data-bbox="663 1073 1377 1147">: Cement concrete flooring with ironite hardener.</td></tr> <tr> <td data-bbox="382 1147 663 1185">SCADA room</td><td data-bbox="663 1147 1377 1185">: Heavy duty vitrified ceramic tiles</td></tr> <tr> <td data-bbox="382 1185 663 1291">Battery room</td><td data-bbox="663 1185 1377 1291">: Acid Alkali resistance tile flooring or acid alkali resistant epoxy coating over concrete flooring with ironite hardener</td></tr> </table> <p>Flooring for air conditioned areas area shall be provided with vitrified ceramic tiles of size 600X 600 mm of min 9 mm thickness, laid with 3 mm ground joints as per approved pattern. Cement concrete flooring shall conform to IS 2571.</p> <p>The floor finish for toilet shall be vitrified ceramic anti-skid tiles and Dado glaze ceramic tiles upto 2.1m shall be used. The normal size of Ceramic tiles shall be 300 mm X 300 mm X 9 mm and shall comply IS: 15622.</p> <p>Finish floor level of all building shall be minimum 600 mm above from Finish graded level.</p> <p>False Ceiling</p> <p>The SCADA room shall be provided with false ceiling of 15 mm thick mineral fiber board, in tile form of size 600mm x 600mm, along with</p>	Switchgear/Inverter rooms	: Cement concrete flooring with ironite hardener.	SCADA room	: Heavy duty vitrified ceramic tiles	Battery room	: Acid Alkali resistance tile flooring or acid alkali resistant epoxy coating over concrete flooring with ironite hardener
Switchgear/Inverter rooms	: Cement concrete flooring with ironite hardener.						
SCADA room	: Heavy duty vitrified ceramic tiles						
Battery room	: Acid Alkali resistance tile flooring or acid alkali resistant epoxy coating over concrete flooring with ironite hardener						
<u>PROJECT: 25 MW FLOATING SOLAR PV PROJECT AT NTPC SIMHADRI IN ANDHRA PRADESH</u>	PAGE 5						

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
2.1.3	<p>galvanized light gauge rolled form supporting system in double web construction pre painted with steel capping, of approved shade and color, to give grid of maximum size of 1200x600 mm as per manufacturers details including supporting grid system, expansion fasteners for suspension arrangement from RCC, providing openings for AC ducts(if required), return air grills(if required), light fixtures, etc., all complete.</p> <p>Roof Finishes</p> <p>Roof of the Building shall consist of Cast-in-situ RCC slab with decking sheet (RCC slab with permanent formwork) The slab formwork decking sheet shall be permanently colour coated profile sheet with minimum 0.6mm thickness of grade SS255 as per ASTM A653M / grade G250 as per AS 1397 coated with zinc of class designation Z275 or aluminium zinc alloy of class designation AZ150 or similar. The decking sheet shall meet the strength, deflection and other functional requirements.</p> <p>Bidder can also provide Roof of the building as Cast-in-situ RCC slab conforming to Indian code.</p> <p>The roof of the building shall be water proof with Polymeric membrane type waterproofing as per DSR. The roof shall be designed for minimum superimposed load to 150 kg/m2.</p> <p>For efficient disposal of rainwater, the run off gradient for the roof shall not be less than 1:100 and the roof shall be provided with PVC/RCC water gutter, wherever required. Gutter shall be made water tight using suitable watertight treatment. This gradient can be provided either in structure or subsequently by screed concrete 1:2:4 (using 12.5 mm coarse aggregate) and/or cement mortar (1:4). However, minimum 25 mm thick cement mortar (1:4) shall be provided on top to achieve smooth surface. The roof of all building shall be projecting out by at least 450 mm all around the building for its external walls protection from rain water and parapet wall above the roof beam. Height of parapet wall shall be minimum 300 mm above top of roof level. Structural steel hand railings of minimum 700mm height shall also be provided over the parapet wall.</p> <p>The bidder shall also provide rain water harvesting system consisting of ground water recharge pits for CMCS building roof.</p> <p>View point</p> <p>RCC terrace of CMCS building shall also work as view point. View point shall be used for security purposes and viewing gallery. Suitable RCC half</p>
	<p>PROJECT: 25 MW FLOATING SOLAR PV PROJECT AT NTPC SIMHADRI IN ANDHRA PRADESH</p> <p>PAGE 6</p>

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
<p>2.1.5</p>	<p>landing staircase shall be provided for access to roof of the RCC CMCS building.</p> <p>Windows, Doors, Ventilators and Rolling Shutters</p> <p>Doors, windows and ventilators of air-conditioned areas, entrance lobby of all buildings, and all windows and ventilators of CMCS building shall have, powder coated (minimum thickness of powder coating 50 micron) aluminum framework with glazing. Window shall be provided with suitable aluminum grill.</p> <p>Doors of toilet areas shall be of steel framed solid core flush shutter as per IS 2202. Minimum size of door provided shall be 2.1 m high and 1.2 m wide. However, for toilets minimum width shall be 0.75 m and office areas minimum width shall be 1.20 m.</p> <p>The Bidder can also propose uPVC extruded casement/ sliding windows and doors with complete fitting and accessories as per items mentioned in DSR 2016.</p> <p>All external door of CMCS shall be provided with Collapsible metal grille with locking system.</p> <p>Doors and windows on external walls of the buildings (other than areas provided, with insulated metal claddings) shall be provided with RCC sunshade over the openings with 300 mm projection on both side of the openings. Projection of sunshade from the wall shall be minimum 450 mm over window openings and 450 mm over door openings except for main entrance door to the control room where the projection shall be 1500 mm.</p> <p>Rolling shutter (Mechanical gear operated). Rolling shutters shall be fabricated from 18-gauge steel and machine rolled with 75 mm rolling centers with effective bridge depth of 12 mm lath sections, interlocked with each other and ends locked with malleable cast iron clips to IS: 2108 and shall be designed to withstand a wind load without excessive deflection. Metal rolling shutters and rolling grills as IS: 6248</p> <p>Glazing</p> <p>All accessible ventilators and windows of all buildings shall be provided with min. 4mm thick float glass, tinted for preventing solar radiations, unless otherwise specified.</p>
	<p>PROJECT: 25 MW FLOATING SOLAR PV PROJECT AT NTPC SIMHADRI IN ANDHRA PRADESH</p> <p>PAGE 7</p>

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS								
<p>2.1.7</p> <p>Paintings of wall and ceilings</p>	<p>For single glazed aluminium partitions and doors, toughened float glass of 10 mm thickness shall be used. All glazing work shall conform to IS: 1083 and IS: 3548.</p> <p>The glass to be used should be from reputed brand / manufacturer and as approved by NTPC. The glass should be free from distortion and thermal stress.</p> <table border="1" data-bbox="382 653 1377 1035"> <tr> <td data-bbox="382 653 817 781">Internal wall surfaces: SCADA room All other rooms in plant buildings</td><td data-bbox="817 653 1377 781">-Acrylic Emulsion -Acrylic Distemper</td></tr> <tr> <td data-bbox="382 781 817 855">External faces of walls:</td><td data-bbox="817 781 1377 855">-Exterior emulsion paint</td></tr> <tr> <td data-bbox="382 855 817 983">Walls of battery room</td><td data-bbox="817 855 1377 983">-Acid alkali resistant paint, an exposed wall above Dado -2100 mm high Dado of acid alkali resistant tiling.</td></tr> <tr> <td data-bbox="382 983 817 1035">All Ceiling</td><td data-bbox="817 983 1377 1035">-Acrylic Distemper</td></tr> </table> <p>The paint shall be anti-fungal quality of reputed brand suitable for masonry. All painting on masonry or concrete surface shall preferably be applied by roller. If applied by brush, then same shall be finished off with roller. For painting on concrete, masonry and plastered surface, IS: 2395 shall be followed. Minimum 2 finishing coats of paint shall be applied over a coat of primer.</p> <p>For painting on steel work and ferrous metals, BS: 5493 and IS: 1477 shall be followed. The type of surface preparation, thickness and type of primer, intermediate and finishing paint shall be according to the painting system adopted.</p> <p>Ceiling of all rooms except Battery room shall be white washed. The ceiling of Battery room (if provided) shall be acid/alkali resistant paint. CMCS building outside colors of painting shall be similar to PEB painting colors.</p> <p>A standard color scheme for the different buildings/structures shall be prepared by the Contractor and the approval of the Owner shall be obtained, before commencement of work.</p> <p>2.1.8</p> <p>Plumbing and sanitary</p>	Internal wall surfaces: SCADA room All other rooms in plant buildings	-Acrylic Emulsion -Acrylic Distemper	External faces of walls:	-Exterior emulsion paint	Walls of battery room	-Acid alkali resistant paint, an exposed wall above Dado -2100 mm high Dado of acid alkali resistant tiling.	All Ceiling	-Acrylic Distemper
Internal wall surfaces: SCADA room All other rooms in plant buildings	-Acrylic Emulsion -Acrylic Distemper								
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<u>PROJECT: 25 MW FLOATING SOLAR PV PROJECT AT NTPC SIMHADRI IN ANDHRA PRADESH</u>	PAGE 8								

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
<p>2.2</p> <p>Specification for PEB room</p> <p>Deleted.</p> <p>2.3</p> <p>Water Supply</p> <p>GI pipes of Medium quality conforming to IS 1239 (Part I-1990) or CPVC pipes conforming to IS 15778 shall be used for all portable hot and cold water distribution supply and plumbing works.</p> <p>The Syntax or equivalent make PVC storage water storage tank conforming to IS: 12701 shall be provided over the roof of the CMCS with adequate capacity for 10 No person and 24 hr requirement, complete with all fitting including float valve, stop cock etc. The capacity of the tank shall be minimum 500 liters.</p> <p>2.4</p> <p>Plastering</p> <p>All external surfaces shall have 18 mm cement plaster in two coats, under layer 12 mm thick cement plaster 1:5 and finished with a top layer 6 mm thick cement plaster 1:6 (DSR 2013-13.11).</p> <p>White cement primer shall be used as per manufacturer's recommendation.</p> <p>At least one coat of plaster shall be applied to interior walls by hand or mechanically, to a total thickness of 12 mm using 1:6, 1 cement and 6 sand. Plastering shall comply to IS: 1542, IS: 1661, IS: 1630. Oil bound washable distemper on smooth surface applied with minimum 2 mm thick Plaster of Paris putty for control room. Plaster of Paris (Gypsum Anhydrous) conforming to IS: 2547 shall be used for plaster of paris punning.</p>	

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
2.5	<p>Masonry Work</p> <p>Brick works shall be using at least class designation 7.5 of approved quality as per IS: 1077, IS: 2212 and IS: 3495. Concrete blocks shall be of minimum compressive strength of 7.5 N/mm² and shall be of Grade-A as per IS: 2185. Stone masonry work with hard stone in building works, foundation, plinth and drains shall be Coursed Rubble or Random Rubble masonry work with stone of good quality and durability. The masonry surface shall be plastered with minimum 18mm plaster in case of CMCS walls. The stone masonry work shall be in line with IS: 1597, IS: 1122 and IS: 1126.</p> <p>The cement mortar for all kind of masonry work shall be in the ratio 1 cement and 6 sand by weight.</p> <p>Bricks/blocks required for masonry work shall be thoroughly soaked in clean water tank for approximately two hours. Brick shall be laid in English bond style. Green masonry work shall be protected from rain. All masonry work shall be kept moist on all the faces for a period of seven days.</p> <p>Bricks of class designation 50 and 35 may be permitted to have slight distorted & rounded edges provided no difficulty shall arise on this account in laying of uniform courses in non-load bearing structures and shall be subjected to approval of NTPC. Tolerances on dimensions up to +/- 8% shall be permitted. Dimension test to be carried out as per IS code.</p> <p>The external wall for the building shall be 230 mm thick walls and internal wall 230/115 thick as per requirements. The external wall of CMCS facing the transformer area shall be as per IS: 1646 - Code of practice for fire safety of buildings (general): electrical installations.</p> <p>Use of fly ash brick for masonry shall be subjected to approval of NTPC.</p> <p>Suitable damp proof course shall be provided the proportion of cement, sand & aggregate shall be 1:2:4 using 6 mm down stone chips with a water proofing admixtures. The thickness of damp-proof course shall be minimum 40 mm.</p> <p>Reinforced Concrete Structure, Allied Works and Foundation</p> <p>All RCC works shall be design mix as per IS: 456-2000. For structural concrete items, Ordinary Portland cement (43 Grade) conforming to IS: 8112 and Fly ash based Portland pozzolana cement conforming to IS: 1489 (Part-1) shall be used for superstructure. Type of cement for sub-structures shall be decided based on the final Soil Investigation report.</p>
	<p>PROJECT: 25 MW FLOATING SOLAR PV PROJECT AT NTPC SIMHADRI IN ANDHRA PRADESH</p> <p>PAGE 10</p>

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
	<p>Coarse aggregate for concrete shall be crushed stones chemically inert, hard, strong, durable against weathering of limited porosity and free from deleterious materials. It shall be properly graded. It shall meet the requirements of IS: 383.</p> <p>Sand shall be hard, durable, clean and free from adherent coatings of organic matter and clay balls or pellets. Sand, when used as fine aggregate in concrete shall conform to IS: 383. For plaster, it shall conform to IS: 1542 and for masonry work to IS: 2116</p> <p>Reinforcement steel shall be of high strength deformed TMT steel bars with corrosion inhibitors, Corrosion Resistant Steel (CRS) re-bars, Fusion Bonded Epoxy Coated (FBEC) re-bars or Zinc Coated re-bars of grade minimum Fe-500 and shall conform to IS: 1786. Ductile detailing in accordance with IS: 13920 shall be adopted for superstructure and substructure of all RCC buildings / structures</p> <p>The following minimum grades of concrete for design mix and nominal mix shall be adopted for the type of structures noted against each unless not specified elsewhere.</p> <p>M 30 - All RCC structural elements above and below ground level, precast concrete, MMS foundation, cable trench, oil pit, Grade Slab, Paving, culverts & road.</p> <p>M-20 (Equivalent nominal Mix of 1:1.5:3)* - Fencing work</p> <p>M-15 (Equivalent Nominal Mix of 1:2:4) - Base slab of drains.</p> <p>M-10 (Equivalent Nominal Mix of 1:3:6) - Plain Concrete Cement.</p> <p>The bidder shall carry out the design mix of M-30 grade concrete on priority. The design mix shall be approved from NTPC before start of work.</p> <p>In case Geotechnical investigations requires any special kind of cement or higher grade of concrete, the same shall be provided.</p> <p>The foundation system shall be made which transfer loads safely to the soil for the module mounting structures, depending on soil conditions, geographical condition, regional wind speed, bearing capacity, slope stability etc. All foundation system and foundation depth shall be decided based on the approved geotechnical investigation report. No foundation allowed on back filled soil and the foundation depth to reach upto NGL.</p>

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
2.7	<p>All loads shall be considered in line with IS: 875. Seismic loads for design shall be in accordance with IS: 1893 and relevant Standards.</p> <p>IS: 2502 Code of Practice for Bending and Fixing of Bars for concrete Reinforcement must be complied for reinforcements. IS: 5525 and SP: 34 shall be followed for reinforcement detailing.</p> <p>A minimum 75 mm thick PCC shall be provided below RCC wherever RCC is laid over the ground. Proper and sufficient formwork/shuttering shall be provided for the required period as per IS: 456.</p> <p>A. Structural Steel</p> <p>All structural steel design shall be carried out as per IS 800. Structural steel shall conform IS 2062/IS 1079 or equivalent, Pipe shall be as per medium/high grade of IS 1161, Chequered plates shall conformed to 3502 and Hollow steel sections for structural use shall conform to IS: 4923.</p> <p>B. Structural Steel/Steel Sheet Painting</p> <p>All non-hot dip galvanised structural steel (excluding Module Mounting & SCB structure)/ Outdoor metal containers/ Enclosure/ Rolling shutter items shall be provided with paint designed for a minimum maintenance-free life of fifteen (15) years (high durability) as per ISO 12944 and IS 800. For finishing coat suitable colour pigment shall be added. All paints including primer shall be of the reputed brand/manufacturer and as approved by the Engineer-In-charge. The method of application shall be as per the recommendations of the manufacturer. For corrosive category of refer appendix-D1</p> <p>Grouting</p> <p>Cement mortar (1:2) grout with non-shrink additives shall be used for grouting below base plate of column. The grout shall be high strength grout having a minimum characteristic compressive strength of min 30 N/mm² at 28 days.</p> <p>TRANSFORMER YARD CIVIL WORKS</p> <p>Transformer and equipment's foundations shall be founded on piles/isolated spread footings depending on the final geotechnical investigation report. Metering yard equipment's structures shall be designed as per IS: 801 and IS: 800.</p>
	<p>PROJECT: 25 MW FLOATING SOLAR PV PROJECT AT NTPC SIMHADRI IN ANDHRA PRADESH</p>
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CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
4.0	<p>Transformer foundations shall have its own pit which would cover the area of the transformer and cooler banks, so as to collect any spillage of oil or oil drainage in case of emergency. The oil pit shall be filled with granite stones of 40 mm size uniformly graded.</p> <p>The bidder can propose soak pit under Transformer or Burnt oil pit at a distance connected to transformer soak pit depending upon oil quantity in Transformers. It shall be sized to accommodate the oil volume of the transformer connected to it, without backflow. The Gravel-filled level under transformer shall be in accordance with FGL outside pit and transformer bottom level.</p> <p>The area around the transformer and equipment's shall be covered with gravel and galvanized chain link fence of height min 1.8 m with fence posts and gates shall be provided. The portion of the fence covering towards rail track shall be made of a removable type for movement of the transformer during erection /removal. In addition, a small gate, 1.2 m wide shall be provided for an entry. The transformer yard fencing work shall conform to CEIG requirements.</p> <p>Transformer track rails shall conform to IS 3443. The requirement of a fire barrier wall between transformers shall be as per Electricity Rules and IS 1646 recommendations</p> <p>PIPE /CABLE RACKS & TRENCHES</p> <p>Trenches shall be constructed in reinforced cement concrete of M-30 grade of wall thickness min 150 mm. The top of trenches shall be kept at least 100 mm above the gravel level so that rain water does not enter the trench. Trench walls shall not foul with the foundations.</p> <p><u>Outdoor Cable Trenches:</u> RCC cable trenches shall be constructed in the switchyard and pre-cast RCC removable covers with lifting arrangement, edge protected with suitable galvanized angle iron designed to withstand self-weight of top slab + concentrated load of 150 kg at center of span on each panel.</p> <p><u>Indoor Cable Trenches:</u> RCC indoor cable trenches shall be provided with 50X50X4 mm angles grouted on the top edge of the trench wall for holding minimum 6 mm thick mild steel checkered plate covers (600-1200 mm in length except at ends & bends) conform to IS: 3502 with lifting arrangement. Angle or channels shall also be grouted at distances of 600 mm across the indoor cable trenches to support the checkered plates.</p>

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS
	<p>Trench Drainage: The trench bed shall have a slope of approx. 1/500 along the run & 1/250 perpendicular to the run. In case straight length exceeds 30 m, suitable expansion joint shall be provided at appropriate distances. The expansion joint shall run through vertical wall and base of trench. All expansion joints shall be provided with approved quality PVC water stops. Suitable drainage at lowest point of the trench shall be provided.</p>
5.0	<p>ROAD AND PATHWAY</p>
5.1	<p>Road</p>
	<p>The approach road to the Floating Solar Power Plant facilities shall originate from the nearest existing Plant road. Approach road shall be 3.0 meter wide with 0.5 meter wide shoulder on both side. Red moorum/brick, minimum 100 mm thick shall be provided for shoulder. The crown of the road shall be minimum 150 mm above FGL. The final finished roads shall have a camber of 1 in 50.</p>
	<p>The minimum road section shall be as follows:</p>
	<ol style="list-style-type: none"> 1) Topping: Wearing course of premix carpet 20 mm thick. 2) WBM, compacted 75 mm thick (Grade-III). 3) WBM, compacted 100 mm thick (Grade-II). 4) Granular Sub-base, compacted 150mm thick granular sub-base (Gr-I). (WBM 100 mm thickness can be modified to 75 mm for WBM with corresponding increase of 25 mm in subbase thickness.) Bidders can also propose Wet Mix Macadam (WMM) in place of Water Bound Macadam (WBM) for approach road base construction.) 5) Sub-grade under road and its shoulders shall be compacted to achieve 95% or more of standard proctor's MDD. CBR value of the sub grade level should be minimum 4%. If actual CBR is less than 4% in a particular stretch then GSB thickness shall be increased suitably.
	<p>The methodology of road construction with material specifications shall be in line with IRC/MORTH and shall be submitted for approval before starts of works. Road works shall be carried out as per tender drawing.</p>
6.0	<p>DRAINAGE SYSTEM</p>
	<p>Surface drainage/Garland Drain system shall be designed considering "maximum hourly rainfall intensity" at the site area considering latest 25 years return period however the minimum value of "maximum hourly rainfall intensity" shall be maintained as 60 mm in the drainage system design. The minimum value of surface run off coefficient shall be considered as 0.6 in the design of drainage system. The drainage system</p>
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CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS				
<p>shall be designed as per the IRC specifications and prevailing industry practices. The drainage scheme shall be designed considering the bidder's plot area and nearby catchment area contributing to the plot drains. Drainage scheme with detention ponds which allows for groundwater recharge & maintains the existing drainage pattern as far as possible is desired. A network of open drains shall be designed & provided to carry surface run off. The drains shall be trapezoidal or rectangle section lined with concrete slabs/brick masonry/stone masonry/stone slabs. The minimum thickness of these lining shall be 115mm for brick masonry, 75mm thick for concrete slab, 150mm thick for stone masonry and 40mm thick for stone slab.</p> <p>Grade level shall be fixed with due reference to highest high flood level of the receiving body of water. Laying of Hume pipe shall be in line with IS: 783.</p> <p>7.0 ELECTRIFICATION OF BUILDING</p> <p>Electrification of all building shall be carried out as per IS 732-1989, IS: 4648-1968 and other relevant standards.</p> <p>8.0 LIST OF APPLICABLE INDIAN STANDARDS:</p> <p>Indian codes, and/or standards shall govern, in all the cases wherever they are available. In case of a conflict between such codes and/or standards and the specifications, the stringent provisions shall govern. Such codes and/or standard referred to shall mean the latest revision, amendments/changes adopted and published by the relevant agencies. In case of any further conflict in this matter the same shall be referred to the Engineer-in-charge, whose decision shall be final and binding.</p> <p>Other internationally acceptable standards shall be accepted, only if, no Indian Standards are existing. However, other standards also will be accepted if the Contractor establishes that the works are meeting the requirements of Indian Standards also.</p> <p>A brief list of Indian Standards applicable to these works is as below:</p> <p>General</p> <table border="1" data-bbox="366 1702 1377 1870"> <tr> <td data-bbox="366 1702 536 1792">IS: 875-I</td><td data-bbox="536 1702 1377 1792">Code of Practice for Design Dead Loads for Building and Structures</td></tr> <tr> <td data-bbox="366 1792 536 1870">IS: 875-II</td><td data-bbox="536 1792 1377 1870">Code of Practice for Design Imposed Loads for Building and Structures</td></tr> </table>	IS: 875-I	Code of Practice for Design Dead Loads for Building and Structures	IS: 875-II	Code of Practice for Design Imposed Loads for Building and Structures	
IS: 875-I	Code of Practice for Design Dead Loads for Building and Structures				
IS: 875-II	Code of Practice for Design Imposed Loads for Building and Structures				

CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS	
	IS: 875-III	Code of practice for design loads (other than earthquake) for buildings and structures.
Foundations		
	IS: 1080	Code of practice for design and construction of shallow foundations in soils (other than raft, ring and shell)
	IS: 1904	Code of practice for structural safety of building foundations
	IS: 2950	Code of practice for design and construction of raft foundations.
	IS: 4091	Code of Practice for Design and Construction of Foundations for Transmission Line Towers and Poles
	IS: 6403	Code of Practice for determination of bearing capacity of shallow foundations
	IS: 8009	Code of Practice for foundation settlement calculations
	IS: 2911	Design & Construction of Pile Foundation - Code of Practice
Concrete Structures		
	IS: 456	Code of practice for plain and Reinforced concrete
	IS: 3370	Code of practice for concrete structures for the storage of liquids.
	IS: 3414	Code of Practice for design and installation of joints in buildings
	IS: 5525	Recommendation for detailing of reinforced concrete works
	IS: 6313	Code of practice for anti-termite measures in buildings
	IS: 13920	Ductile detailing of Reinforced Concrete Structures subjected to Seismic forces
	IS: 1904	Code of practice for design and construction of foundations in soils general requirements
Steel Structures		
	IS: 800	Code of practice for use of structural steel in general building construction
	IS: 801	Code of practice for use of cold-formed light gauge steel structure members
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CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS	
	IS: 802	Code of Practice for use of Structural Steel in over Head Transmission Line Towers.
	IS: 806	Code of practice for use of steel tubes in general building construction.
	IS: 808	Dimensions for hot rolled steel beam, column channel and angle section
	IS: 811	Specification for Cold Formed Light Gauge Structural Steel Sections
	IS: 813	Scheme of symbols for welding
	IS: 1079	Hot Rolled carbon Steel Sheet and Strip - Specification
	IS: 2062	Hot Rolled Medium and High Tensile Structural Steel - Specification
	IS: 4923	Hollow steel sections for structural use.
	IS 1161	Steel tubes for structural purpose
	IS: 2721	Galvanized steel chain link fence fabric - Specification
Painting and Coating		
	IS: 4736	Hot-dip zinc coatings on mild steel tubes
	IS: 4759	Hot-dip zinc coatings on structural steel and other allied products – Specification
	IS: 1868	Anodic coatings on aluminum and its alloys
	IS 2395-I	Painting of Concrete, Masonry and Plaster Surfaces - Code of: Operations and Workmanship
	IS 2395-II	Code of practice for painting concrete, masonry and plaster surfaces: Schedule
	IS 1477-I	Code of Practice for Painting of Ferrous Metals in Buildings: Pre-treatment
	IS: 1477-II	Code of practice for painting of ferrous metals in buildings: Painting
Water supply and sanitary		
	IS: 1239	Mild steel tubes and tubulars and other wrought steel fittings
	IS: 1172	Code of basic requirements for water supply, drainage and sanitation
	IS: 1742	Code of Practice for building drainage
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CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS	
	IS: 2527	Code of practice for fixing rainwater gutters and down pipes for roof drainage.
Miscellaneous		
	IS: 15778	Chlorinated polyvinyl chloride pipes for potable hot and cold water distribution supplies
	IS: 16088	Chlorinated polyvinyl chloride pipes for automatic sprinkler fire extinguishing system
	IS: 10124	Fabricated PVC fittings for potable water supplies
	IS: 4985	Un-plasticized PVC pipes for potable water supplies
	IS: 13592	Un-plasticized Polyvinyl Chloride (PVC-U) Pipes for Soil and Waste Discharge System Inside and Outside Buildings Including Ventilation and Rainwater System
	IS: 12818	Un-plasticized polyvinyl chloride (PVC-U)screen and casing pipes for bore/tubewell
	IS: 2470	Code of Practice for installation of septic tanks
	IS: 1905	Code of Practice for structural use of un-reinforced masonry
	IS: 3067	Code of Practice for general design details and preparatory works for damp proofing and water proofing of buildings
	SP: 6	Handbook for structural engineers (all parts)
	SP: 7	National Building Code of India
	SP: 16	Design Aids for reinforced concrete to IS:456
	SP: 20	Handbook on masonry design and construction
	SP: 22	Explanatory handbook on codes for earthquake engineering
	SP: 24	Explanatory handbook on Indian Standard Code of Practice for plain and reinforced concrete
	SP: 25	Handbook on causes and prevention of cracks in buildings
	SP: 32	Handbook on functional requirements of industrial buildings
	SP: 34	Handbook of concrete reinforcement & detailing
	IRC: 37	Guidelines for design of flexible pavements
	IRC: 42	Guidelines on Road Drainage
	IRC: 58	Guidelines for the design of rigid pavements for highways
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CLAUSE NO.	TECHNICAL AND GENERAL SPECIFICATIONS			
	<p>IRC: 73 Geometric design of roads</p>			
APPENDIX-D1				
GENERAL DESIGN DATA				
<p>A. VICINITY MAP: Refer Tender drawing No: 5746-004-POC-A-001</p> <p>B. WIND: Basic wind speed shall as per Cl. 2.0 of Chapter A-2.</p> <p>C. SEISMIC shall be as per IS: 1893 (Part-1)</p> <p>D. Corrosive category: C5</p>				



GENERAL CONDITIONS OF CONTRACT

2019

ಭಾರತ್ ಹೆಚ್‌ಎಲ್ ಎಲೆಕ್ಟ್ರಿಕ್ಸ್ ಲಿಮಿಟೆಡ್, ವಿದ್ಯುನ್‌ಾಣ ವಿಭಾಗ, ಬೆಂಗಳೂರು

ಭಾರತ ಹೆಚ್ ಇಲೆಕ್ಟ್ರಿಕ್ಸ್ ಲಿಮಿಟೆಡ್, ಇಲೆಕ್ಟ್ರಾನಿಕ್ಸ್ ಡಿವಿಜನ್, ಬೆಂಗಳೂರು

Bharat Heavy Electricals Limited, Electronics Division, Bengaluru

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CHAPTER -1

1. GENERAL INSTRUCTION TO TENDERERS

1.1. DESPATCH INSTRUCTION

i) The General Conditions of Contract form part of the Tender specifications. All pages of the tender documents shall be duly signed, stamped and submitted along with the offer in token of complete acceptance thereof. The information furnished shall be complete by itself. The tenderer is required to furnish all the details and other documents as required in the following pages

ii) Tenderers are advised to study all the tender documents carefully. Any submission of tender by the tenderer shall be deemed to have been done after careful study and examination of the tender documents and with the full understanding of the implications thereof. Should the tenderers have any doubt about the meaning of any portion of the Tender Specification or find discrepancies or omissions in the drawings or the tender documents issued are incomplete or shall require clarification on any aspects, the scope of work etc., he shall contact the authority inviting the tender well in time (so as not to affect last date of submission) for clarification before the submission of the tender. Tenderer's request for clarifications shall be with reference to Sections and Clause numbers given in the tender documents. The tender specifications and terms and conditions shall be deemed to have been accepted by the tenderer in the offer. Pre requirements and conditions shall be liable for rejection.

iii) Integrity pact (IP): If NIT calls for Integrity Pact, the same shall be duly signed & stamped by the authorised signatory & submitted along with tender document.

1.2. SUBMISSION OF TENDERS

1.2.1 *The tenderers must submit their tenders as per instructions in the NIT*

1.2.2 *BHEL takes no responsibility for delay, loss or non-receipt of tenders sent by post/courier. The tenders received after the specified time of their submission are treated as 'Late Tenders' and shall not be considered under any circumstances. Offers received by Fax/Email/Internet shall be considered as per terms of NIT.*

1.2.3 *Tenders shall be opened by authorised Officer of BHEL at his office at the time and date as specified in the NIT, in the presence of such of those tenderers or their authorised representatives who may be present*

1.2.4 Tenderers whose bids are found techno commercially qualified shall be informed the date and time of opening of the Price Bids and such Tenderers may depute their representatives to witness the opening of the price bids. BHEL's decision in this regard shall be final and binding.

1.2.5 Before submission of Offer, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour, means of transport and access to Site, accommodation, etc. No claim will be entertained later on the grounds of lack of knowledge of any of these conditions.

1.3. LANGUAGE

1.3.1 The tenderer shall quote the rates in English language and international numerals. These rates shall be entered in figures as well as in words. For the purpose of the tenders, the metric system of units shall be used.

1.3.2 All entries in the tender shall either be typed or written legibly in ink. Erasing and over-writing is not permitted and may render such tenders liable for rejection. All cancellations and insertions shall be duly attested by the tenderer.

1.4 PRICE DISCREPANCY:

1.4.1 Conventional (Manual) Price Bid opening:

i) If, in the price structure quoted for the required goods/services/works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of BHEL there is obvious misplacement of decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly

ii) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected;

iii) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (i) and (ii) above.

iv) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of BHEL, the bid is liable to be ignored.

v) In case of lump sum price, if there is any difference between the amount in figures and in words, the amount quoted by the bidder in words shall be taken as correct.

vi) In case of omission in quoting any rate for one or more items, the evaluation shall be done considering the highest quoted rate obtained against the respective items by other tenderers for the subject tender. If the tenderer becomes L-1, the notional rates for the omission items shall be the lowest rates quoted for the respective items by the other tenderers against the respective omission items for the subject job and the 'Total quoted price (loaded for omissions)' shall be arrived at. However the overall price remaining the same as quoted originally, the rates for all the items in the 'Total quoted price (loaded for omissions)' shall be reduced item wise in proportion to the ratio of 'Original' total price and the 'Total quoted price (loaded for omissions)'.

1.4.2 Reverse Auction: In case of Reverse Auction, the successful bidder shall undertake to execute the work as per overall price offered by him during the Reverse Auction process. In case of omission of rates, the procedure shall be as per 'Guidelines for Reverse Auction' enclosed.

- i) Offers from tenderers who are under suspension (banned) by any Unit/Region/Division of BHEL shall not be considered.
- ii) Offers from tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt of India shall not be considered.

1.5. EVALUATION OF BIDS

i) Technical Bids submitted by the tenderer will be opened first and evaluated for fulfilling the Pre-Qualification criteria and other conditions in NIT/Tender documents, based on documentary evidences submitted along with the offer, BHEL reserves the right to ask for proofs/documents, clarification in relation to Technical/commercial data during tender evaluation

ii) Price Bids of shortlisted bidders shall only be opened either through the conventional price bid opening or through electronic Reverse Auction, at the discretion of BHEL

iii) Price Bids of unqualified bidders shall not be opened. Reasons for rejection shall be intimated to the vendor before the opening of Price bid.

1.6. DATA TO BE ENCLOSED

The following information in full shall be furnished by the tenderer. Non-submission of this information may lead to rejection of the offer.

i) INCOME TAX PERMANENT ACCOUNT NUMBER, GSTIN, SAC, HSN Certified copies of PAN, GSTIN shall be furnished along with tender. The names, addresses and contact information of the Directors/Partners shall be furnished along with the offer.

ii) An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor.

iii) IN CASE OF INDIVIDUAL TENDERER:

His / her full name, address, PAN, GSTIN and place & nature of business to be furnished.

iv) IN CASE OF PARTNERSHIP FIRM

The names of all the partners and their addresses, a copy of the partnership deed/instrument of partnership shall be enclosed.

v) IN CASE OF COMPANIES:

Date and place of registration including date of commencement certificate in case of Public Companies (certified copies of Memorandum and articles of Association are also to be furnished). Nature of business carried on by the Company and the provisions of the Memorandum relating thereof.

1.7. AUTHORISATION AND ATTESTATION

Tenders shall be signed by a person duly authorised/empowered to do so. An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor shall be submitted along with the tenders

1.8. EARNEST MONEY DEPOSIT

1.8.1 Every tender must be accompanied by the prescribed amount of Earnest Money Deposit (EMD) in the manner described herein.

The EMD may be accepted only in the following forms:

- (i) Electronic Fund Transfer credited in BHEL account (before tender opening)*
- (ii) Banker's cheque/ Pay order/ Demand draft, in favor of BHEL (along with offer) In case total EMD amount is more than Rs 20 Lakh, the amount in excess of Rs 20 lakh maybe accepted in the form of Bank Guarantee from scheduled bank. The Bank Guarantee in such cases shall be valid for at-least six months.*
- (iii) Through SBI collect (before tender opening)*
- (iv) No other form of EMD remittance shall be acceptable to BHEL*

1.8.2 EMD by the bidder will be forfeited as per Tender Documents if

- i) After opening the tender and within the offer validity period, the tenderer revokes his/her tender or makes any modification in his tender which is not acceptable to BHEL.*
- ii) The Contractor fails to deposit the required Security deposit or commence the work within the period as per LOI/ Contract.*
- iii) EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged in derailing the tender process by unlawful means*

1.8.3 EMD shall not carry any interest.

1.8.4 In the case of unsuccessful bidders, the Earnest Money will be refunded to them within a reasonable time after acceptance of award by successful tenderer.

1.8.5 EMD of successful tenderer will be converted as part of Security Deposit

1.9. SECURITY DEPOSIT

The total amount of Security Deposit will be 5% of the contract value (including all applicable taxes) EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.

1.9.1 Modes of Security deposit:

The balance amount to make up the required Security Deposit of 5% of the contract value may be accepted in the following forms:

- i) Cash (as permissible under the extant Income Tax Act)
- ii) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL
- iii) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL
- iv) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL)
- v) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL) (Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)
- vi) 50% of the required Security Deposit, including the EMD, should be paid before start of the work. Balance of the Security Deposit can be collected by deducting 10% of the gross amount progressively from each of the running bills of the Contractor till the total amount of the required Security Deposit is collected. If the value of work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor. Security Deposit shall be released to the Contractor upon fulfilment of contractual obligations as per terms of the contract.

1.9.2 The Security Deposit shall not carry any interest.

1.9.3 The validity of Bank Guarantees towards Security Deposit shall be initially up to the completion period as stipulated in the Letter of Intent/Award (plus maintenance period if applicable), and 03 months claim period. The same shall be kept valid by proper renewal till the acceptance of Final Bills of the Contractor, by BHEL

1.9.4 BHEL reserves the right of forfeiture of Security Deposit in addition to other claims and penalties in the event of the Contractor's failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit against any claims of other contracts with BHEL.

1.10. REFUND OF SECURITY DEPOSIT

50% of the security deposit may be refunded on completion of the work after payment of the final bill and the balance 50% of the security deposit is refunded only after the expiry of the maintenance period from date of completion of work as stipulated in the contract concerned.

1.10.1 DEFECTS LIABILITY PERIOD:

The contractor shall be responsible to make good and remedy at his own expenses within such period as may be stipulated by the Engineer-in-charge, any defect which may develop or may be noticed before the expiry of the maintenance period of six months or as stipulated in NIT hereto from the certified date of completion and intimation of which has been sent to the contractor within seven days of the expiry of the said period by a letter sent by hand delivery or by registered post or Email. If contractor fails to attend to the above, defect will be rectified at contractor's risk & cost and same will be deducted from the security deposit/payable amounts available with BHEL.

1.11. BANK GUARANTEES

Where ever Bank Guarantees are to be furnished/submitted by the contractor, the following shall be complied with

- i) Bank Guarantees shall be from Scheduled Banks / Public Financial Institutions as defined in the Companies Act.*
- ii) The Bank Guarantees shall be as per prescribed BHEL formats.*
- iii) It is the responsibility of the bidder to get the Bank Guarantees revalidated/extended for the required period (subject to a minimum period of six months), as per the advice of BHEL. BHEL shall not be liable for issue of any reminders regarding expiry of the Bank Guarantees.*
- iv) In case extension/further extensions of any Bank Guarantees are not required, the bidders shall ensure that the same is explicitly endorsed by BHEL*
- v) In case the Bank Guarantees are not extended before the expiry date, BHEL reserves the right to invoke the same by informing the concerned Bank in writing, without any advance notice/communication to the concerned bidder.*
- vi) Bidders to note that any corrections to Bank Guarantees shall be done by the issuing Bank, only through an amendment in an appropriate non judicial stamp paper.*
- vii) The Original Bank Guarantee shall be sent directly by the Bank to BHEL under Registered Post (Acknowledgement Due).*

1.12. VALIDITY OF OFFER

The rates in the Tender shall be kept open for acceptance for a minimum period of Ninety (90) DAYS from latest due date of offer submission (including extension, if any). In case BHEL calls for negotiations, such negotiations shall not amount to cancellation or withdrawal of the original offer which shall be binding on the tenderers.

1.13 EXECUTION OF CONTRACT AGREEMENT

The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent by BHEL. The Tenderer shall submit an unqualified acceptance to the Letter of Intent/Award within the period stipulated therein.

The successful tenderer shall be required to execute an agreement in the prescribed form, with BHEL, within fifteen days (15 days) after the acceptance of the Letter of Intent/Award, and in any case before releasing the first running bill. The contract agreement shall be signed by a person duly authorized/empowered by the tenderer. The expenses for preparation of agreement document shall be borne by Tenderer.

1.14. REJECTION OF TENDER AND OTHER CONDITIONS

1.14.1 The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever:-

- a. To reject any or all of the tenders.*
- b. To split up the work amongst two or more tenderers as per NIT*
- c. To award the work in part if specified in NIT*
- d. In case of either of the contingencies stated in (b) and (c) above, the time for completion as stipulated in the tender shall be applicable.*

1.14.2 Conditional tenders, unsolicited tenders, tenders which are incomplete or not in the form specified or defective or have been materially altered or not in accordance with the tender conditions, specifications etc., are liable to be rejected.

1.14.3 Tenders are liable to be rejected in case of unsatisfactory performance of the tenderer with BHEL, or tenderer under suspension (hold/banning /delisted) by any unit / region / division of BHEL or tenderers who do not comply with the latest guidelines of Ministry/Commissions of Govt of India. BHEL reserves the right to reject a bidder in case it is observed that they are overloaded and may not be in a position to execute this job. The decision of BHEL will be final in this regard.

1.14.4 If a tenderer who is a proprietor expires after the submission of his tender or after the acceptance of his tender, BHEL may at their discretion, cancel such tender. If a partner of a firm expires after the submission of tender or after the acceptance of the tender, BHEL may then cancel such tender at their discretion, unless the firm retains its character.

1.14.5 BHEL will not be bound by any Power of Attorney granted by changes in the composition of the firm made subsequent to the execution of the contract. They may, however, recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.

1.14.6 If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract if awarded and forfeit the Earnest Money/Security Deposit/any other money due.

1.14.7 Canvassing in any form in connection with the tenders submitted by the Tenderer shall make his offer liable to rejection.

1.14.8 In case the Proprietor, Partner or Director of the Company/Firm submitting the Tender, has any relative or relation employed in BHEL, the authority inviting the Tender shall be informed, along with the Offer. Failing to do so, BHEL may, at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.

1.14.9 The successful tenderer should not sub-contract part or complete work detailed in the tender specification undertaken by him without written permission of BHEL's Construction Manager/Site Incharge. The tenderer is solely responsible to BHEL for the work awarded to him.

1.14.10 The Tender submitted by a techno commercially qualified tenderer shall become the property of BHEL who shall be under no obligation to return the same to the bidder. However unopened price bids and late tenders shall be returned to the bidders after finalization of contract.

1.14.11 Unsolicited discount received after the due date and time of Bid Submission shall not be considered for evaluation. However, if the party who has submitted the unsolicited discount/rebate becomes the L-I party, then the awarded price i.e contract value shall be worked out after considering the discount so offered.

1.14.12 BHEL shall not be liable for any expenses incurred by the bidder in the preparation of the tender irrespective of whether the tender is accepted or not.

1.15 BHEL Fraud Prevention Policy :

The bidder along with its associate/ collaborators/sub-contractors/ Sub-Vendors/ Consultants/service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice. Fraud prevention policy and list of Nodal officers shall be hosted on BHEL website, vendor portals of Units/Regions Internet.

