

PART-III

CHAPTER - I

MILESTONES AND TIME SCHEDULE

1.0 Time of start and completion:

The time period for completion of the work is 9 (*Nine*) **Months** from the date of issue of letter of acceptance. The time period for completion of Civil works is **4 months** from the date of issue of letter of acceptance

1.1 Planning of works:

The contractor shall submit a programme of work in the form of a Bar Chart of all the activities setting out milestones for targeted completion of work within the DOC specified in the LOA. It shall indicate the forecast of the dates of commencement and completion of various activities of the work. These may be required to be amended as per direction of DFCCIL within the limitation of **09 months** as overall completion period.

1.2 Progress of Works:

The contractor shall submit monthly progress of work to DFCCIL. Regular progress review meetings (at least once in a month) shall be held with the contractor for timely completion of the work.

PART-III

CHAPTER-II

TENDER FORMS

FORM No.	SUBJECT
Form No. 1A	Offer Letter
Form No. 1B	Format for Certificate to be Submitted / Uploaded by Tenderer Alongwith The Tender Documents
Form No. 2A/2AA	Technical Eligibility Criteria Details
Form No. 2B	Financial Eligibility Criteria Details
Form No. 2C	Applicant's Party Information Form
Form No. 3	Summary of Prices
Form No. 4	Schedule of Prices and Total Prices
Form No. 5	Contract Agreement
Form No. 6	Format of Bank Guarantee for performance security
Form No. 7	Standing indemnity bond for on account payment
Form No. 7A	Indemnity Bond
Form No. 8	ECS / NEFT / RTGS Mandate form
Form No. 17	Proforma of 48 Hours Notice for Whole Work
Form No. 17A	Proforma of 48 Hours Notice for Part of the Work
Form No. 18	Proforma of Termination Notice
Form No. 18A	Proforma of Termination Notice for Part of Work
Form No. 19	Pre-Contract Integrity Pact
Form No. 20	Final Supplementary Agreement
Form No. 21	Deleted
Form No. 22	Format for Power of Attorney for Authorized representative
Form No. 23	No deviation Certificate
Form No.24	GUARANTEE BOND for water proofing works/Anti Termite Treatment Works
Form No.25	Agreement Towards Waiver Under Section 12(5) and Section 31A (5) of Arbitration and conciliation Amendment Act
Form No.26	Certification by Arbitrator appointed under Clause 63 & 64 of Indian Railways General Conditions of Contract

OFFER LETTER

Tender No: DFCCIL/NOIDA UNIT/Electrical/ Substation/ 2021/05

Name of Work: Supply, Erection, Testing and Commissioning of 33 kV Sub-stations, DG Set and related works for DFCCIL Integrated Office Cum Residential Complex at Sec-145, Noida.

To,
The Chief General Manager,
DFCCIL, Noida

We, the undersigned, declare that:

1. I/We _____ have read the various conditions to tender attached hereto and agree to abide by the said conditions. I/We also agree to keep this tender open for acceptance for a period of **120 days** from the date fixed for opening the same and in default thereof, I/We will be liable for forfeiture of my/our "Earnest Money". I/We offer to do the work for DFCCIL, at the rates quoted in the attached schedule and hereby bind myself/ourselves to complete the work in all respects within **09 months** from the date of issue of letter of acceptance of the tender.
2. I/We also hereby agree to abide by the Indian Railways Standard General Conditions of Contract, with all correction slips up-to-date and to carry out the work according to the Special Conditions of Contract and Specifications of materials and works as laid down by DFCCIL in the annexed Special Conditions/Specifications, Schedule of Rates with all correction slips up-to-date for the present contract.
3. A sum of ₹ _____ has already been deposited online as Earnest Money. Full value of the Earnest Money shall stand forfeited without prejudice to any other right or remedies in case my/our Tender is accepted and if:
 - (a) I/We do not submit the Performance Guarantee within the time specified in the Tender document;
 - (b) I/We do not execute the contract documents within seven days after receipt of notice issued by the DFCCIL that such documents are ready; and
 - (c) I/We do not commence the work within fifteen days after receipt of orders to that effect.
4. I/We have examined and have no reservations to the Bidding Documents including Addenda;
5. I/We offer to execute the Works in conformity with the Bidding Documents and within Specified Time.
6. I/We declare and certified that neither I/We _____ (Name of Sole Proprietorship Firm/Limited Company/JV/Partnership Firm/LLP) nor any of the partner of the partnership firm/JV Firm/LLP have been blacklisted/debarred by

any Ministry/Department/PSU of Govt. of India/any State from participation in tenders/contract on the date of opening of the Bids either in our individual capacity or in any firm in which we are partners. I/We are neither Bankrupt/Insolvent nor in the process of winding-up nor there is a case pending before any Court on the date of opening of the Bids either in our individual capacity or in any firm in which we are partners.

7. If our bid is accepted, we commit to submit a Performance Guarantee in accordance with the Bidding Documents;

8. If our bid is accepted, we commit to deploy key equipment and key personnel consistent with the requirements of the work.

9. We understand that this bid, together with your written acceptance thereof communicated through Letter of Acceptance (LOA), shall constitute a binding contract between us, until a formal contract is prepared and executed.

10. All information, statements and description in this bid are in all respect true, correct and complete to the best of our knowledge and belief and we have not made any tampering or changes in the bidding documents on which the bid is being submitted and if any tampering/changes or incorrect information are detected at any stage, we understand the bid will invite summarily rejection and forfeiture of bid security, the contract will be liable to be terminated along with forfeiture of performance security, even if LOA has been issued.

11. I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be debarred for tendering in DFCCIL in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the DFCCIL shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

12. I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

13. Until a formal agreement is prepared and executed, acceptance of this tender shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the letter of acceptance of my/our offer for this work.

14. We understand that you are not bound to accept the lowest bid or any other bid that you may receive.

Seal & Signature of Tenderer(s)

Date _____

Namein the capacity of
.....Duly
authorized to sign the Bid for and on behalf of.....

**FORMAT FOR CERTIFICATE TO BE SUBMITTED / UPLOADED BY
TENDERER ALONGWITH THE TENDER DOCUMENTS**

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs. 100/- The stamp paper has to be in the name of the tenderer)

Tender No: DFCCIL/NOIDA UNIT/Electrical/ Substation/ 2021/05

Name of Work: Supply, Erection, Testing and Commissioning of 33 kV Sub-stations, DG Set and related works for DFCCIL Integrated Office Cum Residential Complex at Sec-145, Noida.

I.....(Name and designation) appointed as the attorney/authorized signatory of the tenderer (including its constituents), M/s_____ (hereinafter called the tenderer) for the purpose of the Tender documents for the work of _____ as per the tender No. _____ of DFCCIL/Noida Unit, do hereby solemnly affirm and state on the behalf of the tenderer including its constituents as under:

1. I/we the tenderer (s) am/are signing this document after carefully reading the contents.
2. I/We the tenderer(s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded the tender documents from Indian Railway website www.ireps.gov.in . I/we have verified the content of the document from the website and there is no addition, no deletion or no alteration to the content of the tender document. In case of any discrepancy noticed at any stage i.e. evaluation of tenders, execution of work or final payment of the contract, the master copy available with the DFCCIL Administration shall be final and binding upon me/us.
4. I/we declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.

5. **I/We also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.**
6. **I/We declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.**
7. I/we understand that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender EMD besides banning of business for a period of upto five year. Further, I/we _____(name of the tenderer) and all my/our constituents understand that my/our offer shall be summarily rejected.
8. I/we also understand that if the certificates submitted by us are found to be false/forged or incorrect at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of EMD/SD and Performance guarantee besides any other action provided in the contract including banning of business for a period of upto five year.

SEAL AND SIGNATURE
OF THE TENDERER

Place:
Dated:

TENDERER'S CREDENTIALS

S. No	Description
1.	For Technical experience/competence , provide details of similar completed work(s) during the last Seven (07) years, ending last day of month previous to the one in which tender is invited in the proforma given in “ Form-2A/2AA ”. The bidder shall attach Certified completion certificates of similar work issued by the client.
2.	For Financial capacity and organizational resources, provide details of contractual payments received in the last three financial years and the current financial year upto the date of inviting of tender as per audited balance sheet duly certified by Chartered Accountant/Certificate from Chartered Accountant duly supported by Audited Balance Sheet/Form 16A/26AS etc. in the proforma given in “ Form-2B ”. The bidder shall attach necessary documents in support of the above.
3.	Tenderers should fill the general information about their firm including constitution of the firm in “ Form-2C ”. Attach certified copies of legal and other documents in support thereof.

TECHNICAL ELIGIBILITY CRITERIA DETAILS

**Details of the similar works completed for Govt. (as per Para 1.3.11.1 of
Preamble and General Instructions to Tenderers)**

LOA/ Contract Agreement No. and date	
Description of Work	
Contract Amount as per LOA	
Final Executed Amount as per Completion Certificate.	
Date of completion as per LOA	
Actual Date of Completion Completion date	
Whether the work was executed by Firm as single entity or as a Joint Venture or as a consortium.	
Percentage share of firm, if the work was executed as Joint Venture/Consortium <i>(Enclose copy of JV Agreement specifying the percent share of the firm in JV)</i>	
Client Details: Name of Firm and Contact Person: Address: Mobile, Telephone, fax number: E-mail:	

Note: 1. If the tenderer has completed more than one work, the form shall be numbered as Form - 2A (i), Form 2A (ii) and Form 2A (iii) and so on.

2. Copy of LOA and Work Completion Certificate issued by Client should be enclosed to verify the information given in above Form. BOQ should also be enclosed if similar nature of work is not verifiable from LOA/Client Certificate.

3. In case of JV, the bidder shall attach Certified completion certificates for each member of JV issued by the client as per Para 1.3.17.15.1 of Part-I Chapter-III of the Tender Document.

4. Experience certificates of **Similar Works** as defined in clause 1.3.11.1 of Part-I, Chapter-III and having **minimum value of 30% of advertised tender value** should only be submitted.