CHAPTER-2

2.1 DEFINITION: The following terms shall have the meaning hereby assigned to them except where the context otherwise requires

- i) *BHEL shall mean Bharat Heavy Electricals Limited, a company registered under Companies Act 1956, with its Registered Office at BHEL HOUSE, SIRI FORT, NEW DELHI – 110 049, or its Authorised Officers or its Site Engineers or other employees authorised to deal with any matters with which these persons are concerned on its behalf.*
- ii) *“EXECUTIVE DIRECTOR” or ‘GROUP GENERAL MANAGER’ or “GENERAL MANAGER (Incharge)” or “GENERAL MANAGER” shall mean the Officer in Electronics Division, Mysore road, Bengaluru-560026*
- iii) *“COMPETENT AUTHORITY” shall mean Executive Director or Group General Manager or General Manager (In-charge) or General Manager or BHEL Officers who are empowered to act on behalf of the Executive Director or General Manager (In-charge) or General Manager of BHEL.*
- iv) *“ENGINEER” or “ENGINEER IN CHARGE” shall mean an Officer of BHEL as may be duly appointed and authorized by BHEL to act as “Engineer” on his behalf for the purpose of the Contract, to perform the duty set forth in this General Conditions of Contract and other Contract documents. The term also includes ‘CONSTRUCTION MANAGER’ or ‘SITE INCHARGE’ as well as Officers*
- v) *“SITE” shall mean the places or place at which the plants/equipment are to be erected and services are to be performed as per the specification of this Tender.*
- vi) *“CLIENT OF BHEL” or “CUSTOMER” shall mean the project authorities with whom BHEL has entered into a contract for supply of equipment or provision of services.*
- vii) *“CONTRACTOR” shall mean the successful Bidder/Tenderer who is awarded the Contract and shall include the Contractor’s successors, heirs, executors, administrators and permitted assigns.*

viii) "CONTRACT" or "CONTRACT DOCUMENT" shall mean and include the Work Order, Contract Agreement, the accepted appendices of Rates, Schedules, Quantities if any, General Conditions of Contract, Special Conditions of Contract, Instructions to the Tenderers, Drawings, Technical Specifications, the Special Specifications if any, the Tender documents, subsequent amendments mutually agreed upon and the Letter of Intent/Acceptance issued by BHEL. Any conditions or terms stipulated by the contractor in the tender documents or subsequent letters shall not form part of the contract unless, specifically accepted in writing by BHEL in the Letter of Intent/Award and incorporated in the agreement.

ix) "GENERAL CONDITIONS OF CONTRACT" shall mean the 'Instructions to Tenderers' and 'General Conditions of Contract' pertaining to the work for which above tenders have been called for.

x) "TENDER SPECIFICATION" or "TENDER" or "TENDER DOCUMENTS" shall mean General Conditions, Common Conditions, Special Conditions, Price Bid, Rate Schedule, Technical Specifications, Appendices, Annexures, Corrigendum's, Amendments, Forms, procedures, Site information, etc and drawings/documents pertaining to the work for which the tenderers are required to submit their offers. Individual specification number will be assigned to each Tender Specification.

xi) "LETTER OF INTENT" shall mean the intimation by a Post/Fax/email to the tenderer that the tender has been accepted in accordance with provisions contained in the letter. The responsibility of the contractor commences from the date of issue of this letter and all terms and conditions of the contract are applicable from this date.

xii) "COMPLETION TIME" shall mean the period by 'date/month' specified in the 'Letter of Intent/Award' or date mutually agreed upon for handing over of the intended scope of work, the erected equipment/plant which are found acceptable by the Engineer, being of required standard and conforming to the specifications of the Contract.

xiii) "PLANT" shall mean and connote the entire assembly of the plant and equipment's covered by the contract.

xiv) "EQUIPMENT" shall mean equipment, machineries, materials, structural, electrical and other components of the plant covered by the contract.

xv) "TESTS" shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL, in order to ascertain the quality, workmanship, performance and efficiency of the contractor or part thereof.

xvi) "APPROVED", "DIRECTED" or "INSTRUCTED" shall mean approved, directed or instructed by BHEL.

xvii) "WORK or CONTRACT WORK" shall mean and include supply of all categories of labour, specified consumables, tools and tackles and Plants required for complete and satisfactory site transportation, handling, stacking, storing, erecting, testing and commissioning of the equipment's to the entire satisfaction of BHEL.

xviii) "SINGULAR AND PLURALS ETC" words carrying singular number shall also include plural and vice versa, where the context so requires. Words imparting the masculine Gender shall be taken to include the feminine Gender and words imparting persons shall include any Company or Associations or Body of Individuals, whether incorporated or not.

xix) "HEADING" – The heading in these General Conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken as instructions thereof or of the contract.

xx) "MONTH" shall mean calendar month unless otherwise specified in the Tender.

xxi) Day' or 'Days' unless herein otherwise expressly defined shall mean calendar day or days of twenty four (24) hours each. A week shall mean continuous period of seven (7) days.

xxii) "COMMISSIONING" shall mean the synchronization testing and achieving functional operation of the Equipment with associated system after all initial adjustments, trials, cleaning, re-assembly required at site if any, have been completed and Equipment with associated system is ready for taking into service.

xxiii) "WRITING" shall include any manuscript type written or hand written or printed statement or electronically transmitted messages, under the signature or seal or transmittal of BHEL.

xxiv) "TEMPORARY WORK" shall mean all temporary works for every kind required in or for the execution, completion, maintenance of the work.

xxv) 'CONTRACT PRICE' or 'CONTRACT VALUE' shall mean the sum including applicable taxes mentioned in the LOI/LOA/Contract Agreement subject to such additions thereto or deductions there from as may be made under provisions hereinafter contained

xxvi) "COMMENCEMENT DATE" or "START DATE" shall mean the commencement/start of work at Site as per terms defined in the Tender

xxvii) "SHORT CLOSING" or "FORE CLOSING" of Contract shall mean the premature closing of Contract, for reasons not attributable to the contractor and mutually agreed between BHEL and the contractor

xxviii) "TERMINATION" of Contract shall mean the pre mature closing of contract due to reasons as mentioned in the contract

2.2 LAW GOVERNING THE CONTRACT AND COURT JURISDICTION

The contract shall be governed by the Law for the time being in force in the Republic of India. The Civil Court having original Civil Jurisdiction at Bengaluru, shall alone have exclusive jurisdiction in regard to all claims in respect of the Contract. No other Civil Court shall have jurisdiction in case of any dispute, under this contract

2.3 ISSUE OF NOTICE

2.3.1 Service of notice on contractor: Any notice to be given to the Contractor under the terms of the contract shall be served by sending the same by Registered Post / Speed Post / FAX / Email to or leaving the same at the Contractor's last known address of the principal place of business (or in the event of the contractor being a company, to or at its Registered Office). In case of change of address, the notice shall be served at changed address as notified in writing by the Contractor to BHEL. Such posting or leaving of the notice shall be deemed to be good service of such notice and the time mentioned to the condition for doing any act after notice shall be reckoned from the date so mentioned in such notice.

2.3.2 Service of notice on BHEL Any notice to be given to BHEL in-charge under the terms of the Contract shall be served by sending the same by post or Email or leaving the same at BHEL address or changed address as notified in writing by BHEL to the Contractor.

2.4 USE OF LAND

No land belonging to BHEL or their Customer under temporary possession of BHEL shall be occupied by the contractor without written permission of BHEL.

2.4.1 STORES AND MATERIALS:

The contractor shall, at his own expense, supply all stores and materials required for the contract, other than those which may be provided by BHEL at the rates detailed therein subject to their availability at the place of issue indicated therein. All stores and materials to be supplied by the Contractor shall be of the best kind as described in the Specifications and the Contractor shall, if required by the Engineer -in- charge furnish him with proof to his satisfaction that the store and materials so comply with the specifications.

The contractor shall, at his own expense and without delay, supply samples of stores and materials proposed to be used in the execution of the work for the approval of the Engineer-in-charge, who may reject all stores and materials not corresponding either in quality or character to the approved samples.

In the case of stores provided by BHEL, the Contractor shall bear the cost of loading, transporting to site, unloading, storing under cover as required, assembling & jointing the several parts together as necessary and incorporating & fixing these stores & materials in the work, including all preparatory work of whatever description that may be required, and closing, preparing, loading and returning empty cases or containers to the place of issue without any extra charges.

Contractor is responsible for safe & secure storage of above material.

2.4.2 PATENT RIGHTS:

The contractor shall fully indemnify BHEL, or the agent, servant, or employee of BHEL, against any action, claim or proceeding relating to infringement or the use of any patent or design or any alleged patent or design rights, and shall pay any royalties which may be payable in respect of any article/ or part thereof included in the contract.

In the event of any claims being made or action brought against BHEL, or any agent, or servant or employee of BHEL., in respect of any of the matters aforesaid, the contractor shall not apply when such increment has taken place in complying with the specific directions issued by the BHEL but the contractor shall pay any royalties payable in respect of any such use.

2.4.3 WATER :

The contractor shall allow in his tender and provide at his cost all water required for the work or his employees on the work, together with all pipes and fittings or other means that may be necessary or required to ensure a proper and ample supply of water for all purpose connected with the work.

In the event of a provision existing in the Tender documents for supply of water on payment by BHEL, water will be supplied from the BHEL supply System, or other sources at any points fixed by the Site Engineer/ Engineer-in-charge on the site of work. The contractor shall make necessary arrangement for lifting, pumping, carrying or conveying the water as required at his own cost. The levy of water charges to be borne by the Contractor in such case shall be specifically mentioned in the Tender documents.

2.4.4 TEMPORARY WORKSHOPS, STORES ETC :

The Contractor shall, during the progress of the work provide, erect and maintain at his own expense all necessary temporary workshops, store, offices, toilets etc., required for the proper and efficient execution of the work. The planning, siting and erection of these building shall have the approval of the Engineer-in-charge and the Contractor shall at all times keep them in a clean and sanitized condition to the entire satisfaction of the Engineer-in-charge.

On completion of the work all such temporary buildings shall be cleared and the site restored to its original state in a clean and tidy condition to the entire satisfaction of the Engineer-in-charge.

2.5 COMMENCEMENT OF WORK

2.5.1 Time is essence of contract and is specified in the tender document or in each individual work order.

2.5.2 The contractor shall commence the work within seven(07) days from LOI/work order or as intimated by BHEL and shall proceed with the same with due expedition without delay.

2.5.3 If the contractor fails to start the work within stipulated time as per LOI or as intimated by BHEL, then BHEL at its sole discretion will have the right to cancel the contract. The Earnest Money and/or Security Deposit with BHEL will stand forfeited without any further reference to him without prejudice to any and all of BHEL's other rights and remedies in this regard.

2.5.4 All the work shall be carried out under the direction and to the satisfaction of BHEL.

2.6 MEASUREMENT OF WORK AND MODE OF PAYMENT:

2.6.1 All payments due to the contractors shall be made by electronic mode only, unless otherwise found operationally difficult.

2.6.2 For progress running bill payments: - The Contractor shall present detailed measurement sheets in triplicate, duly indicating all relevant details based on technical documents and connected drawings for work done during the month/period under various categories in line with terms of payment as per contract. The basis of arriving at the quantities, weights shall be relevant documents and drawings released by BHEL. These measurement sheets shall be prepared jointly with BHEL Engineers and signed by both the parties.

2.6.3 These measurement sheets will be checked by BHEL Engineer and quantities and percentage eligible for payment under various groups shall be decided by BHEL Engineer. The abstract of quantities and percentage so arrived at based on the terms of payment shall be entered in Measurement Book and signed by both the parties.

2.6.4 Based on the above quantities, contractor shall prepare the bills in prescribed format and work out the financial value. These will be entered in Measurement Book and signed by both the parties. Payment shall be made by BHEL after effecting the recoveries due from the contractor.

2.6.5 All recoveries due from the contractor for the month/period shall be effected in full from the corresponding running bills unless specific approval from the competent authorities is obtained to the contrary.

2.6.6 Measurement shall be restricted to that portion of work for which it is required to ascertain the financial liability of BHEL under this contract.

2.6.7 The measurement shall be taken jointly by persons duly authorized on the part of BHEL and by the Contractor.

2.6.8 The Contractor shall bear the expenditure involved if any, in making the measurements and testing of materials to be used/used in the work. The contractor shall, without extra charges, provide all the assistance with appliances and other things necessary for measurement.

2.6.9 If at any time due to any reason whatsoever, it becomes necessary to re-measure the work done in full or in part, the expenses towards such re measurements shall be borne by the contractor unless such re measurements are warranted solely for reasons not attributable to contractor.

2.6.10 Passing of bills covered by such measurements does not amount to acceptance of the completion of the work measured. Any left out work has to be completed, if pointed out at a later date by BHEL.

2.6.11 Final measurement bill shall be prepared in the final bill format prescribed for the purpose based on the certificate issued by BHEL Engineer that entire works as stipulated in tender specification has been completed in all respects to the entire satisfaction of BHEL. Contractor shall give unqualified "No Claim" Certificate. All the tools and tackles loaned to him should be returned in satisfactory condition to BHEL. The abstract of final quantities and financial values shall also be entered in the Measurement Books and signed by both parties to the contract. The Final Bill shall be prepared and paid within a reasonable time after completion of work.

2.7 RIGHTS OF BHEL

BHEL reserves the following rights in respect of this contract during the original contract period or its extensions if any, as per the provisions of the contract, without entitling the contractor for any compensation.

2.7.1 To withdraw any portion of work and/or to restrict/alter quantum of work as indicated in the contract during the progress of work and get it done through other agencies to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergent reasons/ BHEL's obligation to its customer.

2.7.2 To terminate the contract or get any part of the work done through other agency or deploy BHEL's own/hired/otherwise arranged resources , at the risk and cost of the contractor after due notice of a period of two weeks by BHEL, in the event of:-

- i) Contractor's continued poor progress*
- ii) Withdrawal from or abandonment of the work before completion of the work*
- iii) Contractor's inability to progress the work for completion as stipulated in the contract*
- iv) Poor quality of work*
- v) Corrupt act of Contractor*
- vi) Insolvency of the Contractor*

vii) Persistent disregard to the instructions of BHEL

viii) Assignment, transfer, sub-letting of contract without BHEL's written permission

ix) Non fulfillment of any contractual obligations / non-compliance of statutory requirements

x) In the opinion of BHEL, the contractor is overloaded and is not in a position to execute the job as per required schedule

2.7.3 To meet the expenses including BHEL overheads of 35% & Liquidated damage/penalties arising out of "Risk & Cost" as explained above under Sl.No. 2.7.2. BHEL shall recover the amount from any money due from Contractor, from any money due to the Contractor including Security Deposit or by forfeiting any T&P or material of the contractor under this contract or any other contract of BHEL or by any other means or any combination thereof

2.7.4 To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contract with their customer are terminated for any reason, as per mutual agreement.

2.7.5 To effect recovery from any amounts due to the contractor under this or any other contract or in any other form, the moneys BHEL is statutorily forced to pay to anybody, due to contractor's failure to fulfill any of his obligations. BHEL shall levy overheads of 35% on all such payments.

2.7.6 While every endeavor will be made by BHEL to this end, they cannot guarantee uninterrupted work due to conditions beyond their control. The Contractor will not be normally entitled for any compensation/extra payment on this account unless otherwise specified elsewhere in the contract.

2.7.7 In case the execution of works comes to a complete halt or reaches a stage wherein worthwhile works cannot be executed and there is no possibility of commencement of work for a period of not less than two months, due to reasons not attributable to the contractor and other than Force Majeure conditions, BHEL may consider permitting the contractor to de mobilize forthwith and re mobilize at an agreed future date. Cost of such demobilization/remobilization shall be mutually agreed. ORC (Over run Charges) in such cases shall not be applicable for the period between the period of demobilization and re mobilisation. The duration of contract/time extension shall accordingly get modified suitably. In case of any conflict, BHEL decision in this regard shall be final and binding on the contractor.

2.7.8 In the unforeseen event of inordinate delay in receipt of materials, drawings, fronts, etc, due to which inordinate discontinuity of work is anticipated, BHEL at its discretion may consider contractor's request to short close the contract, provided that the balance works are minor vis a vis the scope of work envisaged as per the contract. At the point of requesting for

short closure, contractor shall establish that he has completed all works possible of completion and he is not able to proceed with the balance works due to constraints beyond his control. In such a case, the estimated value of the unexecuted portion of work as mutually agreed, shall however be reduced from the final contract value.

2.7.9 LIQUIDATED DAMAGES/PENALTY

COMPENSATION FOR DELAY:

If the contractor fails to maintain the required progress in terms of condition 2.10 or to complete the work and clear the site on or before the contracted or extended the period of completion, he shall, without prejudice to any other right or remedy of the BHEL on account of such breach, pay as agreed compensation an amount calculated as stipulated below

For unfinished anticipated value of work where finished portion is fit for use

Rate of compensation as follows:

- Completion period (as originally stipulated) not exceeding 6 months.@ 1 percent per week
- Completion period (as originally stipulated) Exceeding 6 months and not exceeding 2 years...@ 0.5 percent per week
- Completion period (as originally stipulated) exceeding 2 years..... @ 0.25 percent per week

Provided always that the total amount of compensation for delay to be paid under condition shall not exceed the under noted percentage of the anticipated contract value

- Completion period (as originally stipulated) not exceeding 6 months.@ 10 percent of anticipated value of work
- Completion period (as originally stipulated) Exceeding 6 months and not exceeding 2 years...@ 7.5 percent of anticipated value of work
- Completion period (as originally stipulated) Exceeding 2 years.....@ 5 percent of anticipated value of work

The amount of compensation may be adjusted or set off against any sum payable to the Contractor under this or any other contract with the BHEL.

2.7.10 POST TECHNICAL AUDIT OF WORK AND BILLS: BHEL reserve the right to carry out a post-payment audit and technical examination of the work and final bill including all supporting vouchers, abstract etc., and to enforce recovery of any sums becoming due as a result thereof in the manner provided in the proceeding sub-paragraph's provided however that no such recovery shall be enforced after three years of passing the final bill

2.8 RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS ETC.

The following are the responsibilities of the contractor in respect of observance of local laws, employment of personnel, payment of taxes etc. The subcontractor shall fully indemnify BHEL against any claims of whatsoever nature arising due to the failure of the contractor in discharging any of his responsibilities hereunder:

2.8.1 The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals and religious and other customs.

2.8.2 The contractor shall comply with all applicable State and Central Laws, Statutory Rules, Maternity act, Regulations etc. such as contract labour(R&A) Act 1970, Minimum wage Act 19748, Payment of wages Act 1936,ESI Act 1948, EPF Act 1952, Employees' compensation Act 1923, Provision of Companies Act 1948 & rules thereof, The interstate Migrant Workmen 1979, The Karnataka Factories Rules 1969, Payment of Bonus Act 1965, Payment of Gratuity Act 1972. Child labour Prohibition act 1986, Karnataka Minimum Wage Act , Prevention of sexual harassment at work place Act 2013, Guidelines/notification related to Safai Karamchari Act , Equal Remuneration Act 1976, The company's instructions as issued from time to time in regard to working hours, wages, leaves, holidays etc. for labour as may be enacted by the Government during the tenure of the Contract and having force or jurisdiction at Site. The Contractor shall also give to the local Governing Body, Police and other relevant Authorities all such notices as may be required by the Law.

The contractor shall produce the following registers and forms:

- *Form XIII- Register of work men employed by contractor(Rule 75)*
- *Form XIV- Employment Card issued by contractor(Rule 76)*
- *Form XVI- Muster Roll (Rule 78(1) (a)(i))*
- *Form XVII- Register of Wages (Rule 78(1) (a)(i))*
- *Form XVIII- Register of wages cum Muster Roll(in case of weekly payment)*
- *Form XIX- Wage slip (Rule 78(b))*
- *Form XX- Register of deduction for damages Or Loss Rule 78(1) (a)(ii))*
- *Form XXI- Register of files Rule 78(1) (a)(ii))*
- *Form XXII- Register of Advance Rule 78(1) (a)(ii))*
- *Form XXIII- Register of Overtime Rule 78(1) (a)(iii))*
- *Form XXIV- Return to be sent by the contractor to the Licensing officer (Rule 82(1))*

2.8.3 The contractor shall obtain independent License under the Contract Labour (Regulations and Abolition Act)as required from the concerned Authorities based on the certificate (Form-V) issued by the Principal Employer/Customer

2.8.4 *The contractor shall pay all taxes, fees, license charges, deposits, duties, tolls, royalties, commission or other charges which may be levied on account of his operations in executing the contract.*

2.8.5 *While BHEL would pay the inspection fees and Registration fees of Boiler & explosive/Electrical Inspectorate, all other arrangements for site visits periodically by the Inspectorate to site, Inspection certificate etc. will have to be made by contractor. However, BHEL will not make any payment to the Inspectorate in connection with contractor's Welders/Electricians qualification tests etc.*

2.8.6 *Contractor shall be responsible for provision of Health and Sanitary arrangements (more particularly described in Contract Labour Regulation & Abolition Act), Safety precautions etc. as may be required for safe and satisfactory execution of contract.*

2.8.7 *The contractor shall be responsible for proper accommodation including adequate medical facilities for personnel employed by him.*

2.8.8 *The contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed by him.*

2.8.9 *The contractor shall ensure that no damage is caused to any person/property of other parties working at site. If any such damage is caused, it is responsibility of the contractor to make good the losses or compensate for the same.*

2.8.10 *All the properties/equipment/components of BHEL/their Client loaned with or without deposit to the contractor in connection with the contract shall remain properties of BHEL/their Client.*

2.8.11 *The contractor shall use such properties for the purpose of execution of this contract. All such properties/equipment/components shall be deemed to be in good condition when received by the contractor unless he notifies within 48 hours to the contrary. The contractor shall return them in good condition as and when required by BHEL/their Client. In case of non-return, loss, damage, repairs etc, the cost thereof as may be fixed by BHEL Engineer will be recovered from the contractor*

2.8.12 *Any delay in completion of works/or non-achievement of periodical targets due to the reasons attributable to the contractor, the same may have to be compensated by the contractor either by increasing manpower and resources or by working extra hours and/or by working more than one shift. All these are to be carried out by the contractor at no extra cost.*

2.8.13 *The contractor shall arrange, coordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises.*

2.8.14 All safety rules and codes applied by the Client/BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards, slings etc. or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents, fire hazards. Due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of Clerical staff, watch and ward, store keepers to take care of equipment/materials and construction tools and tackles shall be posted at site by the contractor till the completion of work under this contract. The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per prescribed standards and practices. Contractor has to ensure the implementation of Health, Safety and Environment (HSE) requirements as per directions given by BHEL/Customer. The contractor has to assist in HSE audit by BHEL/Customer and submit compliance Report. The contractor has to generate and submit record/reports as per HSE plan/activities as per instruction of BHEL/Customer. All tools, plant and equipment brought to the site shall become the property of BHEL and shall not be removed from the site without the prior written approval from BHEL. When the work is finally completed or the Contractor is determined for reasons other than the defaults of the contract, he shall forthwith remove from the site all tools, plants, equipment etc., (other than those as may have been provided by BHEL) and upon such removal, the same shall revert in, and become the property of the contractor.