Signature of the
Tenderer with Seal

TECHNICAL ELIGIBILITY CRITERIA DETAILS

Details of the similar works completed for Public Listed Company (as per Para 1.3.11.1 of Preamble and General Instructions to Tenderers)

LOA/ Contract Agreement No. and date	
Description of Work	
Contract Amount as per LOA	
Final Executed Amount as per Completion Certificate.	
Date of completion as per LOA	
Actual Date of Completion	
Is the Client Firm listed on BSE/NSE? (Enclose supporting documents)	
Is average turnover of the Client Firm more than 500 crore in last 3 financial years? (Enclose supporting documents)	
Is the Client Firm incorporated/ registered at least 5 years prior to the date of opening of tender? (Enclose supporting documents)	
Client Details: Name of Firm and Contact Person: Address: Mobile, Telephone, fax number: E-mail:	

Note: 1. If the tenderer has completed more than one work, the form shall be numbered as Form - 2AA (i), Form 2AA (ii) and Form 2AA (iii) and so on.

2. Copy of Work Experience Certificate, work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company to be enclosed.

3. In case of JV, the bidder shall attach Certified completion certificates for each member of JV issued by the client as per Para 1.3.17.15.1 of Part-I Chapter-III of the Tender Document.

4. Experience certificates of **Similar Works** as defined in clause 1.3.11.1 of Part-I, Chapter-III and having **minimum value of 30% of advertised tender value** should only be submitted.

Signature of the
Tenderer with Seal

FINANCIAL ELIGIBILITY CRITERIA DETAILS**(On the letterhead of Chartered Accountant/Auditor of the Firm)****Name of Bidder/JV Partner:-**

Details of contractual payments received during the last three financial years and current financial year:-

Financial Year	Contractual Payment Received in Rs.
2018 - 2019	
2019 - 2020	
2020 - 2021	
Current Year (2021-2022)	
Total	

Note: 1. The details should be extracted from the Audited Balance Sheet Certified by the Chartered Accountant/ **Form 16-A** issued by the Employer/**Form-26AS** generated through TRACES of Income Tax Department of India as **defined at Clause 1.3.11.2 of Part-I, Chapter-III of Tender Document.**

2. The bidder/ each member of JV shall attach above certificate duly certified by the Chartered Accountant **as per Para 1.3.17.15.2 of Part-I Chapter-III of the Tender Document.**

3. Audited Balance Sheet and Form 26AS of each financial year should be enclosed in support of the above.

Seal & Signature of Chartered Accountant

ICAI Registration No. _____

UDIN No. of Certificate issued above _____

Signature of the
Tenderer with Seal

APPLICANT'S PARTY INFORMATION FORM

S. No.	Item	Detail
1	Name of firm.	
2	Constitution of firm (Company/Partnership Firm/Proprietorship firm/LLP/HUF/JV etc.	
3	Name of Authorized Representative of the firm submitting the tender:	
4	Year of Establishment of the firm.	
5	Registered Address: -	
6	Telephone Number & Mobile of the Authorized representative of the firm	
7	E-mail address of the authorized representative	
8	Telefax Number	
9	PAN No:	
10	Goods & Service Tax Registration No:	
11	PF / EPF Registration No:	
12	ESI Registration No.	

Note: 1. Attach supporting documents as mentioned in para 1.3.14 of Part-I, Chapter-III of Tender Document for Item no. 2.

1. Attach latest valid documentary evidence for Item no. 9 to 12.

Signature of the
Tenderer with Seal

SUMMARY OF PRICES

Name of work: - Supply, Erection, Testing and Commissioning of 33 kV Sub-stations, DG Set and related works for DFCCIL Integrated Office Cum Residential Complex at Sec-145, Noida.

S. No	DESCRIPTION OF SCHEDULES	COST (in Rs.)
1.	Execution of all works as per Schedule-I (Electrical Works)	12,47,07,973.00
2.	Execution of all works as per Schedule- II (Civil Works)	3,01,58,983.00
3.	Total Value of Schedule-I and Schedule- II (Excluding GST)	15,48,66,956.00
	GST @18% on Schedule-I and Schedule- II Prices	2,78,76,052.00
3.	Total Value of Schedule-I and Schedule- II including GST @18%	18,27,43,008.00

Notes:

- 1) This proforma is just for information and perusal. However, the rates are to be filled in Online mode in Financial Bid (Packet-B).
- 2) Both Schedule-I and Schedule-II includes Schedule items and Non-Schedule items.
- 3) The rates of Schedule items in Schedule-I and Schedule-II are taken from CPWD DSRs after deducting GST component.
- 4) The rates of Non-Scheduled Items in Schedule-I and Schedule-II are taken as per Last Accepted Rates/ market rate analysis.
- 5) The rates mentioned in Schedule-I and Schedule-II are inclusive of all taxes, duties and levies **except GST**. The % rates (Above/Below/At par) quoted by the tenderer shall be on the total estimated cost of Schedule-I and Schedule-II. The ***GST as legally leviable and payable by the Bidder*** under the provisions of applicable law/act ***shall be paid extra by DFCCIL***.
- 6) The **Bidders should quote their rates after considering the Input Tax Credits on their input materials and services**. Hence, ***Bidders should ensure*** that, ***full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting their rates***.
- 7) Price Variation Clause (PVC) will be applicable for this work as per **Clause 1.7 of Special Conditions of Contract (Electrical) (Part-I, Chapter-V, Section-1 of Tender Document)**.
- 8) The bidder has to be registered under CGST/IGST/UTGST/SGST Act and should submit GSTIN along with other details required under CGST/IGST/UTGST/SGST Act to DFCCIL, without which, no payment shall be released to the contractor.

SCHEDULE OF PRICES AND TOTAL PRICES

**Supply, Erection, Testing and Commissioning of 33 kV Sub-stations, DG Set and related works for
DFCCIL Integrated Office Cum Residential Complex at Sec-145, Noida.**

SCHEDULE-I: ELECTRICAL WORKS

S. No.	DSR - 2018	Description of Item	Unit	COMB. (QTY.)	Rate	Amount
SCHEDULE ITEMS (Based on CPWD DSR (E&M)-2018)						
1.0		SUB-HEAD: INTERNAL WIRING				
1.1	1.3	Wiring for Light point / Fan point / Exhaust Fan point / Call Bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit , with modular switch ,modular plate ,suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.				
1.1.1	1.3.3	Group - C	Point	48	1083.00	51984.00
1.2	1.54	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required.				
1.2.1	1.54.3	Group C	Point	42	631.00	26502.00
1.3		Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
1.3.1	1.7.1	2 X 1.5 sq.mm +1 X 1.5 sq.mm earth wire	Metre	480	186.00	89280.00
1.3.2	1.7.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Metre	210	204.00	42840.00
1.3.3	1.7.3	2 X 4 sq.mm +1 X 4 sq.mm earth wire	Metre	115	235.00	27025.00
1.4	1.31	Supplying and fixing suitable size GI box (sheet thickness 1.2 mm) with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections etc. as required.	Each	10	358.00	3580.00
1.5	1.32	Supplying and fixing suitable size GI box (sheet thickness 1.2 mm) with modular plate and cover in front on surface or in recess	Each	12	442.00	5304.00

		,including providing and fixing 6 pin 15 / 16 & 5 / 6 Amps modular socket outlet and 15 / 16 Amps modular switch, connection, etc.as required.				
1.6	1.56	Supplying and fixing suitable size GI box (sheet thickness 1.2 mm) with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required. (For light plugs to be used in non residential buildings). UPS SOCKET	Each	3	520.00	1560.00
1.7	1.20	Supplying and fixing of following sizes of steel conduit along, with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
1.7.1	1.20.2	25 mm	Metre	450	147.00	66150.00
1.7.2	1.20.3	32 mm	Metre	100	181.00	18100.00
1.8	2.3	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator				
1.8.1	2.3.1	6 way, Double door	Each	2	1483.00	2966.00
1.8.2	2.3.3	12 way, Double door	Each	2	1833.00	3666.00
1.9	2.10	Supplying and fixing 5 Amps. to 32 Amps. rating, 240/415 V,10 KA,`C' series, Miniature circuit breaker (MCB) suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
1.9.1	2.10.1	Single pole	Each	36	178.00	6408.00
1.9.2	2.10.3	Double pole	Each	4	496.00	1984.00
		TOTAL OF INTERNAL WIRING				3,47,349.00
2.0		SUB-HEAD: LAYING OF HT CABLE & TERMINATION				
2.1	8.7	Laying of one number XLPE power cable of 33 KV grade of following size in the existing RCC HUME/ METAL/HDPE pipe as required				
2.1.1	8.7.2	Above 120 sq. mm and upto 400 sq. mm	RM	1585	104.00	164840.00

2.2	8.5	Laying of one number XLPE power cable of 33 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
2.2.1	8.5.2	Above 120 sq. mm and upto 400 sq. mm	RM	150	434.00	65100.00
2.3	CIVIL DSR 2018	Supply and laying of the following RCC Hume pipe including excavation, refilling as required for cable entry including the cost of sealing the ends as required complete.				
2.3.1	19.6.3	250 mm dia	RM	1250	674.00	842500.00
2.3.2	19.6.2	150 mm dia	RM	750	413.60	309750.00
2.4	14.6	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required.				
2.4.1	14.16.5	200 mm dia	RM	800	534.00	427200.00
2.4.2	14.16.3	120 mm dia	RM	30	304.00	9120.00
		TOTAL OF LAYING OF HT CABLE & TERMINATION			18,18,510.00	
3.0		SUB-HEAD: LAYING OF LT CABLES				
a		The rate shall also include the following :				
b		Providing and fixing junction boxes with covers including painting where ever required.				
c		Providing all fixing accessories such as clamping devices nuts, bolts and screws.				
d		Wherever the cables are of aluminium and bus bars of copper, then bimetallic lugs shall be used.				
e		All cable shall be laid with one diameter gap.				
f		All cables shall be IS approved.				
g		Double compression glands shall be used.				
h		Fire retardent paint one meter on both side of wall penetration and at termination as per specifications.				
i		Burried LT cables to be laid atleast 750 mm below ground.				