2.8.15 The contractor will be directly responsible for payment of wages to his workmen on specified date of respective month declared as per applicable Labour Act. A pay roll sheet giving all the payments given to the workers and duly signed by the contractor's representative should be furnished to BHEL site for record purpose.

2.8.16 In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.

2.8.17 Also, no idle charges will be admissible in the event of any stoppage caused in the work resulting in contractor's labour and Tools & Plants being rendered idle due to any reason at any time.

2.8.18 The contractor shall take all reasonable care to protect the materials and work till such time the plant/equipment has been taken over by BHEL or their Client whichever is earlier.

2.8.19 The contractor shall not stop the work or abandon the site for whatsoever reason of dispute, excepting force majeure conditions. All such problems/disputes shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and dealt with accordingly

2.8.20 *The contractor shall keep the area of work clean and shall remove the debris etc. while executing day-to-day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The contractor will also demolish all the hutments, sheds, offices, etc. constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor. If the work is executed in Factory premises, no hutment will be allowed.*

2.8.21 *The contractor shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and/ or as per the instructions of the Engineer.*

2.8.22 *The Contractor to note that some of BHEL's T&Ps/MMDs may not be insured. The Contractor will take necessary precautions and due care to protect the same while in his custody from any damage/ loss till the same is handed over back to BHEL. In case the damage / loss is due to carelessness/ negligence on the part of the contractor, the Contractor is liable to get them repair/ replaced immediately and in case of his failure to do so within a reasonable time, BHEL will reserve the right to recover the loss from the contractor.*

2.8.23 *The contractor shall provide all watchmen necessary, for the protection of the site, the work, the materials, the tools , plant, equipment and anything else lying on the site during the progress of the work. He shall solely be responsible for and shall take all reasonable and proper steps for protecting, securing , lighting and watching all places on or about the work and the site which may be dangerous to any person whom so ever.*

2.8.24 **SITE DRAINAGE:** All water that may accumulate on the site during the process of the work, or in trenches and excavations shall be removed to the entire satisfaction of the Engineer-in-charge and at Contractors expense.

2.8.25 **INSPECTION OF THE WORK:** BHEL Officers concerned with the Contract shall have power at any time to inspect and examine any part of the work and the contractor shall give such facilities as may be required to given for such inspection and examination.

2.8.26 *In case the contractor is required to undertake any work outside the scope of this contract, the rates payable shall be those mutually agreed upon if the item rates are not mentioned in existing contract*

i. For any item of work required to be carried out after the contract has been awarded and which is not covered by Contractors Schedule but is covered by C.P.W.D. schedule of rates the rate payable for such a fresh item will be derived from updated C.P.W.D. schedule of rates by the method of proportion as follows:

- ii. Rate as per estimated updated C.P.W.D DSR and loading tender excess (plus or minus) on pro-rata basis for nearest analogous items. For other items rate as per estimated C.P.W.D DSR and loading tender excess(plus or minus)*
- iii. If rates are not available in C.P.W.D. DSR, deviated item rates will be derived from market rate with 15% profit and overheads.*

2.9 PROGRESS MONITORING, MONTHLY REVIEW AND PERFORMANCE EVALUATION

2.9.1 A detailed plan/programme for completion of the contractual scope of work as per the time schedule given in the contract shall be jointly agreed between BHEL and Contractor, before commencement of work . The above programme shall be supported by month wise deployment of resources viz Manpower, T&P, Consumables, etc. Progress will be reviewed periodically (Daily/Weekly/Monthly) vis a vis this jointly agreed programme. The Contractor shall submit periodical progress reports (Daily/Weekly/Monthly) and other reports/information including manpower, consumables, T&P mobilization etc as desired by BHEL.

2.9.2 Monthly progress review between BHEL and Contractor shall be based on the agreed programme as above, availability of inputs/fronts etc, and constraints if any, as per prescribed formats. Manpower, T&P and consumable reports as per prescribed formats shall be submitted by contractor every month. Release of RA Bills shall be contingent upon certification by BHEL Site Engineer of the availability of the above prescribed formats duly filled in and signed.

2.9.3 The burden of proof that the causes leading to any shortfall is not due to any reasons attributable to the contractor is on the contractor himself. The monthly progress review shall record shortfalls attributable to (i) Contractor, (ii) Force Majeure Conditions, and (iii) BHEL

2.10 TIME OF COMPLETION

2.10.1 Time is essence of the contract. The time schedule shall be as prescribed in the Contract. The time for completion shall be reckoned from the date of commencement of work at Site as certified by BHEL Engineers

2.10.2 The entire work shall be completed by the contractor within the time schedule or within such extended periods of time as may be allowed by BHEL under clause 2.11

2.11 EXTENSION OF TIME FOR COMPLETION

2.11.1 If the completion of work as detailed in the scope of work gets delayed beyond the contract period, the contractor shall request for an extension of the contract and BHEL at its discretion may extend the Contract.

2.11.2 *Based on the monthly reviews jointly signed, the works balance at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to the contractor. Any further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly.*

2.11.3 *However if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty/LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk and cost of contractor.*

2.11.4 *A joint programme shall be drawn for the balance amount of work to be completed during the period of 'Time Extension', along with matching resources (with weightages) to be deployed by the contractor as per specified format. Review of the programme and record of shortfall shall be done every month of the 'Time extension' period in the same manner as is done for the regular contract period.*

2.11.5 *During the period of 'Time extension', contractor shall maintain their resources as per mutually agreed program*

2.11.6 *At the end of total work completion as certified by BHEL Engineer, and upon analysis of the total delay, the portion of time extensions attributable to (i) Contractor, (ii) Force majeure conditions, and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of time extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/levied for the portion of time extensions attributable to contractor and recoverable from the dues payable to the contractor.*

2.12 OVERRUN COMPENSATION (THIS CLAUSE IS NOT APPLICABLE IN BHEL FACTORY & TOWNSHIP PREMISES)

2.12.1 *Over Run Compensation (ORC) is payable by way of rate revisions for periods beyond original, contract period subject to the following terms and conditions.*

2.12.2 *Rates shall be increased by 10% for the first twelve months of one or more extensions beyond original contract period. For the next twelve months of further extensions if any, rates shall be increased as above by 10% over the previous twelve months, and similarly for each subsequent twelve months extension.*

2.12.3 Should there be any 'Time extension' for reasons attributable only to the contractor, then the work shall be executed by the contractor at the rates applicable for the period the work was planned

2.12.4 Payment of ORC shall be regulated as follows:

i) Contractor is entitled to Over Run Compensation (ORC) only for the portion of backlog attributable to BHEL.

ii) 50% of the compensation is allocated for deployment of resources agreed as per the joint programme drawn vide 2.11.4. Payment shall however be based on the actual deployment of resources for the month as certified by BHEL, as per weightages assigned therein

iii) 50% of the compensation, is allocated for achieving of planned progress agreed as per the joint programme drawn vide 2.11.4. Payment shall be on pro rata basis for actual achieved quantities

iv) Total Over Run Compensation shall be limited to 10% of the executed contract value as certified in Final Bill. For this purpose executed contract value excludes PVC, ORC, Supplementary/Additional Items and Extra Works done on Man-day rate basis

2.12.5 Contractor shall not be entitled for any Over Run Compensation (ORC) for the portion of backlog attributable to the contractor. Such works shall be executed at the rates applicable for the period the work was planned

2.13 QUANTITY VARIATION

2.13.1 The quoted rates shall remain firm irrespective of any variations in the individual quantities.

2.14 EXTRA WORKS

2.14.1 All rectifications/modifications, revamping, and reworks required for any reasons not attributable to the contractor, or needed due to any change in deviation from drawings and design of equipment, operation/maintenance requirements, mismatching, or due to damages in transit, storage and erection/commissioning, and other allied works which are not very specifically indicated in the drawings, but are found essential for satisfactory completion of the work, will be considered as extra works.

2.14.2 Extra works arising on account of the contractor's fault, irrespective of time consumed in rectification of the damage/loss, will have to be carried out by the contractor free of cost. Under such circumstances, any material and consumable required for this purpose will also have to be arranged by the contractor at his cost.

2.14.3 All the extra work should be carried out by a separately identifiable gang, without affecting routine activities. Daily log sheets in the pro-forma prescribed by BHEL should be maintained and shall be signed by the contractor's representative and BHEL engineer. No claim for extra work will be considered/entertained in the absence of the said supporting documents i.e. daily log sheets. Signing of log sheets by BHEL engineer does not necessarily mean the acceptance of such works as extra works.

2.14.4 BHEL retains the right to award or not to award any of the major repair/ rework/modification/rectification/fabrication works to the contractor, at their discretion without assigning any reason for the same

2.14.5 After eligibility of extra works is established and finally accepted by BHEL engineer/designer, payment will be released on competent authority's approval at the following rate.

MAN-HOUR RATE FOR ELIGIBLE EXTRA WORKS: Single composite average labour man-hour rate, including overtime if any, supervision, use of tools and tackles and other site expenses and incidentals, consumables for carrying out any major rework/ repairs/ rectification/ modification/ fabrication as certified by site as may arise during the course of erection, testing, commissioning or extra works arising out of transit, storage and erection damages, payment , if found due will be as per applicable minimum wage act

2.14.6 The above composite labour man hour rate towards extra works shall remain firm and not subject to any variation during execution of the work. PVC will not be applicable for extra works. Rate revision, Over Run Charges/compensation etc will not be applicable due to extra works.

2.14.7 Extra Works for Civil Packages shall be regulated as follows

i) Rates for Extra Works arising due to (1) non availability of BOQ (Rate Schedule), OR (2) change in Specifications of materials/works (3) rectification/modification/dismantling & re erecting etc due to no fault of Contractor, shall be in the order of the following:

a) Item rates are to be derived from similar nature of items in the BOQ (Rate Schedule) with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities.

b) As per applicable updated CPWD-DSR (or latest edition) with applicable escalation derived, Notification issued by the office of CPWD for 'Cost Index' in that Region where the project is being executed,

c) Item rates are to be worked out on the basis of prevailing market rates mutually agreed between BHEL and Contractor, plus 15% towards Contractor's overheads and profit.

ii) PVC and ORC will not applicable be for (i) above.

2.15 SUPPLEMENTARY ITEMS

2.15.1 For NON Civil Works

Supplementary items are items/works required for completion of entire work but not specified in the scope of work. Subject to certification of such items/works as supplementary items by BHEL Engineer, rates shall be derived on the basis of any one of the following on mutual agreement:

- i) Based on percentage breakup/rates indicated for similar/nearby items
- ii) In case (i) above does not exist, then BHEL/site may derive the percentage breakup/rates to suit the type of work

2.15.2 For Civil Works

i) Rates for Supplementary Works/Additional Works arising out due to additions/alterations in the original scope of works as per contract subject to certification of BHEL Engineer shall be worked out as under:

a) Item rates which are available in existing BOQ (Rate Schedule) shall be operated with applicable escalation derived from All India Consumer Price Index for Whole Sale Commodities

b) Items of works which are not available in existing BOQ shall be operated as an 'Extra Works' and rate shall be derived as per clause no 2.14

ii) Execution of Supplementary Works/Additional Works through the Contractor shall be at the sole discretion of BHEL, and shall be considered as part of executed contract value for the purpose of Quantity Variation as per clause 2.13

iii) BHEL Engineer's decision regarding fixing the rate as above is final and binding on the contractor.

iv) PVC and ORC will not be applicable for (i) above.

2.16 STRIKES & LOCKOUT

2.16.1 The contractor will be fully responsible for all disputes and other issues connected with his labour/employee. In the event of the contractor's labour/employee resorting to strike or the Contractor resorting to lockout and if the strike or lockout declared is not settled within a period of 15 days, BHEL shall have the right to get the work executed through any other

agencies and the cost so incurred by BHEL along with Overhead charges of 35% shall be deducted from the Contractor's bills along with overhead of 35%

2.16.2 *For all purposes whatsoever, the employees of the contractor shall not be deemed to be in the employment of BHEL*

2.17 FORCE MAJEURE

The following shall amount to Force Majeure:-

2.17.1 *Acts of God, act of any Government, War, Sabotage, Riots, Strike, Civil commotion, Police action, Revolution, Flood, Fire, Cyclones, Earth quake and Epidemic and other similar causes over which the contractor has no control.*

2.17.2 *If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by force majeure as defined above, the agreed time of completion of the job covered by this contract or the obligations of the contractor shall be extended by a period of time equal to period of delay, provided that on the occurrence of any such contingency, the contractor immediately reports to BHEL in writing the causes of delay and the contractor shall not be eligible for any compensation.*

2.18 ARBITRATION & RECONCILIATION

2.18.1 *In case amicable settlement is not reached in the event of any dispute or difference arising out of the execution of the Contract or the respective rights and liabilities of the parties or in relation to interpretation of any provision by the Contractor in any manner touching upon the Contract, such dispute or difference shall (except as to any matters, the decision of which is specifically provided for therein) be referred to the sole arbitration of the arbitrator appointed by BHEL/In charge.*

The award of the Arbitrator shall be binding upon the parties to the dispute Subject as aforesaid, the provisions of Arbitration and Reconciliation Act 1996 (India) or statutory modifications or reenactments thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause. The venue of the arbitration shall be the place from which the contract is issued or such other place as the Arbitrator at his discretion may determine

2.18.2 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of the Contract, such dispute or difference shall be referred to by either party to the arbitration of one of the arbitrators in the department of public enterprises. The award of the arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law and Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary or Additional Secretary when so authorized by the Law Secretary, whose decision shall bind the parties hereto finally and conclusively.

2.18.3 The cost of arbitration shall be borne equally by the parties.

2.18.4 Work under the contract shall be continued during the arbitration proceedings

2.19 PAYMENTS

Payments to Contractors are made in any one of the following forms

2.19.1 Running Account Bills (RA Bills)

i) These are for interim payments when the contracts are in progress. The bills for such interim payments are to be prepared by Contractor in prescribed formats (RA Bill forms).

ii) Payments shall be made according to the extent of work done as per measurements taken up to the end of the calendar month and in line with the terms of payments described in the Tender documents along with relevant statutory documents applicable for the work.

iii) Recoveries on account of electricity, water, statutory deductions, etc are made as per terms of contract

iv) Full rates for the work done shall be allowed only if the quantum of work has been done as per the specifications stipulated in the contract. If the work is not executed as per the stipulated specifications, BHEL may ask the contractor to re do the work according to the required specifications, without any extra cost. However, where this is not considered necessary 'OR' where the part work is done due to factors like non-availability of material to be supplied by BHEL 'OR' non availability of fronts 'OR' non availability of drawings, fraction payment against full rate, as is considered reasonable, may be allowed with due regard for the work remaining to be done. BHEL decision in this regard will be final and binding on the contractor.

v) In order to facilitate part payment, BHEL Site Engineer at his discretion may further split the contracted rates/percentages to suit site conditions, cash flow requirements according to the progress of work

2.19.2 Final Bill

Final Bill is used for final payment on closing of Running Account for works or for single payment after completion of works. *Final Bill* shall be submitted as per prescribed format after completion of works as per scope and upon material reconciliation, along with the following.

- i) 'No Claim Certificate' by contractor
- ii) Clearance certificates where ever applicable viz Clearance Certificates from Customer, various Statutory Authorities like Labour department, PF Authorities, Commercial Tax Department, etc
- iii) Indemnity bond as per prescribed format BHEL shall settle the final bills after deducting all liabilities of Contractor to BHEL

2.20 PERFORMANCE GUARANTEE FOR WORKMANSHIP

2.20.1 Even though the work will be carried out under the supervision of BHEL Engineers the Contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of as mentioned in the contract/NIT from the date of commencement of guarantee period as defined in Technical Conditions of Contract, for good workmanship and shall rectify free of cost all defects due to faulty erection detected during the guarantee period. In the event of the Contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works at the Contractor's risk and cost, without prejudice to any other rights and recover the same from the balance security deposit.

2.20.2 BHEL shall release the balance security deposit subject to the following

- i) Contractor has submitted 'Final Bill'
- ii) Guarantee period as per contract has expired
- iii) Contractor has furnished 'No Claim Certificate' in specified format
- iv) BHEL Site Engineer/Construction Manager has furnished the 'No Demand Certificate' in specified format

v) Contractor has carried out the works required to be carried out by him during the period of Guarantee and all expenses incurred by BHEL on carrying out such works is included for adjustment from the Guarantee money refundable.

2.21 CLOSING OF CONTRACTS

The Contract shall be considered completed and closed upon completion of all contractual obligations and settlement of Final Bill or completion of Guarantee period whichever is later. Upon closing of Contract, BHEL shall issue a completion certificate as per standard format, based on specific request of Contractor.

2.22 REVERSE AUCTION/PRICE BID OPENING:

- *BHEL reserves the right to go for reverse auction at any point of time before opening of Price Bid.*
- *Bids with non-acceptance of reverse auction will be liable for rejection.*
- *Opening of Price Bid at discretion of BHEL.*
- *BHEL shall be at liberty to cancel the tender at any time, before ordering, without assigning any reason.*

2.23 SUSPENSION OF BUSINESS DEALINGS

BHEL reserves the right to take action against Contractors who either fail to perform or Tenderers/Contractor who indulge in malpractices, by suspending business dealings with them in line with BHEL guidelines issued from time to time.

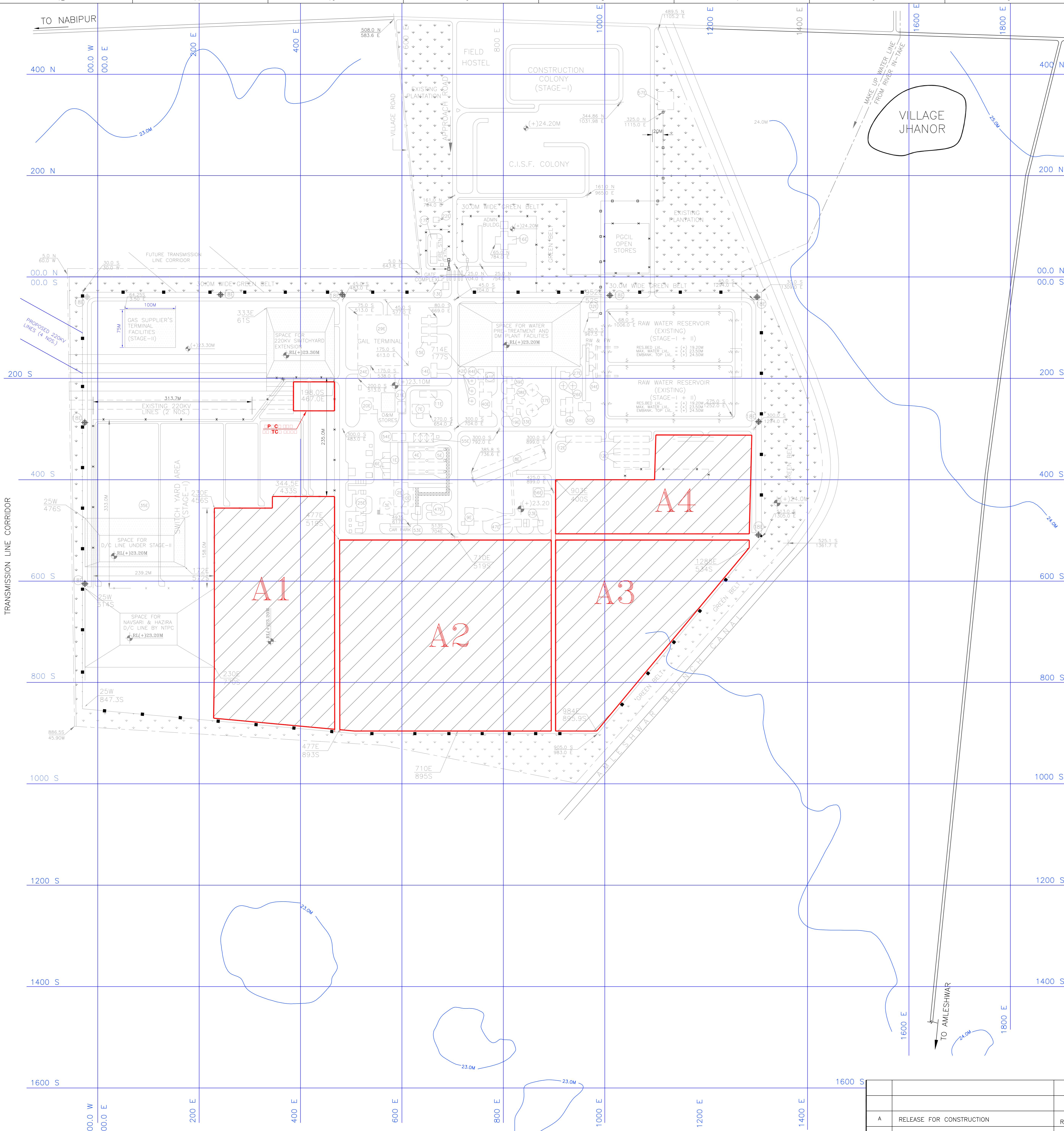
2.24 OTHER ISSUES

2.24.1 *Value of Non judicial Stamp Paper for Bank Guarantees and for Contract Agreement shall be not less than Rs 200/- unless otherwise required under relevant statutes.*