3.1	7.1	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
3.1.1	7.1.1	Upto 35 sq. mm	RM	10	288.00	2800.00
3.1.2	7.1.2	Above 35 sq. mm and upto 95 sq. mm	RM	185	302.00	55870.00
3.1.3	7.1.3	Above 95 sq. mm and upto 185 sq. mm	RM	90	314.00	28260.00
3.1.4	7.1.4	Above 185 sq. mm and upto 400 sq. mm	RM	557	354.00	197178.00
3.2	7.5	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing, RCC HUME/ METAL/HDPE pipe as required				
3.2.1	7.5.1	Upto 35 sq. mm	RM	370	28.00	10360.00
3.2.2	7.5.2	Above 35 sq. mm and upto 95 sq. mm	RM	1635	42.00	68670.00
3.2.3	7.5.3	Above 95 sq. mm and upto 185 sq. mm	RM	820	57.00	46740.00
3.2.4	7.5.4	Above 185 sq. mm and upto 400 sq. mm	RM	4994	100.00	499400.00
		TOTAL OF LAYING OF LT CABLES				9,09,358.00
4.0		SUB-HEAD: EXTERNAL LIGHTING				
4.1	9.1	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
4.1.1	9.1.1	3x2.5sqmm	Each	232	177.00	41064.00
		TOTAL OF EXTERNAL LIGHTING				41,064.00
		TOTAL OF SCHEDULE ITEMS				31,16,281.00

NON SCHEDULE ITEMS						
5.0		SUB-HEAD: HT PANEL AND BATTERY CHARGER				
a		The rates under this section shall also include:				
b		Supporting rigid frame work.				
c		All fixing accessories such as foundation bolts, nuts, bolts, masonry work etc as required.				
d		Touching up all damaged paint with approved paint shade.				
e		Interlocking shall be provided between transformer door and VCB HT breaker panel. When transformer door open, respective breaker shall be tripped.				
f		CT & PT ratings are indicative and may be changed at the time of design.				
g		Panels shall have Digital meters with LCD display as per requirements and these digital meters shall be suitable for communication on Ethernet or any other protocol and looped up to ethernet switch.				
h		The panel shall be wired and looped to enable its data transfer on Ethernet to EMS/BMS software.				
i		Protection relays shall have facility to communicate to EMS/BMS and looped up to ethernet switch.				
j		Degree of protection for transformer enclosure shall be as per IP-.(Applicable for oil Type Transformer Only)				
5.1		HT PANEL (METER)				

NS	Supply, Installation, Testing & Commissioning of Indoor type, floor mounted Single breaker cubical panel (Total Type Tested Assembly as per IEC 61439) of suitable size fabricated from CRCA steel sheet of 2 mm thick for frame work, enclosures and doors, 3 mm thick for gland plates, dust, damm & vermin proof, IP-4X, fully interlocked, horizontal isolation, extensible type, horizontal draw out, air insulated, metal clad switchboard having single isolation features complete with circuits as detailed below. The switchboard shall be complete with necessary PVC insulated copper busbars, small wiring, labels, cable eyes, cable termination to receive XLPE cables and suitable for operation on 33 kV, 3 phase, 50 Hz, earthed system with a rupturing capacity of 1500 MVA at 33KV for 3 Sec as per specification. Panel shall be internal arc tested (Access from front, lateral & rear) for 25kA/1sec as per IEC62271-200.				
	BREAKER PANEL EQUIPPED WITH:				
	01 No. Metal clad housing with truck having 800A 4P integral VCB with electrically operated mechanism. (Spring charge motor - 230 V AC).				
	1 Set of air insulated copper bus bar				
	1 Sets of dual core CT's				
	Core I - 200/5A Class 5P-10 (15 VA)				
	Core-II 200/5A class 0.5 (15 VA)				
	1 Shunt trip/closing coil 24 V D.C.				

		1 HT cable joint box for 2X3C x 300 sq.mm XLPE (E) cable (33 KV)				
		1 Set On/Off, Trip & Circuit health indication lights				
		1 PT 33 kV/110V, 100VA, accuracy class 1, 3 Ph. Cast Resin				
		INSTRUMENT AND RELAY PANEL EQUIPPED WITH:				
		1 No. multifunction meter for V, Amp, KW, KVA, KWH, KVAH, KVARh, P.F. Amp-h, Hz measurements with Ethernet port.				
		1 No. Triple pole Microprocessor I.D.M.T. overcurrent and earth fault relay, with two outer elements connected for overcurrent and the middle element for earth fault protection, Overcurrent setting 50% - 200%, Earth fault setting 20% -80% and with instantaneous element on all 3 pole settings 500-2000% on overcurrent and 200-800% on earth fault (51, 51N, 50 and 50N)				
		1 No. circuit breaker control switch for electrical (T/N/C).				
		1 No. Master trip relay (86)				
		1 No. Trip circuit supervision relay (95)				
		1 set of Red/Green indicating lamps for close and open position.				
		1 No. Amber indicating lamp for auto trip.				
		1 No. clear indicating lamp for trip circuit healthy.				
		1 set of white indicating lamps one per phase.				
		1 No. blue indicating lamp for spring charged.				
		1 No. Push button on front door for emergency trip.				

		1 No. cable box suitable for cable termination to receive Incoming 33 kV XLPE Cable 2x3 Core 300Sq. mm.				
		1 No. hooter.				
		1 set of ferrules, control MCBs, limit switch and wiring as required.				
		The switchboard shall be complete with earth bus, all interconnections, labels wiring, etc as required.	Set	1	1168256.00	1168256.00
5.2		HT PANEL (CO)				
	NS	Supply, Installation, Testing & Commisioning of Indoor type, floor mounted Four breaker cubical panel (Total Type Tested Assembly as per IEC 61439) of suitable size fabricated from CRCA steel sheet of 2 mm thick for frame work, enclosures and doors, 3 mm thick for gland plates, dust, damm & vermin proof, IP-4X, fully interlocked, horizontal isolation, extensible type, horizontal draw out, air insulated, metal clad switchboard having single isolation features complete with circuits as detailed below. The switchboard shall be complete with necessary PVC insulated copper busbars, small wiring, labels, cable eyes, cable termination to receive XLPE cables and suitable for operation on 33 kV, 3 phase, 50 Hz, earthed system with a rupturing capacity of 1500 MVA at 33KV for 3 Sec as per specification. Panel shall be internal arc tested (Access from front, lateral & rear) for 25kA/1sec as per IEC62271-200				
		1 NO. INCOMING BREAKER PANEL EQUIPPED WITH:				

		1 No. Air insulated metal clad housing				
		1 set of 3 phase PVC insulated copper busbars 800 Amp rating				
		6 Nos. single pole cluster type Isolating contacts i.e. plug and switches.				
		1 No. Triple pole draw out truck mounted 1500 MVA, 800 Amp, 33 kV Vacuum Circuit Breaker.				
		1 No. Trip free motor spring charged closing mechanism complete with necessary auxiliary switches, emergency hand trip device and mechanical 'OFF' & 'ON' indicator.				
		1 No. 24 volt DC shunt trip coil.				
		1 No. 24 volt DC closing coil.				
		1 No. 230 volt AC spring charge motor.				
		3 Nos. Cast resin dual core current transformers of ratio 100A/5A, 15 VA burden Class 5P10 for protection and class 0.5 for metering.				
		3 Nos. Single Phase cast resin horizontal draw out line potential transformer ratio 33 kV/110 volts, connected delta/star with HV and LV connections, H.V. and L.V. fuses, Isolating plugs for H.V. and L.V. connection.				
		1 set of thermostatically controlled Strip heater to prevent absorption of moisture.				
		INSTRUMENT AND RELAY PANEL EQUIPPED WITH:				
		1 No. multifunction meter for V, Amp, KW, KVA, KVAh, KVARh, P.F. Amp-h, Hz measurements with Ethernet port.				

		1 No. Triple pole Microprocessor I.D.M.T. overcurrent and earth fault relay, with two outer elements connected for overcurrent and the middle element for earth fault protection, Overcurrent setting 50% - 200%, Earth fault setting 20% -80% and with instantaneous element on all 3 pole settings 500-2000% on overcurrent and 200-800% on earth fault (51, 51N, 50 and 50N)				
		1 No. circuit breaker control switch for electrical (T/N/C).				
		1 No. Master trip relay (86)				
		1 No. Trip circuit supervision relay (95)				
		1 set of Red/Green indicating lamps for close and open position.				
		1 No. Amber indicating lamp for auto trip.				
		1 No. clear indicating lamp for trip circuit healthy.				
		1 set of white indicating lamps one per phase.				
		1 No. blue indicating lamp for spring charged.				
		1 No. Push button on front door for emergency trip.				
		1 No. cable box suitable for cable termination to receive Incoming 33 kV XLPE Cable 2x3 Core 300Sq. mm.				
		1 No. hooter.				
		1 set of ferrules, control MCBs, limit switch and wiring as required.				
		1 No. Bus Earthing Truck & 1 No. Cable Earthing Truck				
		OUTGOINGS (TWO NOS. FOR TRANSFORMER FEEDERS-1600 kVA EACH EQUIPPED WITH):				
		1 No. Air insulated metal clad housing.				
		1 set of 3 phase PVC insulated				

		copper busbars 800 Amp rating.				
		6 Nos.single pole cluster type Isolating contacts i.e. plug and switches.				
		1 No. Triple pole draw out truck mounted 1500MVA, 800 Amp, 33 kV Vacuum Circuit Breaker.				
		1 No. Trip free motor spring charged closing mechanism complete with necessary auxiliary switches, emergency hand trip device and mechanical 'OFF' & 'ON' indicator.				
		1 No. 24 volt DC shunt trip coil.				
		1 No. 24 volt DC closing coil.				
		1 No. 230 volt AC Spring Charging Motor./Motor wound spring operated mechanism				
		3 Nos. Cast resin dual core current transformers of ratio 30A/5A, 15 VA burden Class 5P10 for protection and class 0.5 for metering.				
		1 set of thermostatically controlled Strip heater to prevent absorption of moisture.				
		INSTRUMENT AND RELAY PANEL EQUIPPED WITH:				
		1 No. multifunction meter for V, Amp, KW, KVA, KVAh, KVARh, P.F. Amp-h, Hz measurements with Ethernet port.				
		1 set of Red/Green indicating lamps for close and open position.				
		1 No. Amber indicating lamp for auto trip.				
		1 No. clear indicating lamp for trip circuit healthy.				
		1 No. blue indicating lamp for spring charged.				