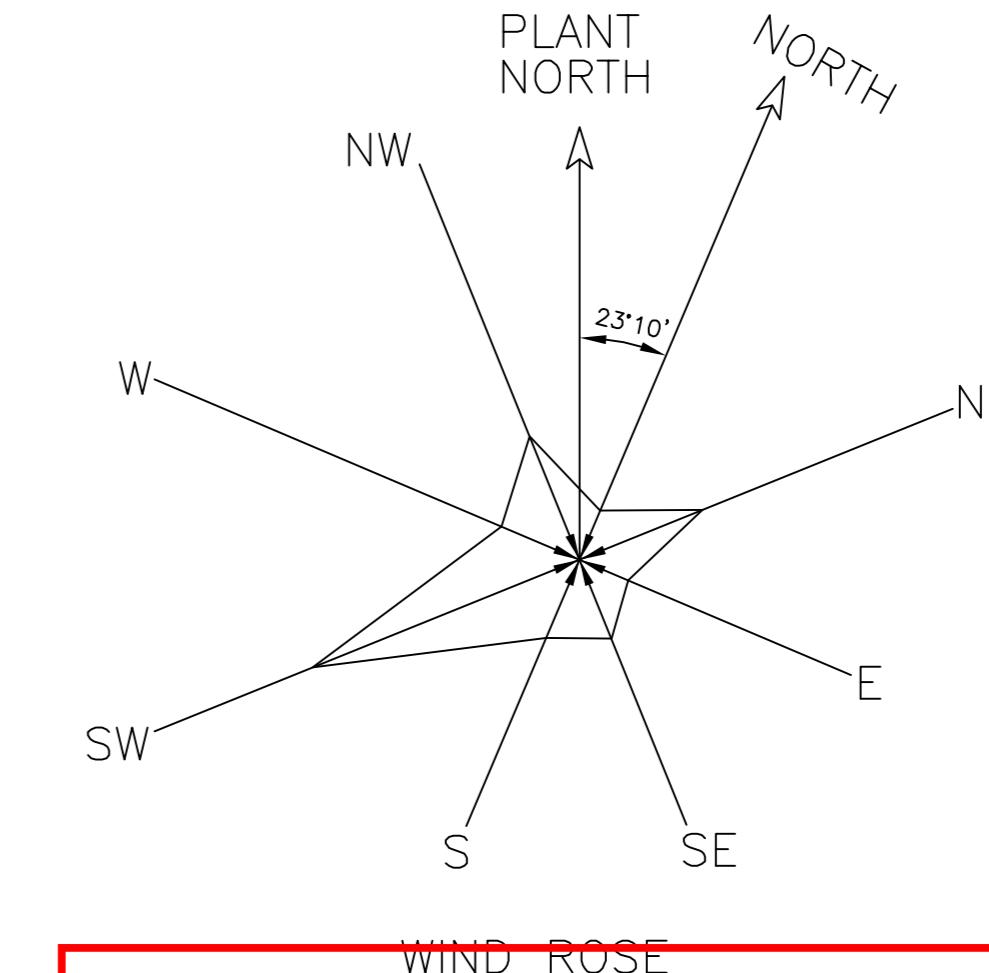
2.24.2 *In case of any conflict between the General Conditions of Contract and Special Conditions of Contract, provisions contained in the Special Conditions of Contract shall prevail.*

2.24.3 *Unless otherwise specified in NIT, offers from consortium/JVs shall not be considered.*

2.24.4 *BHEL may not insist for signing of Contract Agreements in respect of low value and short time period contracts*



0 40 80 120 160 200M
SCALE



FOR TENDER PURPOSE ONLY

S.NO.	AREA m ²	AREA IN ACRES
A1	420660.5885	103.9438

NOTES:-

1. THE DETAILS SHOWN IN DRAWING ARE TENTATIVE AND FOR TENDER PURPOSE ONLY.
2. THE PLOTS DEMARCTION ARE TENTATIVE AND ARE SUBJECT TO CHANGE DURING EXECUTION.
3. BIDDER HAS TO CONNECT THE PLOT DRAINAGE WITH THE NEAREST NATURAL DRAINS AND IN LINE WITH APPROVED DRAINAGE SCHEME, BIDDER CAN ALSO PROPOSE RAIN WATER HARVESTING RECHARGE PIT FOR QUICK STORM WATER SUBJECT TO APPROVAL FROM OWNER.
4. THE ROAD INSIDE INDIVIDUAL PLOT SHALL BE IN THE SCOPE OF THE RESPECTIVE PLOT BIDDER.
5. EVACUATION CABLE ROUTE UPTO SUB-STATION AS SHOWN ARE TENTATIVE AND FOR TENDER PURPOSE ONLY.
6. THE AREA DEMARCTIONS & ITS CO-ORDINATES ARE TENTATIVE AND ARE SUBJECT TO CHANGE BASED ON ACTUAL SITE CONDITIONS AND HANDING OVER

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ENGINEERING DIVISION

PROJECT JHANOR GANDHAR SOLAR POWER PROJECT													
TITLE VICINITY MAP													
SIZE	SCALE	DRG. NO.	5734-004(R)-POC-A-001								REV. NO.		
A1	1:4000										A		
A RELEASE FOR CONSTRUCTION												29.05.18	
REV. NO.	DESCRIPTION			DRAWN	DESIGN	CHKD.	M	E	C	C&I	ES	APPD	DATE
CLEARED BY													

E 10

Ld = DEVELOPMENT LENGTH IN TENSION
db = BAR DIAMETER

SECTION 1-1
(SCALE 1:25)

ISMB-200
(REFER RELEVANT TABLE)

Structural cross-section diagram labeled '2-2' showing the following details:

- Vertical Dimensions:**
 - Top edge to top of concrete: 1200 mm
 - Bottom edge to bottom of concrete: 1500 mm
 - Top edge to bottom edge: 1200 + 1500 = 2700 mm
 - Top edge to top of reinforcement: 1200 - 50 (cover) = 1150 mm
 - Bottom edge to top of reinforcement: 1500 - 50 (cover) = 1450 mm
- Reinforcement:** 8 bars of 150 C/C (Circular Cross-section) diameter.
- Concrete Cover:** 50 mm cover on top and bottom.
- Bottom Edge:** B.O.F. (Bottom of Form) at EL ± 1.50M. The diagram shows a stepped profile with a vertical drop of 100 mm.
- Bottom Flange:** PCC M 75 mm thick.
- Bottom Flange Reinforcement:** 5 bars of 150 C/C diameter.
- Section Markers:** T.O.F. (Top of Form) at EL 1.20M and B.O.F. (Bottom of Form) at EL ± 1.50M.
- Section Label:** SECTION 1.1

J-BOLT (M16) 4#
HDG MINIMUM 5.6 GRADE

NOTE

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S

DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED.

GRADE OF CONCRETE SHALL BE M-25 WITH 20mm DOWN GRADED AGGREGATES

REINFORCEMENT SHALL BE OF HIGH YIELD STRENGTH DEFORMED BAR OF GRADE 400 CONFORMING TO IS:1786

CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS

PLINTH – 50MM, COLUMN – 50MM, PLINTH BEAM-50MM, SLAB-20MM.

LENGTH SHALL BE 50D WHERE D IS THE DIA OF THE SMALLER BAR BEING LAPPED

SPACING OF BARS SHALL BE SUITABLY STAGGERED AND IN NO CASE MORE THAN 50%
S SHALL BE LAPPED AT ANY SECTION.

HOOKS, BENDS, LAPS AND SPLICES SHALL BE AS PER RELEVANT IS CODE

BIDDER MAY CHOOSE BUILDING SPAN (C/C) FROM 5.5M TO 7.5M. FOUNDATION DETAILS HAVE BEEN
OPTIMIZED FOR DIFFERENT RANGES OF SAFE BEARING CAPACITY(SBC). FOUNDATION COLUMN PEDESTAL,
SHEET PLATE, REINFORCEMENT DETAILS, SIZES ETC. SHALL BE DECIDED BASED ON TABLE-1 & TABLE-2
CONSIDERING THE SBC AND C/C SPAN. IN CASE OF SBC LESS THAN 5 T/SQM, FOUNDATION SHALL BE
DESIGNED BY BIDDER CONSIDERING PROJECT SPECIFIC CONDITIONS AND SHALL BE SUBMITTED FOR NTPC APPROVAL.

FOUNDATION SHALL BE LAID ON BACK FILLED SOIL.

IF ROCK IS ENCOUNTERED AT SHALLOW DEPTH THEN FOUNDATION MAY BE PLACED AT TOP OF
ROCKY STRATA, HOWEVER IN NO CASE DEPTH OF FOUNDATION SHALL BE LESS THAN 1M.

LOCATION OF FOUNDATION SHALL BE DECIDED BY GEOTECHNICAL INVESTIGATION WORK CARRIED OUT BY CONTRACTOR
APPROVAL BY NTPC IN GEOTECHNICAL INVESTIGATION REPORT.

WALLING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.

PERIPHERAL GARLAND DRAIN SHALL BE MADE ALL AROUND THE PEB INVERTOR ROOMS AND
CONNECTED TO NEAR BY DRAINS.

150MM WIDE PLINTH PROTECTION WITH 75MM THK. PCC LAID OVER WELL COMPACTED 75MM DRY BRICK BALLAST
AROUND THE PEB ROOM IN LINE WITH TECHNICAL SPECIFICATION.

HEIGHT OF PEB ROOM SHALL BE MINIMUM 500MM ABOVE SURROUNDING NGL.

STRUCTURAL STEEL MEMBERS SHALL BE GALVANISED. THE THICKNESS OF GALVANIZATION SHALL
BE IN LINE WITH IS4759. HOWEVER MINIMUM THICKNESS OF GALVANIZATION SHALL BE MAINTAINED
AT 85 MICRON FOR ALL MEMBERS.

BIDDER SHALL SUBMIT THE DETAILED FABRICATION DRAWING AND PUFF PANEL DETAILS
(DEVELOPED BASED ON NTPC TENDER DRAWING AND TECHNICAL SPECIFICATION) FOR NTPC
INSPECTION BEFORE START OF WORK. ALL WORKS SHALL BE EXECUTED IN LINE WITH APPROVED DRAWING'S.

TOP TENDER BUREAU ONLY

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PEB INVERTOR ROOM

11. *What is the primary purpose of the following statement?*

5734-004-POC-A-005

SHEET 2 OF 3

FIXED END JOINT IN A COLUMN (TYP)

LAPPING LENGTH DETAILS (TYP)

SECTION 1-1 (SCALE 1:25)

6	TOPB (EL(+0.40M))

11 DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.

12 PERIPHERAL GARLAND DRAIN SHALL BE MADE ALL AROUND THE PEB INVERTOR ROOMS AND CONNECTED TO NEAR BY DRAINS.

13 750MM WIDE PLINTH PROTECTION WITH 75MM THK. PCC LAID OVER WELL COMPACTED 75MM DRY BRICK BALLAST ALL AROUND THE PEB ROOM IN LINE WITH TECHNICAL SPECIFICATION.

14 THE FGL OF PEB ROOM SHALL BE MINIMUM 500MM ABOVE SURROUNDING NGL.

15 ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANISED. THE THICKNESS OF GALVANIZATION SHALL BE IN LINE WITH IS4759. HOWEVER MINIMUM THICKNESS OF GALVANIZATION SHALL BE MAINTAINED AS 85 MICRON FOR ALL MEMBERS.

16 BIDDER SHALL SUBMIT THE DETAILED FABRICATION DRAWING AND PUFF PANAL DETAILS (DEVELOPED BASED ON NTPC TENDER DRAWING AND TECHNICAL SPECIFICATION) FOR NTPC INFORMATION BEFORE START OF WORK. ALL WORKS SHALL BE EXECUTED IN LINE WITH APPROVED DRAWING'S.

15 ALL BRACINGS LIKE BRC-1, BRC-2 SHALL BE CONTINUED IN EVERY ALTERNATE BAY IN CASE THE NO. OF BAYS ARE INCREASED. THE NO OF BAYS MAY BE REDUCED BASED ON BIDDER REQUIREMENT MAINTAINING THE BRACING IN EVERY ALTERNATE BAY. BIDDER SHALL ENSURE THAT THE BRACING IN BOTH THE DIAGONAL DIRECTIONS ARE PROVIDED IN PEB.

18 THE OPENINGS SHOWN IN PEB ARE TENTATIVE VENDOR SHALL FINALIZE THE SAME DURING DETAILED ENGG. BASED ON NTPC APPROVAL. VENTILATIONS AND DUCTS SHALL BE DESIGN CONSIDERING HEAT CALCULATION AND SUBMIT FOR NTPC APPROVAL BEFORE EXECUTION/MANUFACTURING.

19 THE SIZES OF FOUNDATION MENTIONED IN TABLE-1 FOR DIFFERENT RANGES OF SBC ARE MINIMUM SIZE TO BE ADOPTED BY BIDDER.

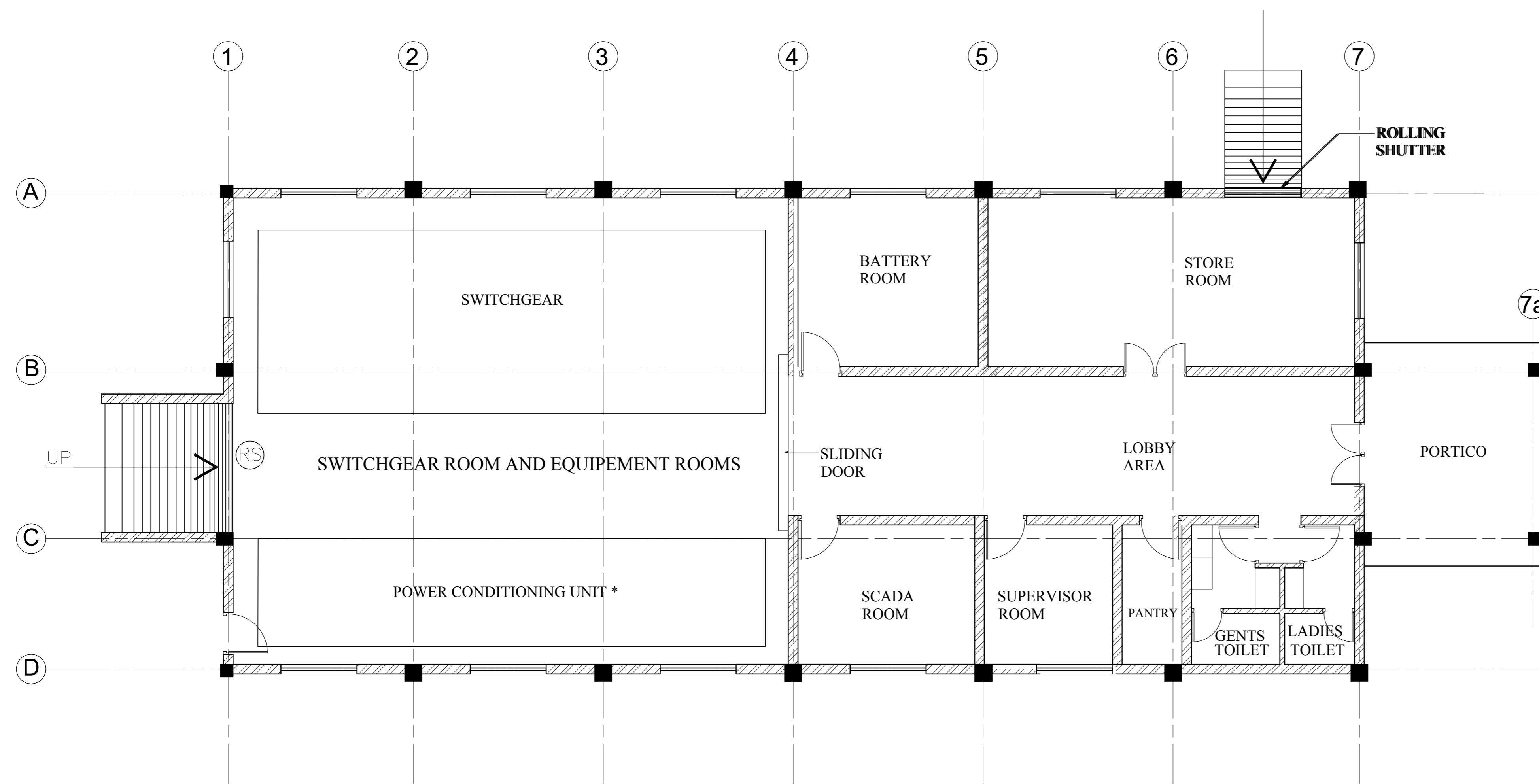
20 THE SIZES OF STRUCTURAL STEEL MEMBERS IN TABLE-2 ARE MINIMUM SIZES TO BE ADOPTED FOR

A technical drawing of a stepped profile, likely a cross-section or a plan view, with various dimensions and features labeled:

- 1**: A vertical dimension line on the left side, indicating a height of 1.
- A**: A vertical dimension line on the left side, indicating a height of A .
- A'**: A vertical dimension line on the left side, indicating a height of A' .
- B**: A horizontal dimension line at the bottom, indicating a width of B .
- B'**: A horizontal dimension line at the bottom, indicating a width of B' .
- C**: A vertical dimension line on the right side, indicating a height of C .
- D**: A horizontal dimension line indicating a width of D for the stepped section.
- a**: A feature labeled 'a' at the top right, with an arrow pointing to a diagonal line segment.
- b**: A feature labeled 'b' in the middle right, with an arrow pointing to a horizontal line segment.

TABLE -2				
SPAN (S)	COLOUMN / RAFTER	BASE PLATE SIZE	PEDESTAL SIZE	MAIN RAINFORCEMENT OF PEDESTAL
S = 5.5M	ISMB 200	350X200	400X400	16Ø-8NOS
5.5M < S <= 6.5M	ISMB 250	400X225	450X400	16Ø-8NOS
6.5M < S <= 7.5M	ISMB 300	450X250	500X400	16Ø-10NOS

A	RELEASE FOR CONSTRUCTION
REV.NO.	D E S C R I P T I O N



CMCS ARCHITCTURAL GROUND FLOOR PLAN

CMCS BUILDING CONSIST OF MINIMUM ROOMS AS BELOW	
GROUND FLOOR	GROUND FLOOR
(a) INVERTOR ROOM	(a) SCADA ROOM
(b) SWITCHGEAR ROOM	TOP FLOOR
(c) STORE ROOM	(c) VIEW POINT
(d) BATTERY ROOM	
(e) SUPERVISOR ROOM	
(f) PANTRY	
(g) TOILET 2NOS	
(h) LOBBY AREA	

FOR TENDER PURPOSE ONLY

TABLE

CMCS ROOMS	MINIMUM AREA
SCADA ROOM	16 SQM.
STORE ROOM	25 SQM.
TOILET X 2 NOS	16 SQM. (TOTAL)
PANTRY	5 SQM.
SUPERVISOR ROOM	12 SQM.

NOTES

1. THE DETAIL CONSTRUCTION & DESIGN DRAWING OF CMCS BUILDING SHALL BE DEVELOPED BY BIDDER AND SUBMITTED TO NTPC FOR APPROVAL BEFORE START OF WORK.
2. SOME MINOR CHANGES IN DETAIL CONSTRUCTION OF CMCS BUILDING WITH RESPECT TO TENDER DRAWING MAY BE PORPOSE BY BIDDER AS PER RECOMENDATION OF EQUIPMENT MANUFACTURER, BETTER PERFORMANCE AND LOCATION OF SCADA ROOM AND VIEW POINT. THE SAME SHALL BE SUBJECT TO NTPC APPROVAL.
3. EQUIPMENT IN CMCS SWITCHGEAR ROOM AS PER APPROVAL OF SLD AND LAYOUT.
4. MINIMUM CLEARENCE BETWEEN BACK SIDE OF ANY FLOOR MOUNTED PANEL AND THE WALL SHALL BE 850 MM OR MANUFACTURER RECOMENDATION, WHICHEVER IS HIGHER.
5. MINIMUM WORKING CLEARENCE BEFORE FRONT PANELS OF ANY SWITCHGEAR,PCU OR SIMILLAR EQUIPEMENT GENERALY SHALL NOT BE LESS THEN 2200MM,
6. CMCS BUILDING EQUIPMENTS ROOM LENGTH/GRID CAN BE DETERMINED BASED ON ACTUAL REQUIREMENT,

* WITH OR WITHOUT PARTITION WALL FOR PCU AS PER RECOMENDATION OF MANUFACTURER.

FINISHING SCHEDULE					
S.NO.	ROOM	FLOOR	INTERNAL WALL	EXTERNAL WALL	CEILING
1	SWITCHGEAR ROOM	CEMENT CONCRETE FLOORING WITH IRONITE HARDENER	12MM THICK CEMENT PLASTER WITH 1:5, WITH ACRYLIC DISTEMPER PAINTING	18MM THICK CEMENT PLASTER WITH 1:6, WITH EXTERIOR EMULSION PAINTING	6MM THICK PLAIN CEMENT PLASTER WITH ACRYLIC DISTEMPER
2	SCADA ROOM	HEAVY DUTY VITRIFIED CERAMIC TILE SIZE OF 600x600	12MM THICK CEMENT PLASTER WITH 1:5, WITH ACRYLIC EMULSION PAINT	18MM THICK CEMENT PLASTER WITH 1:6, WITH EXTERIOR EMULSION PAINTING	15MM THICK MINERAL FIBRE BOARD IN TILE FORM OF 600X600MM FALSE CEILING
3	BATTERY ROOM	ACID/ALKALI RESISTANT TILE TILES OR ALKALI RESISTANT EPOXY COATING	12MM THICK CEMENT PLASTER, ACID ALKALI RESISTANT PAINT, AN EXPOSED WALLS ABOVE 1200MM, 200MM HIGH DADO OF ACID/ALKALI RESISTANT TILING	18MM THICK CEMENT PLASTER WITH 1:6, WITH EXTERIOR EMULSION PAINTING	ACID RESISTANT RESIN BASED EPOXY COATING
4	LOBBY	HEAVY DUTY VITRIFIED CERAMIC TILES AND SKIRTING	12MM THICK CEMENT PLASTER WITH 1:5, WITH ACRYLIC DISTEMPER PAINTING	18MM THICK CEMENT PLASTER WITH 1:6, WITH EXTERIOR EMULSION PAINTING	6MM THICK PLAIN CEMENT PLASTER WITH ACRYLIC DISTEMPER
5	TOILET	HEAVY DUTY ANTI-SKID CERAMIC TILES SIZE IS 300x300mm	HEAVY DUTY ANTI-SKID CERAMIC TILES AND DADO UPTO 2100MM, AND THE SIZE OF TILE IS 300x300mm	18MM THICK CEMENT PLASTER WITH 1:6, WITH EXTERIOR EMULSION PAINTING	6MM THICK PLAIN CEMENT PLASTER WITH ACRYLIC DISTEMPER
6	STEPS	KOTA STONE/GRANITE-20mm THICK	12MM THICK CEMENT PLASTER WITH 1:5, WITH ACRYLIC DISTEMPER PAINTING	-	6MM THICK PLAIN CEMENT PLASTER WITH ACRYLIC DISTEMPER
7	STORE ROOM	CEMENT CONCRETE FLOORING WITH IRONITE HARDENER	12MM THICK CEMENT PLASTER WITH 1:5, WITH ACRYLIC DISTEMPER PAINTING	18MM THICK CEMENT PLASTER WITH 1:6, WITH EXTERIOR EMULSION PAINTING	6MM THICK PLAIN CEMENT PLASTER WITH ACRYLIC DISTEMPER

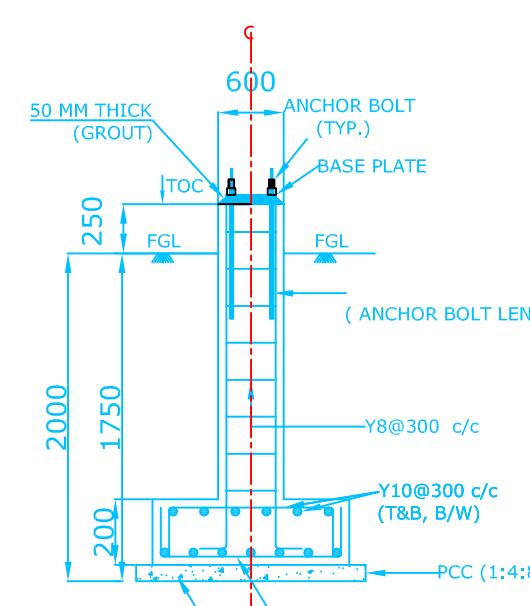
REV.NO.	DESCRIPTION	DRAWN	DESIGN	CHKD.	APPD.				DATE	SIZE	SCALE	DRG. NO.
					MECH (L/O)	MECH (W/S)	ELEC.	C&I				
CLEARED BY												

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 (ENGINEERING DIVISION)

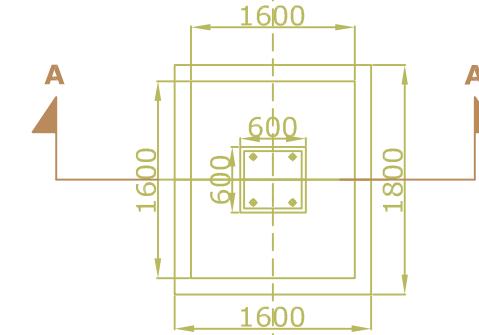
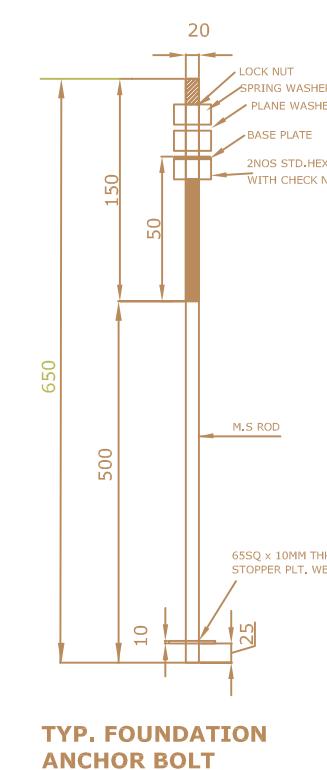
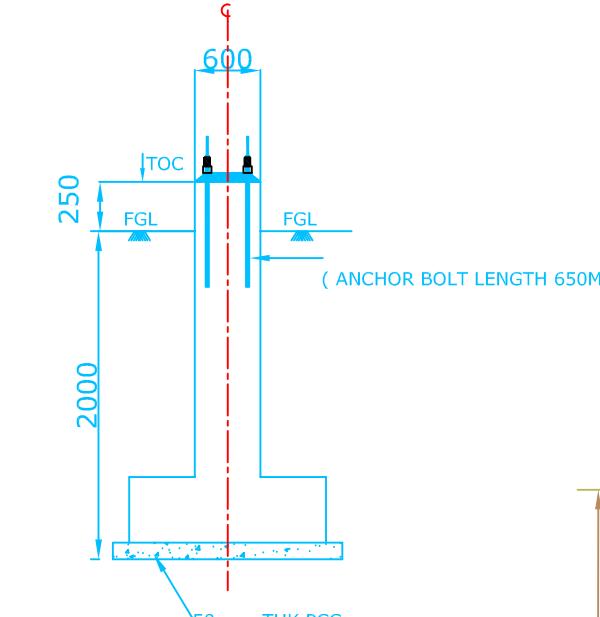
PROJECT JHANOR GANDHAR SOLAR POWER PROJECT

TITLE CENTRAL MONITORING & CONTROL STATION
 ARCHITECTURAL PLAN

REV. NO. B
 5734-004-POC-A-007

C/S OF FOUNDATION FOR EACH LEG
(REINFORCEMENT)

SECTION A-A

FOOTING &
PEDESTAL PLANC/S OF FOUNDATION FOR EACH LEG
(SHUTTERING)

NOTE:

1. ALL DIMENSION ARE IN MM AND FOLLOW WRITTEN DIMENSION,
2. GRADE OF CONCRETE SHALL BE M20
3. ALL REINFORCEMENT GRADE SHALL BE Fe500 (TMT)
4. CLEAR COVER TO MAIN REINFORCEMENT FOR FOUNDATION = 50 MM
PEDESTAL = 40 MM
5. 50MM THK PCC TO BE LAID BELOW FOUNDATION
6. ASSUMING SAFE BEARING CAPACITY OF SOIL IS 20T/SQ.M @ 2 M DEPTH AS PER CEO TECHNICAL INVESTIGATION REPORT
7. ALL LAPS AND ANCHORAGE SHALL BE L_d - 50MM DIA OF BAR.
8. FOR ORIENTATION OF PEDESTAL AND FOUNDATIONS, REFER FOUNDATION LAYOUT
9. FINAL GROUTING OF BASE PLATE SHOULD BE DONE ONLY AFTER PROPER ALIGNMENT OF STRUCTURE IS DONE
10. FOUNDATION BOLTS SHALL BE PLACED IN POSITION BEFORE POURING OF PEDESTAL CONCRETE AS PER APPROVAL STRUCTURE DRG.
11. BEFORE PASTING OF ANY FOUNDATION BOLTS RELEVANT STRUCTURE DRG. SHALL BE REFERRED
12. GROUT SHALL BE M10 CONCRETE

REFERENCE DRAWINGS :

LEGEND :

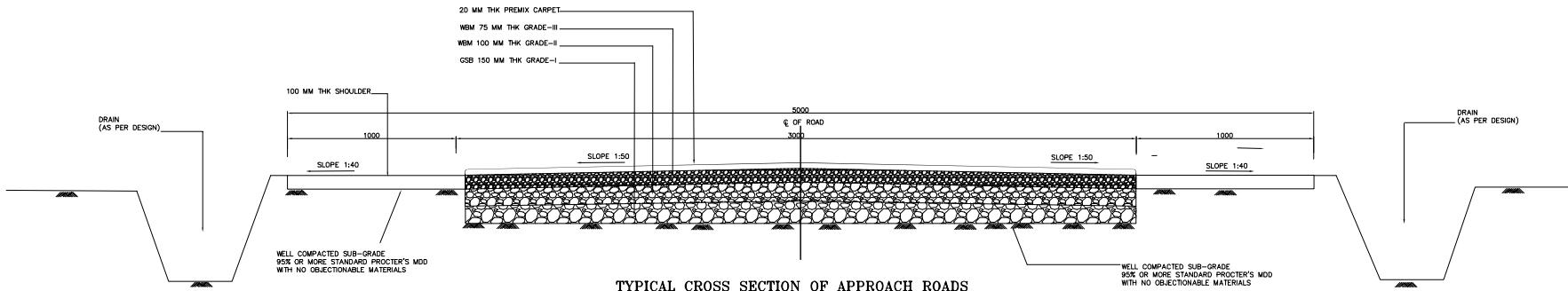
TOC : TOP OF CONCRETE
FFL : FINISHED FLOOR LEVEL
FGL : FINISHED GROUND LEVEL
EL : ELEVATION
C/C : CENTRE TO CENTRE
TYP : TYPICAL
REINF : REINFORCEMENT
THK : THICKNESS

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INVENTORY NO.	SIGN. & DATE	REF. DRG. NO.
---------------	--------------	---------------

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT	TITLE	LICENSED PARTNER	UNIVERSAL TRANSFORMERS	NAME	SIGN	DATE	APPD	SHT. NO.	3	F
GSECL 75 MW SPP DHUVARAN	FOUNDATION PLAN OF PI	SIEPAN 8PU SIEMENS		RUPESH				NO. OF SHT.	7	

1	2	3	4	5	6	7	8
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NOTES

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METRES.
2. THE LEVEL AT THE TOP OF THE ROAD SHALL CORRESPOND TO THE LEVEL AT THE TOP OF BITUMINOUS CARPET AT THE CENTRE OF ROAD.
3. CAMBER SHALL BE PROVIDED AT SUBGRADE LEVEL.
4. C B R VALUE OF THE SUBGRADE LEVEL SHOULD BE MINIMUM 4%, IF ACTUAL C B R IS LESS THAN 4% IN A PARTICULAR STRETCH THEN THE SAME MATERIAL SHALL MODIFIED WITH INCREASE IN GSB THICKNESS.
5. THE SHOULDERS ON BOTH SIDES OF THE ROAD SHALL BE PROPERLY COMPACTED.
6. THE ROAD SHALL BE MINIMUM 150 MM ABOVE F.G.L.
7. WBM 100MM THICKNESS MAY BE MODIFIED TO 75MM THICKNESS FOR WBM CONSTRUCTION, WITH CORRESPONDING INCREASE OF 50 MM IN GSB THICKNESS.

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PROJECT		NTPC SOLAR POWER PROJECT		
TITLE		TYPICAL DETAILS OF APPROACH ROADS		
SL. NO.	SIZE	SCALE	DRG. NO.	REV. NO.
1	A1	NTS	0000-000-POC-A-002	A

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Main Contractor Name and Logo 	Main Contractor Name and Logo	FIELD QUALITY PLAN					PROJECT: Solar Project	PACKAGE:	CONTRACT NO.:	MAIN CONTRACTOR
		ITEM : CIVIL WORK		QP NO.:	1					
		SUB-SYSTEM : FOUNDATIONS, EXCAVATION & FILL, SITE LEVELLING, CONCRETE, ROAD, BUILDING ETC.		REV. NO.:						
		DATE :		PAGE :						
Sl. No.	Components/Material & Operation	Characteristics/ Instruments		Class of Check	Type of Check	Quantum of Check	Reference Document	Acceptance Norms	Format of Record	Remarks
1	2	3	4	5	6	7	8	9	D*	10
1	General Requirements									
A	Setting up of Field QA&QC laboratory, Availability of requisite laboratory set up and equipment in good working condition & duly calibrated, well before commencement of concerned activity		As agreed / required	B	Physical	Once prior to start of work and thereof monthly	Tech Specs and Const. Drawings	SR	✓	Functioning & calibration status of laboratory equipment in proper working condition to be verified on monthly basis
B	Submission of QA & QC manpower deployment schedule and availability of manpower		As agreed / required	B	Physical	Manpower shall be deployed progressively as per the work front and discipline wise progress	Tech Specs and Const. Drawings	SR	✓	
C	Sampling for testing of building materials, concrete admixture, concrete mix design etc.		As agreed / required	A	Physical	Once per each source	Tech Specs and Const. Drawings	SR/TR	✓	Test report along with the recommendations from Employer acceptable laboratories to be submitted to EIC/FQA head for review and acceptance.
E	Stacking and storage of construction materials and components at site		As per IS:4082	B	Physical	Random	Tech Specs and Const. Drawings, Manufacturer's guidelines and IS 4082	SR		
F	Survey									
	Construction of Bench Mark / Grid Pillars	To mark reference co-ordinate & elevation	As required / agreed	B	Physical	each Bench Mark/ Grid Pillars	As per technical specifications and relevant IS Codes, approved drawings	SR	✓	Joint protocol for co-ordinate and elevation
2	Excavation & Filling in Foundation Works									
2.1	Excavations									
i		Initial ground level before start of excavations, Final excavation levels, Side slope of final excavations	As agreed/required	B	Measurement	100%	Tech Specs & Const. Drawings	SR	✓	
2.2	Fill/Backfill									
i	Standard Proctor Test	Optimum moisture content & max. dry density before fill	As per IS 2720, Proctor needle apparatus etc.	A	Physical	One in every 10000 cum for each type and source of fill materials	IS 2720 (Pt VII) Tech Specs & Constr. Drawings	SR/TR	✓	
ii	Moisture content	Moisture content of fill before compaction	As per IS: 2721	C	Physical	Random	IS 2720 (Pt.II), Tech Specs and Const. Drawingss	SR/TR		
2.3	Degree of compaction of fill/backfill									
i		Dry density by core cutter method --- OR --- Dry density in place by sand replacement method --- OR --- any other method as per IS 2720	As per IS: 2720	A	Physical	i) For foundation back fill one for every 10 foundations for each compacted layer. ii) For area filling, one every 1000 SQM area for each compacted layer.	IS 2720 (Pt. XXIX)/ IS 2720 (Pt. XXVIII)/ IS 2720 Relevant Part/ Tech Specs and Const. Drawings	SR / TR	✓	
ii		Relative density (Density Index)	As per IS:2720	A	Physical	---do----- (i) & (ii) above	IS 2720 (Pt. XIV), Tech Specs and Const. Drawings	SR / TR	✓	
3	Materials									
3.1	Cement									
i	Material	Physical and chemical properties as per relevant IS codes	As required/ agreed	A	Review of MTC/ test reports	for each manufacturing Week number	IS : 269/ IS:1489/ IS:455, Tech Specs and Const. Drawings	MTC	✓	To be procured from Employer approved source. Each consignment of cement shall be duly correlated with manufacturers TC.

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ii		Testing of cement for Setting time (Initial & Final) and compressive strength	As per IS:4031	B	Physical	one for each manufacturing Week number	IS : 269/ IS:1489/ IS:455, Tech Specs and Const. Drawings	SR/Test Report	✓	Additionally, If cement is stored more than 90 days in godown of contractor, same shall be retested for Setting time.& Comp. Strength
3.2	Coarse Aggregate									
i		Moisture content	IS:2386	B	Physical	To be done every day before start of work	IS : 456/IS : 383/IS: 2386 Part-III/Tech Spec	SR/LB	✓	During monsoon, frequency may be increased and accordingly water content in concrete will be
ii		Sieve analysis, flakiness index, elongation index	IS:2386	B	Physical	One per 100 cum., or part thereof	IS: 2386 Part-I, IS:383 / Tech Spec	SR/LB	✓	
iii		Specific gravity, Soundness, water absorption, Deleterious materials (coal & lignite, clay lumps, material finer than 75 micron sieve, soft fragment, shale, Total of % of all deleterious materials)	IS:2386	B	Physical	Once for each source & for every change of source	IS: 2386 Part-III, IS: 2386 Part-II, IS: 2386 Part-V, IS:456, IS:383/Tech Spec	SR/LB/ Test Report	✓	During Design mix, these tests may be carried out.
iv		Crushing value, abrasion value and impact value	IS:2386	B	Physical	-do-	IS:383, IS-2386 Part IV/Tech Spec	SR/LB/ Test Report	✓	
3.3	Fine Aggregate									
i		Moisture content	IS:2386	B	Physical	To be done every day before start of work	IS : 456/IS : 383/IS: 2386 Part-III/Tech Spec	SR/LB	✓	During monsoon, frequency may be increased and accordingly water content in concrete will be
ii		Sieve analysis, Silt content	As agreed / required	B	Physical	One per 100 cum., or part thereof	CPWD / Tech Spec/ IS 2386 / IS 456/ IS 383	SR/LB/ TR	✓	
iii		Specific gravity, Soundness, water absorption, Deleterious materials (coal & lignite, clay lumps, material finer than 75 micron sieve, soft fragment, shale, Total of % of all deleterious materials (excluded mica and included mica)),organic impurities	IS:2386	B	Physical	Once for each source & for every change of source	IS: 2386 Part-III, IS: 2386 Part-II, IS: 2386 Part-V, IS:456, IS:383/Tech Spec	SR/LB/ Test Report	✓	During Design mix, these tests may be carried out.
3.4	Water									
i		Complete test as per IS 456	Burette, conical flask, pipette etc.	B	Testing/Review of Test Report	Once for each source and thereafter yearly in case of bore well. If water is used from open source like river, stream, canal etc., then water testing is to be done quarterly.	IS 3025 Part 22 & 23 for test procedure, IS 456 for acceptance criteria	TR	✓	
3.5	Concrete									
i		4 Trial mixes to ascertain the workability and cube strength	After receiving the recommended mix design from specialist agency,	A	Physical	4 trial mix. for each mix proportion	Tech. Spec.,IS 456	SR/TR	✓	
ii		Concrete Cube Strength Test	IS:516	A	Physical	One set of 6 cubes per 50 Cum or part thereof for each grade of concrete per shift whichever is earlier.	IS:516, IS:456, Tech. Spec.	SR/TR	✓	Min. of 6 cubes for each mix, 3 specimen shall be tested at 7 days remaining 3 shall be for 28 days comp. Strength.
iii		Workability slump test	As per IS 1119	B	Physical	At the time of concrete pouring and thereafter at every 2 hours	IS 456/Tech Specs	SR/TR	✓	
iv		Temperature Control of Concrete as per Tech. spec./IS standard	Thermometer	B	Physical	100%	Temperature as per technical specification/IS 456	SR	✓	
v		Water Cement Ratio		B	Physical	For each batch of concrete	As per approved Design Mix	SR/Batch slip	✓	
vi		Placement of concrete, Compacting, Curing	As required	B	Physical	At Random	IS:456, Period of curing as per IS 456	SR		
3.5.1	Admixture for concrete	Type of admixture	As per IS 9103	B	Review of MTC	For each lot received at site	Designed mix and IS 9103	MTC	✓	3.5.1 is only applicable when admixture is recommended in Concrete mix design

3.6 Batching Plant (if applicable)									
I		Calibration of Batching plant		A	Physical	To be calibrated at the time of starting and subsequently once in three month in house.	Review of calibration chart / Certificate/ IS 4925	Calibration Report	<input checked="" type="checkbox"/> Batching Plant shall be calibrated regularly at least once in a 3 months in-house. The weights for batching plant calibration to be calibrated once in year by NPL/NABL accredited lab./Weights & Measures Dept.
3.7 Test/Checks on RCC Structure in Hardened Condition									
i		Dimensional check on finished structure, insert steel column post & dimensional tolerance	As required	B	Measurement	Approved drawing	As per IS 456/tech spec/construction drawing	SR	<input checked="" type="checkbox"/>
ii		Submission of grouting / repair methodology to EIC for approval if concrete surface / position and alignment of embedded parts / inserts are found defective	--	B	Review and approval	once for each type of defect	As per provisions and tolerances, Tech Specs and Const. Drawings		<input checked="" type="checkbox"/>
iii		Core Test	IS:516	A	Physical	As required by EIC.	As per IS:456, IS 516	SR/TR	<input checked="" type="checkbox"/> Compressive strength based on core test is required to be carried out in case of doubt regarding the grade of concrete used, either due to poor workmanship or based on the results of cube strength test as per sl. No. 3.5 ii) above / discretion of EIC.
iv		Rebound Hammer test	IS:13311	A	physical	As required by EIC.	As per relevant / tech. Specification.	SR/TR	<input checked="" type="checkbox"/> This test may be carried out to assess the strength of concrete in case of non-critical and lightly loaded structures as per discretions of EIC.
3.8 Reinforcement Steel and Placement of Reinforcement Steel									
i	Material	Physical and chemical properties as per relevant IS codes and Tech spec.	As agreed/required	A	Review of MTC	Each batch/lot of delivery	As per IS 1786, IS 432, IS 1566, tech spec and cont. drawing	MTC	<input checked="" type="checkbox"/> To be procured from Employer approved source.
ii		Freedom from cracks surface flaws, Lamination & excessive rust.	As agreed / required	B	Visual	Random in each shift	IS: 1852, IS:432, IS:1786, Tech Specs and Const. Drawings	SR	<input checked="" type="checkbox"/> To be checked at site. Steel collected from source should be free from excessive rust. To be stored as per Technical Specs.
iii		Bar bending schedule with necessary lap, Spacers & Chairs	As agreed / required	B	Physical & Measurement	Random in each shift	Approved Drawings, Tech Specs and Const. Drawings, IS:2502	SR	<input checked="" type="checkbox"/>
iv		Acceptance - disposition of cage w.r.t. reference axes, cover, spacing of bars, spacers and chairs after the reinforcement cage is put inside the formwork	Measuring tape & as required	B	Visual & Measurement	Random in each shift*	IS 456, Tech Specs and Const. Drawings	SR	<input checked="" type="checkbox"/>
3.9 PRE-CAST CONCRETE									
i		Crushing strength	compression testing machine		Physical		IS:516 & IS: 456	SR/TR	<input checked="" type="checkbox"/> If pre cast member manufactured at site then Sl.NO. 3.5 shall be applicable. <input checked="" type="checkbox"/> If it is manufactured at manufacturing unit/factory, then random periodic surveillance shall be carried out by Regional/site QA/SSC-QA.
3.10 Grouting									
i		Compressive strength	As agreed/required	B	Physical	Random in each shift	Tech spec and const dwg	SR/TR	<input checked="" type="checkbox"/>
4 Brick Masonry									
i	Test on bricks	Dimensions, shape, compressive strength, water absorption, warpage, efflorescence	As agreed/required	B	Measurement/Physical test	As per relevant IS code/one sample for 30000 nos or part thereof	As per IS 1077, IS 13757,IS 2691, IS 12894/tech spec and const dwg	SR/TR	<input checked="" type="checkbox"/> Warpage test is applicable for facing bricks only as per IS:2691
5 Painting System --on Concrete works, steel works and plastered masonry surfaces									
i	Materials - oil bound, acrylic emulsion, chemical resistant, oil resistant paint etc.	Shade, type approved by EIC	As agreed/required	B	Review of MTC/ test reports	Each batch of delivery	Tech spec and const dwg	MTC/TR	<input checked="" type="checkbox"/>