		1 set of white indicating lamps one per phase.				
		1 No. Push button on front door for emergency trip.				
		1 No. Triple pole Microprocessor I.D.M.T. overcurrent and earth fault relay, with two outer elements connected for overcurrent and the middle element for earth fault protection, Overcurrent setting 50% - 200%, Earth fault setting 20% -80% and with instantaneous element on all 3 pole settings 500-2000% on overcurrent and 200-800% on earth fault (51, 51N, 50 and 50N)				
		1 No. circuit breaker control switch for electrical (T/N/C).				
		1 set of control MCBs, limit switches wiring etc. as required.				
		1 No. Master trip relay (86).				
		1 No. Trip circuit supervision relay (95).				
		1 No. hooter of 230 volt with NO-NC contactor for 24 volt DC				
		12 window Annunciation with hooter				
		1 No. cable termination box to receive 33 kV XLPE cable 3 core 185sq mm.				
		OUTGOING (ONE NO. FOR ESS-II) EQUIPPED WITH:				
		1 No. Air insulated metal clad housing.				
		1 set of 3 phase PVC insulated copper busbars 800 Amp rating.				
		6 Nos.single pole cluster type Isolating contacts i.e. plug and switches.				
		1 No. Triple pole draw out truck mounted 1500MVA, 800 Amp, 33000 volts Vacuum Circuit Breaker.				

		1 No. Trip free motor spring charged closing mechanism complete with necessary auxiliary switches, emergency hand trip device and mechanical 'OFF' & 'ON' indicator.				
		1 No. 24 volt DC shunt trip coil.				
		1 No. 24 volt DC closing coil.				
		1 No. 230 volt AC Spring Charging Motor./Motor wound spring operated mechanism				
		3 Nos. Cast resin dual core current transformers of ratio 80/5, 15 VA burden, Class 5P10 for protection & class 0.5 for metering.				
		1 set of thermostatically controlled Strip heater to prevent absorption of moisture.				
		INSTRUMENT AND RELAY PANEL EQUIPPED WITH:				
		1 No. multifunction meter for V, Amp, KW, KVA, KVAh, KVAh, KVAh, P.F. Amp-h, Hz measurements with Ethernet port.				
		1 set of Red/Green indicating lamps for close and open position.				
		1 No. Amber indicating lamp for auto trip.				
		1 No. clear indicating lamp for trip circuit healthy.				
		1 No. blue indicating lamp for spring charged.				
		1 set of white indicating lamps one per phase.				
		1 No. Push button on front door for emergency trip.				

		1 No. Triple pole Microprocessor I.D.M.T. overcurrent and earth fault relay, with two outer elements connected for overcurrent and the middle element for earth fault protection, Overcurrent setting 50% - 200%, Earth fault setting 20% -80% and with instantaneous element on all 3 pole settings 500-2000% on overcurrent and 200-800% on earth fault (51, 51N, 50 and 50N)				
		1 No. circuit breaker control switch for electrical (T/N/C).				
		1 set of control MCBs, limit switches wiring etc. as required.				
		1 No. Master trip relay (86).				
		1 No. Trip circuit supervision relay (95).				
		1set auxiliary relay for WT, OT & Buckholz Trip				
		1set auxiliary relay for WT, OT & Buckholz Alarm				
		1set auxiliary relay for oil level & Buckholz Alarm				
		1 No. cable termination box to receive 33 kV XLPE cable 3 core 240sq mm.				
		The switchboard shall be complete with earth bus, all interconnections, labels wiring, etc as required.	Set	1	4477410.00	4477410.00
5.3		HT PANEL (HHRI)				
	NS	Supply, Installation, Testing & Commisioning of Indoor type, floor mounted Four breaker cubical panel (Total Type Tested Assembly as per IEC 61439) of suitable size fabricated from CRCA sheet of 2 mm thick for frame work, enclosures and doors, 3 mm thick for gland plates, dust, damp & vermin proof, IP-4X fully interlocked horizontal isolation, extensible type,				

		horizontal draw out, air insulated, metal clad switchboard having single isolation features complete with circuits as detailed below. The switchboard shall be complete with necessary PVC insulated copper busbars, small wiring, labels, cable eyes, cable termination to receive XLPE cables and suitable for operation on 33 kV 3 phase, 50 cycle, earthed system with a rupturing capacity of 1500 MVA at 33KV as per specification. Panel shall be internal arc tested (Access from front, lateral & rear) for 25kA/1sec as per IEC62271-200				
		1 NO. INCOMING BREAKER PANEL EQUIPPED WITH:				
		1 No. Air insulated metal clad housing				
		1 set of 3 phase PVC insulated copper busbars 800Amp rating				
		6 Nos. single pole cluster type Isolating contacts i.e. plug and switches.				
		1 No. Triple pole draw out truck mounted 1500 MVA, 800 Amp, 33000 volts Vacuum Circuit Breaker.				
		1 No. Trip free motor spring charged closing mechanism complete with necessary auxiliary switches, emergency hand trip device and mechanical 'OFF' & 'ON' indicator.				
		1 No. 24 volt DC shunt trip coil.				
		1 No. 24 volt DC closing coil.				
		1 No. 230 volt AC spring charge motor.				
		3 Nos. Cast Resin dual core Current transformers of ratio 80A/5A, 15 VA burden Class 0.5 for metering and Class				