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ii	Acceptance of painted surfaces	As required	As agreed/required	B	Visual/physical	Each surface at random	Tech spec and const dwg	SR	v	
6	Fencing and Gates									
i	GI Chain link fence (IS 2721) & reinforced twisted barbed (IS 2629) etc. as per Tech. Spec.	Materials	As agreed/required	B	Review of MTC/test reports	Each batch of delivery	Tech spec and const dwg	MTC/TR	v	MTC shall contain all the parameters specified in the technical specifications/ relevant IS codes
ii	Structural steel column post	Materials	As agreed/required	B	Review of MTC/test reports	Each batch of delivery	Tech spec and const dwg	MTC/TR	v	MTC shall contain all the parameters specified in the technical specifications/ relevant IS codes
iii		Acceptance of the materials and works	As agreed/required	B	Physical/measure ment	Each installation	Tech spec and const dwg	SR		
7	Earthing Mat (Grounding System)									
i		Materials	As agreed/required	B	Review of MTC/test reports	Each batch of delivery	Tech spec and const dwg	MTC/TR	v	
ii		DP tests	DP test kit	B	Physical	10% at random of the offered lot	Tech spec and const dwg	TR	v	
iii		Earth tests	Earthing test kit	A	Physical	100%	Tech spec and const dwg	SR	v	
8	All other Bought Out items (BOIs)									
i	Materials for Damp Proof Course, Grouting, Insulation Works, False Ceiling, Windows, Doors, Ventilators and Rolling Shutters, Glazing, Water Proofing works, Roof/Basement Treatment, Floor Finishes and Allied Works, vitrified ceramic tiles, Acid Alkali resistance tiles, Water Supply and sanitary Fittings and Fixtures, RCC Pipes, Water storage tank etc.	Materials	As agreed/required	B	Review of MTC/test reports	Each Lot/Batch of delivery at site	Tech Spec./Const Drawings/Relevant IS Codes	MTC/TR	v	
ii		Acceptance of the materials and installation work	As agreed/required	B	Physical/measure ment	Each installation/type/portion of works	Tech spec and const dwg	SR	v	
9	Road Works									
9.1	Construction of Sub-Grade and Earthen/Hard Shoulders									
i		Standard proctor Test	As per IS: 2720	A	Physical	One in every 2000 cum for each type and source of fill materials	As per Tech Specs and Const. Drawings, Section 900 of MOSRTH specification, IS 2720 (Pt.VII)	SR/TR	v	
ii		Dry density by core cutter method ---- OR---- Dry density in place by sand displacement method ---- OR---- any other method as per IS 2720	As per IS: 2720	A	Physical	One in every 2000 SQM area for each compacted layer.	As per Tech Specs and Const. Drawings, Section 900 of MOSRTH specification, IS 2720 (Pt. XXIX)/ IS 2720 (Pt. XXVIII),IS 2720 Relevant part	SR/TR	v	
9.2	Granular Sub-Base (GSB) (if applicable)									
i		Grading of aggregate, Atterberg limits	Set of IS Sieves	B	Physical	One test per 400 cum of test aggregate	Tech spec and const dwg, section 900 of MORTH specification	SR/TR	v	
ii		Density of compacted Layer	As required / agreed	A	Physical	one test per 1000 sqm.	Tech spec and const dwg, section 900 of MORTH specification	SR/TR	v	
iii		Deleterious Constituents	As required / agreed	B	Physical	As required	Tech spec and const dwg, section 900 of MORTH specification	SR/TR	v	
iv		CBR	As required / agreed	B	Physical	As required	Tech spec and const dwg, section 900 of MORTH specification	SR/TR	v	

FOR TENDER PURPOSE ONLY

ANNEXURE A

PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY

(On non-Judicial paper of appropriate value)

Bank Guarantee No.....

Date.....

To

(Employer's Name and Address)

Dear Sirs,

In accordance with the terms and conditions of Invitation for Bids/Notice Inviting Tender No.....1(Tender Conditions), M/s. having its registered office at2 (hereinafter referred to as the 'Tenderer'), is submitting its bid for the work of.....3 invited by4.(name of the Employer) through its Unit at(

The Tender Conditions provide that the Tenderer shall pay a sum of Rs as Earnest Money Deposit in the form therein mentioned. The form of payment of Earnest Money Deposit includes Bank Guarantee executed by a Scheduled Bank.

In lieu of the stipulations contained in the aforesaid Tender Conditions that an irrevocable and unconditional Bank Guarantee against Earnest Money Deposit for an amount of5 is required to be submitted by the Tenderer as a condition precedent for participation in the said Tender and the Tenderer having approached us for giving the said Guarantee,

we, the[Name & address of the Bank] having our Registered Office at(hereinafter referred to as the Bank) being the Guarantor under this Guarantee, hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer without any demur, merely on your first demand any sum or sums of Rs. 5(in words Rupees.....) without any reservation, protest, and recourse and without the beneficiary needing to prove or demonstrate reasons for its such demand.

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor/Contractor/Vendors in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment hereunder and the Tenderer shall have no claim against us for making such payment.

We Bank further agree that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Tender or to extend the time of submission of from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Tenderer and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Tenderer or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Tenderer or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Tenderer and notwithstanding any security or other guarantee that the Employer may have in relation to the Tenderer's liabilities.

This Guarantee shall be irrevocable and shall remain in force upto and including.....6 and shall be extended from time to time for such period as may be desired by the Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Tenderer but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms hereof. However, unless a demand or claim under this Guarantee is made on us in writing on or before the⁷ we shall be discharged from all liabilities under this Guarantee.

We, Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed.....5.....
- b) This Guarantee shall be valid up to6
- c) Unless the Bank is served a written claim or demand on or before⁷ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of

(Name of the Bank)

Date.....

Place of Issue.....

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
(A) Civil Works for RCC Control room Building (1no) & RCC Security room building (1no)					
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 2 km outside the periphery of the area cleared at location shown by BHEL/NTPC.	Sqm	620.00	8.23	5105.00
2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material up to a distance of 2km at location shown by BHEL/NTPC.. Beyond 60 cm girth upto and including 120 cm girth	each	5.00	1111.53	5558.00
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	1051.00	119.29	125378.00
4	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in soft rock complete as per direction of Engineer in charge.	Cum	50.00	231.21	11561.00
5	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in Hard rock complete as per direction of Engineer in charge.	Cum	50.00	666.63	33332.00
6	Filling available excavated earth/murram (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 2 km and lift upto 1.5 m complete as per direction of Engineer in charge.	Cum	906.00	144.09	130546.00
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	55.00	4105.97	225829.00
8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	24.00	4453.32	106880.00
9	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All works above plinth level and up to floor five level, excluding the cost of centering, shuttering and finishing: 1:2:4 (Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20/12.5mm mm nominal size)	Cum	21.00	5611.75	117847.00
10	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works upto plinth level	Cum	89.00	5246.23	466915.00
11	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works above plinth level upto floor V level	Cum	64.00	6166.96	394686.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
12	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	168.00	186.86	31393.00
13	Centering and shuttering including strutting, propping etc. and removal of form for Columns, Pillars, Piers, Abutments, Posts and Struts complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	152.00	481.31	73159.00
14	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Lintels, beams, plinth beams, girders, bressumers and cantilevers FOR ANY HEIGHT	sqm	294.00	362.14	106471.00
15	Centering and shuttering including strutting, propping etc. and removal of form for Suspended floors, roofs, landings, balconies and access platform complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	225.00	454.64	102295.00
16	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	sqm	47.00	399.70	18786.00
17	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Stairs, (excluding landings)	sqm	22.00	408.26	8982.00
18	Supplying and filling in plinth with sand/murrum under floors, including watering, ramming, consolidating and dressing complete.	Cum	15.00	1281.20	19219.00
19	Dry stone SOLING AVERAGE 23 cm thick including supply of stones, ramming with sand and preparing surface complete.	sqm	135.00	479.01	64667.00
20	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	25.00	4039.29	100983.00
21	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	80.00	4979.34	398347.00
22	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 up to floor V level. Cement mortar 1:4 (1 cement :4 coarse sand)	sqm	10.00	611.46	6115.00
23	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and finishing with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 coarse sand) finished rough with sponge. EXTERNAL PLASTER	sqm	246.00	261.94	64438.00
24	12 mm cement plaster of mix : 1:6 (1 cement: 6 coarse sand): INTERNAL PLASTER	sqm	467.00	172.89	80740.00
25	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand) DRAIN PLASTER	sqm	72.00	181.15	13044.00
26	6 mm cement plaster of mix : 1:3 (1 cement : 3 fine sand) CEILING PLASTER	sqm	222.00	149.14	33110.00
27	Providing and laying heavy duty vitrified ceramic floor tiles as approved by BHEL/NTPC in different sizes (Minimum thickness shall be 9mm) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 30mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm	Sqm	87.00	984.36	85640.00
28	Providing and laying heavy duty anti skid vertrified Ceramic floor tiles of size 300x300 mm or more (thickness shall be 9mm), of 1st quality conforming to IS : 15622, of approved make, in colours as approved by Engineer In-charge, laid on 30 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	sqm	18.00	713.99	12852.00
29	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622, of approved make, in all colours, shades in skirting, dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm,including pointing in white cement mixed with pigment of matching shade complete.	Sqm	80.00	675.88	54071.00
30	Providing & fixing Acid and alkali resistant tile in flooring on a bed of 30 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand). Tile thickness should be 20mm.	Sqm	17.00	980.72	16673.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
31	Providing & fixing dado/skirting Acid and alkali resistant tile on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand). Tile thickness should be 12mm.	Sqm	36.00	1054.65	37968.00
32	Cement concrete flooring (with ironite hardener) 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, etc. complete. 50 mm thick with 10 mm nominal size stone aggregate IS 2571	sqm	41.00	516.60	21181.00
33	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement. 18 mm thick	sqm	11.00	341.87	3761.00
34	Finishing with acid and or alkali resistant Epoxy paint/COATING, 2mm thk heavy duty industrial grade (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work	sqm	41.00	124.25	5095.00
35	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Sqm	25.00	1187.39	29685.00
36	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand), laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. Polished Granite stone slab, colour as approved by Engineer In-charge.	sqm	5.00	2313.45	11568.00
37	Providing and fixing 20 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite of any colour and shade.	Sqm	10.00	2629.02	26291.00
38	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth. Granite Stone of approved shade	Sqm	4.00	2110.29	8442.00
39	Providing and applying plaster of paris putty of 2 mm thickness of approved brandover plastered surface to prepare the surface even and smooth complete. Plaster of Paris (Gypsum Anhydrous) conforming to IS: 2547 shall be used for plaster of paris punning.	Sqm	668.00	129.04	86196.00
40	Finishing walls with Acrylic Smooth exterior emulsion weather proof paint of required shade : New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior weather proof primer applied @ 2.20 kg/10 sqm) EXTERNAL	Sqm	246.00	108.04	26579.00
41	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gms/litre (for Internal walls and ceiling), of approved manufacturer, of required shade and colour complete, as per manufacturer's specification: Two or more coats on new work INTERNAL WALLS AND CEILING	Sqm	668.00	57.17	38190.00
42	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade: Two or more coats on new work SCADA ROOM	Sqm	53.00	84.39	4473.00
43	Painting with acid alkali resistant paint of approved brand and manufacture of required colour to give an even shade: Two or more coats on new work BATTERY ROOM	Sqm	53.00	85.31	4522.00
44	White washing with lime to give an even shade : New work (three or more coats)	Sqm	200.00	18.73	3746.00
45	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	Sqm	200.00	39.36	7872.00

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
46	Supplying and fixing rolling shutters (Mechanical gear operated) of approved make, made of required size M.S. laths, interlocked together through their entire length with effective bridge depth of 12mm lath sections, interlocked with each other and ends lock arrangements for inside and outside locking with malleable cast iron clips conforming to IS: 2108 and with mechanical device chain and crank operation for operating rolling shutters complete, including the cost of providing and fixing necessary fittings and fixtures of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 75x1.02 mm (18-gauge steel) M.S. laths with 1.20 mm thick top cover	sqm	9.00	2565.09	23086.00
47	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile C: Fixing with adjustable lugs with split end tail to each jamb	meter	6.00	291.49	1749.00
48	Providing and fixing ISI marked flush door (MDF) shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters. 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	sqm	5.00	1983.71	9919.00
49	Providing and fixing factory made uPVC door frame made of uPVC extruded sections having an overall dimension as below (tolerance $\pm 1\text{mm}$), with wall thickness 2.0 mm ($\pm 0.2\text{ mm}$), corners of the door frame to be Jointed with galvanized brackets and stainless steel screws, joints mitred and Plastic welded. The hinge side vertical of the frames reinforced by galvanized M.S. tube of size 19 X 19 mm and 1mm ($\pm 0.1\text{mm}$) wall thickness and 3 nos. stainless steel hinges fixed to the frame complete as per manufacturer's specification and direction of Engineer-in-charge Extruded section profile size 48x40 mm	meter	26.00	145.40	3781.00
50	Providing and fixing to existing door frames, 24 mm thick factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm ($\pm 0.2\text{ mm}$) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm ($\pm 0.1\text{ mm}$) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm ($\pm 0.2\text{ mm}$) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm ($\pm 0.1\text{ mm}$) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C. and bathroom door shutter).	Sqm	11.00	1155.02	12706.00
51	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, galvanized light gauge rolled form supporting system in double web construction pre painted with steel capping, of approved shade and color to give grid of maximum size of 1200x600 mm as per manufacturers details including supporting grid system, expansion fasteners for suspension arrangement from RCC, providing opening for AC ducts (if required), return air grills (if required), light fixtures, etc., all complete: 15 mm thick MINERAL FIBER BOARD, in tile form of size 600mm x 600mm.	Sqm	20.00	968.16	19364.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
52	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) : For Fixed portion, Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	250.00	299.33	74834.00
53	Providing and fixing, for shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately). Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	200.00	358.41	71682.00
54	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in paneling fixed in aluminium doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of Engineer-in-charge. Pre-laminated particle board with decorative lamination on both sides	sqm	15.00	686.77	10302.00
55	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item): With tinted glass panes of 4.0 mm thickness float glass for windows	sqm	15.00	655.74	9837.00
56	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item): With toughened glass panes of 10.00 mm thickness for Partition and doors	sqm	20.00	2917.82	58357.00
57	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	kg	150.00	341.02	51154.00
58	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 300x10 mm	each	10.00	76.62	767.00
59	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 250x10 mm	each	10.00	67.93	680.00
60	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 125 mm	each	20.00	39.13	783.00
61	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete : 300x16	each	20.00	168.69	3374.00
62	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete. Single rubber stopper	each	20.00	22.27	446.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
63	Providing and fixing bright finished brass 100 mm mortice latch and lock, ISI marked, with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS : 1868) aluminium lever handles of approved quality with necessary screws etc. complete.	each	10.00	491.11	4912.00
64	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	each	9.00	558.65	5028.00
65	Providing and fixing Brass 100mm mortice latch and lock with 6 levers without pair of handles (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	Each	10.00	300.81	3009.00
66	18 mm thick moulded cement mortar band in two coats under layer 12 mm thick with cement mortar 1:5 (1 cement : 5 coarse sand) top layer 6 mm thick with cement mortar 1:4 (1 cement : 4 fine sand).	cm per m	50.00	10.63	532.00
67	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : In 75x75 mm deep chase	meter	50.00	155.64	7782.00
68	Diluting and injecting chemical emulsion for POST- CONSTRUCTIONAL anti-termite treatment (including the cost of chemical emulsion) :Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor: With Chlорpyriphos/Lindane E.C. 20% with 1% concentration	sqm	191.00	675.98	129112.00
69	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 110 mm diameter	meter	31.50	200.11	6304.00
70	Providing and fixing on wall face unplasticised - PVC moulded fittings/accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. Shoe (Plain) 110 mm Shoe	each	9.00	74.65	672.00
71	Providing and laying in situ five course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric memberane over roof consisting of first coat of bitumen primer @ 0.40Kg per sqm, 2nd & 4th courses of bonding material @ 1.20 kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, 3rd layer of roofing membrane APP modified Polymeric membrane 2.0 mm thick of 3.00 Kg/ sqm weight consisting of five layers prefabricated with centre core as 100 micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20 micron HMHDPE film. 5th, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat (item of laying brick tiles shall be paid for separately).	sqm	201.25	268.14	53964.00
72	Providing and laying brick tiles over muntry roofs, grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement, over 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat: With common burnt clay F.P.S. (non modular) brick tiles of class designation 10	sqm	201.25	337.45	67912.00
73	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto any height. Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	13024.66	54.78	713425.00
74	Making plinth protection 75mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	sqm	65.00	402.82	26184.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
75	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	300.00	66.75	20025.00
76	Steel work welded in built up sections/ framed work, including cutting, hoisting,fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	kg	200.00	61.43	12287.00
77	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.Hot finished welded type tubes	kg	300.00	94.10	28231.00
78	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade : Two or more coats on new work	sqm	100.00	79.74	7974.00
79	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	20.00	4015.24	80305.00
80	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 using 6mm down stone chips, providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification. Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	sqm	38	337.48	12825.00
81	Providing and fixing PVC pipes for cable entry conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm, pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 150mm dia complete as per direction of Engineer In-Charge.	RM	20.00	104.81	2097.00
82	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :W.C. pan with ISI marked white solid plastic seat and 390 mm high with lid complete as per direction of Engineer In-Charge.	Each	3.00	3451.18	10354.00
83	Providing and fixing approved quality paper holder fix on wall with rawl plugs all materials labours etc., all complete as directed by the Engineer-in-charge.C.P. brass	Each	3.00	382.94	1149.00
84	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :One urinal basin with 5 litre white P.V.C. automatic flushing cistern complete as per direction of Engineer In-Charge.	Each	2.00	3268.36	6537.00
85	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require: White Vitreous China Wash basin size 550x400 mm with a pair of 15 mm C.P. brass pillar taps	Each	3.00	1867.57	5603.00
86	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws hard board backing complete as per direction of Engineer In-Charge.and washers complete.	Each	4.00	841.68	3367.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
87	Providing and fixing PTMT TOWEL RAIL complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour. brass towel rail 600mm long and 20 dia mm with C.P. brass brackets complete as per direction of Engineer In-Charge.	Each	3.00	390.65	1172.00
88	Providing and fixing approved quality liquid soap dispenser and holder fix on wall with rawl plugs all materials labours etc., all complete as directed by the Engineer-in-charge.	Each	3.00	65.50	197.00
89	Providing and fixing approved brands of three layered Sintex Water tank-PVC water tanks including,lifting, positioning and cost of all labours, materials, fittings etc.complete as per direction of Engineer In-Charge.- (2000L each)	ltrs	1500.00	5.77	8660.00
90	Providing and fixing Stainless Steel A ISI 304 (18/8) KITCHEN SINK Pantry unit of sufficient size with sandwich type of platform with one sink (Nirali Make) plumbing fixture plumbing fixtures as per IS: 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required: 510x1040 mm bowl depth 200 mm complete as per direction of Engineer In-Charge.	Each	1.00	3663.17	3664.00
91	Providing and fixing PVC, soil waste and vent pipes conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm, pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 75 mm dia complete as per direction of Engineer In-Charge.	RM	20.00	65.50	1311.00
92	Providing and fixing PVC, soil waste and vent pipes conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm, pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 110 mm dia complete as per direction of Engineer In-Charge.	RM	50.00	85.16	4258.00
93	Providing and fixing PVC, soil waste and vent pipes conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm, pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 150 mm dia complete as per direction of Engineer In-Charge.	RM	10.00	104.81	1049.00
94	Providing & fixing 100 mm PVC for gully, floor or nahani trap at all heights and levels complete as per direction of Engineer In-Charge.	Each	10.00	458.55	4586.00
95	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :25 mm nominal bore complete as per direction of Engineer In-Charge.	Each	2.00	326.13	653.00
96	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :32 mm nominal bore complete as per direction of Engineer In-Charge.	Each	1.00	381.30	382.00
97	Providing and fixing brass stop cock of approved design, quality and make 15mm NB complete as per direction of Engineer In-Charge.	Each	1.00	198.47	199.00
98	Providing and fixing brass stop cock of approved design, quality and make 20mm NB complete as per direction of Engineer In-Charge.	Each	1.00	214.15	215.00
99	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc. 15 mm nominal outer dia Pipes	meter	20.00	268.73	5375.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
100	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc. 20 mm nominal outer dia Pipes	meter	20.00	313.67	6274.00
101	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc. 25 mm nominal outer dia Pipes	meter	10.00	368.64	3687.00
102	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall. 20 mm nominal outer dia Pipes	meter	20.00	201.36	4028.00
103	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall. 25 mm nominal outer dia Pipes	meter	20.00	242.20	4844.00
104	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall. 32 mm nominal outer dia Pipes	meter	20.00	315.24	6305.00
105	Providing and fixing brass bib cock of approved quality: 15 mm nominal bore complete as per direction of Engineer In-Charge.	Each	3.00	198.47	596.00
106	Providing and fixing brass bib cock of approved quality 20 mm nominal bore complete as per direction of Engineer In-Charge.	Each	3.00	214.15	643.00
107	Providing and fixing brass stop cock of approved design, quality and make 15mm NB complete as per direction of Engineer In-Charge.	Each	1.00	198.47	199.00
108	Providing and fixing brass stop cock of approved design, quality and make 20mm NB complete as per direction of Engineer In-Charge.	Each	1.00	214.15	215.00
109	Providing and fixing vista make vertical blind of approved color and brand cost is including of supply of materials, fixing, labour charges, transportation all leads, lifts, taxes etc. complete at all height and levels complete as per direction of Engineer In-Charge.	Sqm	20.00	556.82	11137.00
110	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete: Serrated with central bulb (225 mm wide, 8-11 mm thick)	meter	10.00	185.78	1858.00
111	Providing and laying Non Pressure NP-3 class (Medium duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete. 450 mm dia RCC pipes	meter	10.00	1524.48	15245.00
112	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. G.I. pipes	kg	500.00	103.65	51824.00

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
113	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	Sqm	25.00	411.67	10292.00
TOTAL AMOUNT: (A)					Rs. 4,941,470.00

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
<u>(B) Electrical works (ELECTRIFICATION FOR CONTROL ROOM (1NO.) AND SECURITY ROOM BUILDING (1NO.)</u>					
1	LED indoor luminaire, industrial grade with diffuser and heat sink, minimum 3-star BEE rating, 36W, 240V, Philips/ Surya Roshini / Wipro/ Bajaj/ Crompton make as per LM79- 08 & LM80-15 standards as approved by NTPC/BHEL	Nos	35.00	3684.81	128969.00
2	LED indoor luminaire, industrial grade with diffuser and heat sink, minimum 3-star BEE rating, 18W, 240V, Philips/ Surya Roshini / Wipro/ Bajaj/ Crompton make as per LM79- 08 & LM80-15 standards as approved by NTPC/BHEL	Nos	20.00	1228.27	24566.00
3	LED bulkhead luminaire around the building (on the outer walls), 9W, 240V, minimum 3 star BEE rating, Philips/ Surya Roshini / Wipro/ Bajaj/ Crompton make as per LM79- 08 & LM80-15 standards as approved by NTPC/BHEL	Nos	20.00	163.77	3276.00
4	Ceiling fan 1200 mm sweep 5 star type of reputed make as approved by NTPC/BHEL	Nos	6.00	2865.97	17196.00
5	Fan regulator Modular type of reputed make as approved by NTPC/BHEL	Nos	6.00	204.71	1229.00
6	6A modular type switch of reputed make as approved by NTPC/BHEL	Nos	100.00	122.83	12283.00
7	6A, 1ph, 5 pin, switched socket outlet Modular type of reputed make as approved by NTPC/BHEL	Nos	10.00	122.83	1229.00
8	16A, 1ph, 5 pin, switched socket outlet Module type of reputed make as approved by NTPC/BHEL	Nos	10.00	245.63	2457.00
9	3x6A, 1ph, 5 (2-3) pin socket outlet controlled by one 16A switch of reputed make as approved by NTPC/BHEL	Nos	5.00	409.42	2048.00
10	25A, 1ph, 5 pin, industrial socket with MCB enclosure of reputed make as approved by NTPC/BHEL	Nos	8.00	286.60	2293.00
11	63A, 3ph, 415V, industrial socket with MCB enclosure of reputed make as approved by NTPC/BHEL	Nos	2.00	402.05	805.00
12	Exhaust fan 450mm of reputed make as approved by NTPC/BHEL	Nos	12.00	7779.05	93349.00
13	Power distribution board of reputed make as approved by NTPC/BHEL	Nos	2.00	6141.35	12283.00
14	Cables, cable conduits for the above, all conduits (Embedded in wall or floor) including accessories shall be 1" pvc pipe (dia) of reputed make as approved by NTPC/BHEL	Mtr	1500.00	32.76	49140.00
15	4CX25 Sq mm Cu Cable of reputed make as approved by NTPC/BHEL	Mtr	50.00	368.48	18424.00
TOTAL AMOUNT: (B)					Rs. 369,547.00
Plus applicable GST					

PRICE BID					
(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat					
Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
C: CONSTRUCTION OF INVERTER STATIONS (4NOS) AND MCR YARD (1NO.) AND OTHER ASSOCIATED WORKS					
Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 2 km outside the periphery of the area cleared at location shown by BHEL/NTPC.	Sqm	1034.00	8.23	8513.00
2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material up to a distance of 2km at location shown by BHEL/NTPC.. Beyond 60 cm girth upto and including 120 cm girth	each	10.00	1111.53	11116.00
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	1154.00	119.30	137668.00
4	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in soft rock complete as per direction of Engineer in charge. Ordinary rock	Cum	50.00	231.21	11561.00
5	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in Hard rock complete as per direction of Engineer in charge. Hard Rock	Cum	20.00	666.62	13333.00
6	Filling available excavated earth/murram (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 2 km and lift upto 1.5 m complete as per direction of Engineer in charge.	Cum	1117.00	144.09	160947.00
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	31.00	4105.97	127286.00
8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	5.00	4453.32	22267.00
9	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All works above plinth level and up to floor five level, excluding the cost of centering, shuttering and finishing: 1:2:4 (1 Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20/12.5mm mm nominal size)	Cum	5.00	5611.75	28059.00
10	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:1½:3 (M20) (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	Cum	5.00	4730.12	23651.00
11	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works upto plinth level	Cum	114.00	5246.23	598071.00

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
12	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works above plinth level upto floor V level	Cum	91.00	6166.96	561194.00
13	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, pedestal, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	202.00	186.86	37747.00
14	Centering and shuttering including strutting, propping etc. and removal of form for all heights : plinth beams, Tie/Lintel beams, girders, bressumers and cantilevers FOR ANY HEIGHT	sqm	397.00	362.14	143772.00
15	Centering and shuttering including strutting, propping etc. and removal of form for Suspended floors, roofs, landings, balconies and access platform complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	209.00	454.64	95020.00
16	Centering and shuttering including strutting, propping etc. and removal of form for Columns, Pillars, Piers, Abutments, Posts and Struts complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	329.00	481.31	158351.00
17	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Stairs, (excluding landings)	sqm	50.00	408.26	20414.00
18	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Walls (any thickness)/cable trench wall including attached pilasters, butteresses, plinth and string courses etc.	sqm	10.00	399.70	3998.00
19	Supplying and filling in plinth with sand/murru under floors, including watering,ramming, consolidating and dressing complete.	Cum	10.00	1281.20	12812.00
20	Dry stone SOLING AVERAGE 23 cm thick including supply of stones, ramming with sand and preparing surface complete.	sqm	30.00	479.01	14371.00
21	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	20.00	4039.29	80786.00
22	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	5.00	4979.34	24897.00
23	Random rubble masonry with hard stone in foundation, below fencing and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level for fencing work with :Cement mortar 1:6 (1 cement : 6 coarse sand). Complete as per direction of Engineer-in-charge.	cum	5.00	4015.25	20077.00
24	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	sqm	200.00	181.15	36231.00
25	White washing with lime to give an even shade : New work (three or more coats)	sqm	200.00	18.73	3746.00
26	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	sqm	200.00	39.36	7872.00
27	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	sqm	100.00	1187.39	118740.00
28	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto any height. Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	17999.00	54.78	985906.00

PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
29	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	6209.00	66.75	414464.00
30	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished welded type tubes	kg	5709.00	94.10	537240.00
31	Painting with synthetic enamel paint of approved brand and manufacture/paint treatment to be suitable for Coastal corrosion to give an even shade : Two or more coats on new work	sqm	400.00	79.74	31895.00
32	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm + 0.05 %, total coated thickness with zinc coating 120 gsm as per IS: 277 in 240 mpa steel grade, 5-7 microns epoxy primer on both sides of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	sqm	271.00	411.67	111564.00
33	Providing & Grouting of dowel tubes / Shear keys / Joints of precast members / Joints of base plates with M-60 grade cementitious grout (Non Shrink) of approved make by suitable means (Free flowing / pump), curing etc. Complete as per directions of Engineer-in-charge. (The payment shall be made on the basis of actual weight of approved grout injected.) Stirrer mixed cementitious grout (non shrink) of approved make in dowel tubes / Shear keys / Joints of precast members.	kg	50.00	48.71	2436.00
35	Supplying and Laying at yard 40mm mm/20 mm size stone aggregate	cum	23.00	1147.84	26401.00
TOTAL AMOUNT: C					Rs. 4,696,054.00
Plus applicable GST					

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
D. CONSTRUCTION OF CHAIN LINK FENCING WORK WITH GATE AT 4 NOS INVERTER STATIONS, 1 NO. MCR YARD AND 1 NO. SWITCHYARD INCLUDING GRAVEL LAYING AND OTHER ASSOCIATED WORKS					
Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	144.00	119.30	17179.00
2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	25.00	4105.97	102650.00
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	32.00	4453.32	142507.00
4	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	6253.00	66.75	417398.00
5	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.Hot finished welded type tubes	kg	855.00	94.10	80459.00
6	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge. Made of G.I. wire of dia 4 mm	Sqm	1080.00	522.96	564797.00
7	Fencing with R.C.C. post placed at required distance, embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post one side only, provided with horizontal lines and two diagonals of barbed wire weighing 9.38 kg per 100 metres (minimum), between the two posts fitted and fixed with G.I. staples on wooden plugs or G.I. binding wire tied to 6 mm bar nibs fixed while casting the post (cost of R.C.C. posts, struts, earth work and concrete to be paid for separately) :- Payment to be made per metre cost of total length of barbed wire used. With G.I. barbed wire	meter	1620.00	7.87	12753.00
8	Hot Dip Galvanisation of fencing column post and stay post etc.	KG	4196.00	26.22	110003.00
9	Painting with synthetic enamel paint of approved brand and manufacture/paint treatment to be suitable for Coastal corrosion to give an even shade : Two or more coats on new work	sqm	500.00	79.74	39868.00
10	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, pedestal, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	201.00	186.86	37560.00
11	Brick work with common burn clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	48.00	4039.29	193886.00
12	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	sqm	124.00	181.15	22463.00
13	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	sqm	243.00	39.36	9565.00
14	White washing with lime to give an even shade : New work (three or more coats)	sqm	243.00	18.73	4552.00
15	Providing and fixing PVC pipes for cable entry conforming to IS 4985 of SWR quality 4 Kg & 6 Kg / Sq cm. pressure. The rate shall include cost of all fittings like plain elbow, plain tee, plain Y, 4 way tee and all required necessary specials etc., complete. jointing with rubber ring and solvent joints providing MS brackets grouted in the wall and fasteners cutting and making good the walls and floors (pipes running expose in sanitary ducts) supreme or prince quality pipes. 150mm dia complete as per direction of Engineer In-Charge.	RM	30.00	104.81	3145.00

PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
16	Supplying and Laying at yard 40mm / 20 mm size stone aggregate	cum	875.00	1147.84	1004357.00
TOTAL AMOUNT: D					Rs. 2,763,142.00
Plus applicable GST					

PRICE BID					
(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat					
Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
E. CONSTRUCTION OF ACCESS BITUMINOUS ROAD AND OTHER ASSOCIATED WORKS					
Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge. including watering, rolling compaction under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density).	Cum	66.00	119.30	7874.00
2	Banking excavated earth/borrow earth in layers not exceeding 20 cm in depth, breaking clods, watering, rolling each layer with ½ tonne roller, or wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing up, in embankments for roads, flood banks, marginal banks, and guide banks etc., lead upto 5Km and lift upto 1.5 m, under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density). : All kinds of soil	cum	53.00	308.68	16361.00
3	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge. With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	cum	48.00	1651.61	79277.00
4	Supplying and stacking at site. 63 mm to 45 mm size stone aggregate	cum	40.00	1007.38	40296.00
5	Supplying and stacking at site.53 mm to 22.4 mm size stone aggregate	cum	30.00	1147.84	34436.00
6	Supplying and stacking at siteStone screening 11.2 mm nominal size (Type B)	cum	15.00	1297.90	19469.00
7	Supplying and stacking at site Moorum (binding material for wbm)	cum	8.00	529.92	4240.00
8	Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate, watering and compacting to the required density .	cum	56.00	503.32	28186.00
9	Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications : On W.B.M. @ 0.75 Kg / sqm	sqm	315.00	27.58	8689.00
10	2 cm premix carpet surfacing with 1.8 cum and 0.90 cum of stone chippings of 13.2 mm size and 11.2 mm size respectively per 100 sqm and 52 kg and 56 kg of hot bitumen per cum of stone chippings of 13.2 mm and 11.2 mm size respectively, including a tack coat with hot straight run bitumen, including consolidation with road roller of 6 to 9 tonne capacity etc. complete (tack coat to be paid for separately). With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt	sqm	315.00	113.52	35759.00
11	Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications : On bituminous surface @ 0.50 Kg / sqm	sqm	315.00	22.07	6953.00

PRICE BID

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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
12	Providing and laying seal coat of premixed fine aggregate (passing 2.36 mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG - 10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete.	sqm	315.00	48.34	15229.00
TOTAL AMOUNT: E					Rs. 296,769.00
Plus applicable GST					

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
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F. CONSTRUCTION OF SWITCHYARD FOUNDATION AND OTHER ASSOCIATED WORKS

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 2 km outside the periphery of the area cleared at location shown by BHEL/NTPC.	Sqm	6210.00	8.23	51126.00
2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material up to a distance of 2km at location shown by BHEL/NTPC.. Beyond 60 cm girth upto and including 120 cm girth	each	5.00	1111.53	5558.00
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	1278.00	119.30	152461.00
4	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in soft rock complete as per direction of Engineer in charge.	Cum	50.00	231.21	11561.00
5	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.in Hard rock complete as per direction of Engineer in charge.	Cum	25.00	666.62	16666.00
6	Filling available excavated earth/murram (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 2 km and lift upto 1.5 m complete as per direction of Engineer in charge.	Cum	1146.00	144.09	165125.00
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	45.00	4105.97	184769.00
8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	10.00	4453.32	44534.00
9	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All works above plinth level and up to floor five level, excluding the cost of centering, shuttering and finishing: 1:2:4 (1 Cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20/12.5mm mm nominal size)	Cum	5.00	5611.75	28059.00
10	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:1½:3 (M20) (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	Cum	5.00	4730.12	23651.00
11	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works upto plinth level	Cum	148.00	5246.23	776442.00

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
12	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. All works above plinth level upto floor V level	Cum	12.00	6166.96	74004.00
13	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, pedestal, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	185.00	186.86	34570.00
14	Centering and shuttering including strutting, propping etc. and removal of form for all heights : plinth beams, Tie/Lintel beams, girders, bressumers and cantilevers FOR ANY HEIGHT	sqm	55.00	362.14	19918.00
15	Centering and shuttering including strutting, propping etc. and removal of form for Suspended floors, roofs, landings, balconies and access platform complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	56.00	454.64	25460.00
16	Centering and shuttering including strutting, propping etc. and removal of form for Columns, Pillars, Piers, Abutments, Posts and Struts complete as per direction of Engineer in charge. FOR ANY HEIGHT	sqm	351.00	481.31	168939.00
17	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Stairs, (excluding landings)	sqm	25.00	408.26	10207.00
				0.00	0.00
18	Centering and shuttering including strutting, propping etc. and removal of form for all heights : Walls (any thickness)/cable trench wall including attached pilasters, butteresses, plinth and string courses etc.	sqm	108.00	399.70	43169.00
19	Supplying and filling in plinth with sand/murruum under floors, including watering,ramming, consolidating and dressing complete.	Cum	10.00	1281.20	12812.00
20	Stone soiling 23 cm thick including supply of stones and preparing surface complete. (including ramming with sand, watering & compaction etc)	sqm	105.00	479.01	50296.00
21	Brick work with common burn clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	11.00	4039.29	44433.00
22	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	5.00	4979.34	24897.00
23	Random rubble masonry with hard stone in foundation, below fencing and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level for fencing work with :Cement mortar 1:6 (1 cement : 6 coarse sand). Complete as per direction of Engineer-in-charge.	cum	5.00	4015.25	20077.00
24	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	sqm	100.00	181.15	18116.00
25	White washing with lime to give an even shade : New work (three or more coats)	sqm	100.00	18.73	1873.00
26	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	sqm	100.00	39.36	3936.00
27	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	sqm	10.00	1187.39	11874.00
28	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto any height. Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	13032.00	54.78	713842.00
29	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	1716.00	66.75	114548.00

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
30	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished welded type tubes	kg	788.00	94.10	74154.00
31	Painting with synthetic enamel paint of approved brand and manufacture/paint treatment to be suitable for Coastal corrosion to give an even shade : Two or more coats on new work	sqm	100.00	79.74	7974.00
32	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm + 0.05 %, total coated thickness with zinc coating 120 gsm as per IS: 277 in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	sqm	39.00	411.67	16056.00
33	Providing & Grouting of dowel tubes / Shear keys / Joints of precast members / Joints of base plates with M-60 grade cementitious grout (Non Shrink) of approved make by suitable means (Free flowing / pump), curing etc. Complete as per directions of Engineer-in-charge. (The payment shall be made on the basis of actual weight of approved grout injected.) Stirrer mixed cementitious grout (non shrink) of approved make in dowel tubes / Shear keys / Joints of precast members.	kg	50.00	48.71	2436.00
34	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. G.I. pipes	kg	300.00	103.65	31095.00
TOTAL AMOUNT: F					Rs. 2,984,638.00
Plus applicable GST					

PRICE BID

(A) Construction of RCC Control room building (1 no.), RCC Security room building (1 no.) (B) Electrification work for RCC control room and security room, (C) Inverter stations (4 Nos) and MCR yard (1 No.), (D) Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying ,(E) Access Bituminous Road ,(F) Switchyard foundation , (G) Parking shed and other associated works for 20 MWp Solar PV power plant for NTPC at Gandhar,Gujarat

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
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G: CONSTRUCTION OF PARKING SHED AND OTHER ASSOCIATED WORKS

Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 2 km outside the periphery of the area cleared at location shown by BHEL/NTPC.	Sqm	56.00	8.23	462.00
2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material up to a distance of 2km at location shown by BHEL/NTPC.. Beyond 60 cm girth upto and including 120 cm girth	each	2.00	1111.53	2224.00
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 2km and lift upto 1.5m, disposed earth to be levelled and neatly dressed at location shown by BHEL/NTPC.all type of soil as per direction of Engineer in charge.	Cum	60.00	119.30	7158.00
4	Filling available excavated earth/murram (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 2 km and lift upto 1.5 m complete as per direction of Engineer in charge.	Cum	39.00	144.09	5620.00
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size).	Cum	5.00	4105.97	20530.00
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	28.00	4453.32	124694.00
7	Centering and shuttering including strutting, propping etc. and removal of form for :Foundations, footings, pedestal, bases of columns etc. for mass complete as per direction of Engineer in charge.	sqm	81.00	186.86	15136.00
8	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto any height. Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	996.00	54.78	54557.00
9	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	1680.00	66.75	112144.00
10	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.Hot finished welded type tubes	kg	1680.00	94.10	158095.00
11	Painting with synthetic enamel paint of approved brand and manufacture/paint treatment to be suitable for Coastal corrosion to give an even shade : Two or more coats on new work	sqm	95.00	79.74	7575.00
12	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm + 0.05 %, total coated thickness with zinc coating 120 gsm as per IS: 277 in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	sqm	99.00	411.67	40756.00

PRICE BID									
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Sl. No.	Description of Work	Unit	Qty.	ITEM RATE (Excluding GST)	Amount				
13	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 upto plinth level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	11.00	4039.29	44433.00				
14	12 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	sqm	72.00	181.15	13043.00				
15	White washing with lime to give an even shade : New work (three or more coats)	sqm	72.00	18.73	1349.00				
16	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	sqm	72.00	39.36	2834.00				
TOTAL AMOUNT: G					Rs. 610,610.00				
Plus applicable GST									
Activities	Summary of the activities								
A	Construction of RCC Control room building (1 no.), RCC Security room building (1 no.)				Rs. 4,941,470.00				
B	Electrification work for RCC control room and security room				Rs. 369,547.00				
C	Inverter stations (4 Nos) and MCR yard (1 No.),				Rs. 4,696,054.00				
D	Chain link fencing work with Gate at 4 Nos Inverter stations, 1 No. MCR yard and 1 No. switchyard including Gravel laying				Rs. 2,763,142.00				
E	Access Bituminous Road ,				Rs. 296,769.00				
F	Switchyard foundation				Rs. 2,984,638.00				
G	Parking shed and other associated works				Rs. 610,610.00				
Total value of the works (rounded off)					Rs. 16,662,230.00				
QUOTE PERCENTAGE (%) ABOVE/Below (+/-) (OR) AT PAR TO TOTAL AMOUNT									
QUOTED PERCENTAGE (%) IN WORDS ABOVE/Below (OR) AT PAR TO TOTAL AMOUNT									
Plus applicable GST									
NOTE:									
1. CONTRACTOR SHOULD QUOTE PERCENTAGE (%) ABOVE/Below (OR) AT PAR TO TOTAL AMOUNT									
2. QUOTED PERCENTAGE (%) IS APPLICABLE ON ALL ITEM RATES UNIFORMLY.									