		5P10 for protection.				
		3 Nos. Single Phase cast resin horizontal draw out line potential transformer ratio 33 KV/110 volts, connected delta/star with HV and LV connections, H.V. and L.V. control MCBs, Isolating plugs for H.V. and L.V. connection.				
		1 set of thermostatically controlled Strip heater to prevent absorption of moisture.				
		INSTRUMENT AND RELAY PANEL EQUIPPED WITH:				
		1 No. multifunction meter for V, Amp, KW, KVA, KVAh, KVARh, P.F. Amp-h, Hz measurements with Ethernet port.				
		1 No. Triple pole Microprocessor IDMT overcurrent & earth fault relay with two outer elements connected for overcurrent protection and the middle element for earth fault protection, overcurrent setting 50% - 200% & Earth fault setting 20% - 80% (51 and 51N).				
		1 No. circuit breaker control switch for electrical (T/N/C).				
		1 No. Master trip relay (86)				
		1 No. Trip circuit supervision relay (95)				
		1 set of Red/Green indicating lamps for close and open position.				
		1 No. Amber indicating lamp for auto trip.				
		1 No. clear indicating lamp for trip circuit healthy.				
		1 set of white indicating lamps one per phase.				
		1 No. blue indicating lamp for spring charged.				

		1 No. Push button on front door for emergency trip.				
		1 No. cable box suitable for cable termination to receive Incoming 33 kV XLPE Cable 1x3 Core 240Sq. mm.				
		1 No. hooter.				
		1set of ferrules, control MCBs, limit switch and wiring as required.				
		1 No. Bus Earthing Truck & 1 No. Cable Earthing Truck				
		OUTGOINGS (THREE NOS. FOR TRANSFORMERS FEEDER 1250 kVA) EACH EQUIPPED WITH:				
		1 No. Air insulated metal clad housing.				
		1 set of 3 phase PVC insulated copper busbars 800 Amp rating.				
		6 Nos. single pole cluster type Isolating contacts i.e. plug and switches.				
		1 No. Triple pole draw out truck mounted 1500MVA, 800 Amp, 33000 volts Vacuum Circuit Breaker.				
		1 No. Trip free motor spring charged closing mechanism complete with necessary auxiliary switches, emergency hand trip device and mechanical 'OFF' & 'ON' indicator.				
		1 No. 24 volt DC shunt trip coil.				
		1 No. 24 volt DC closing coil.				
		1 No. 230 volt AC Spring Charging Motor/Motor wound spring operated mechanism				
		3 Nos. Cast resin dual core current transformers of ratio 30/5, 15 VA burden Class 5P10 for protection & class 0.5 for metering.				
		1 set of thermostatically controlled Strip heater to				

		prevent absorption of moisture.				
		INSTRUMENT AND RELAY PANEL EQUIPPED WITH:				
		1 No. multifunction meter for V, Amp, KW, KVA, KVARh, P.F. Amp-h, Hz measurements with Ethernet port.				
		1 set of Red/Green indicating lamps for close and open position.				
		1 No. Amber indicating lamp for auto trip.				
		1 No. clear indicating lamp for trip circuit healthy.				
		1 No. blue indicating lamp for spring charged.				
		1 set of white indicating lamps one per phase.				
		1 No. Push button on front door for emergency trip.				
		1 No. Triple pole Microprocessor I.D.M.T. overcurrent and earth fault relay, with two outer elements connected for overcurrent and the middle element for earth fault protection, overcurrent setting 50% - 200%, Earth fault setting 20% -80% and with instantaneous element on all 3 pole settings 500-2000% on overcurrent and 200-800% on earth fault (51, 51N, 50 and 50N)				
		1 No. circuit breaker control switch for electrical (T/N/C).				
		1 set of control MCBs, limit switches wiring etc. as required.				
		1 No. Master trip relay (86).				
		1 No. Trip circuit supervision relay (95).				
		1set auxiliary relay for WT, OT & Buckholz Trip				
		1set auxiliary relay for WT, OT & Buckholz Alarm				

		1set auxiliary relay for oil level & Buckholz Alarm				
		1 No. Restricted earth fault protection relay (64) (built-in).				
		1 No. hooter of 230 volt with NO-NC contactor for 24 volt DC				
		12 window Annunciation with hooter				
		1 No. cable termination box to receive 33 kV XLPE cable 3 core 185sq mm.				
		The switchboard shall be complete with earth bus, all interconnections, labels wiring, etc as required.	Set	1	4477410.00	4477410.00
5.4		BATTERY CHARGER AND MF BATTERIES				
	NS	Supply, Erection, Testing and Commissioning of 24 volt DC 65 AH sealed maintenance free batteries with semi conductor (fullwave rectifier) charger with auto/ manual/trickle/boost charge facility. Battery charging units with MCCB suitable for 230 V complete including one no. distribution board having 100A MCCB as incomer and 18 Nos. 20/16A SP MCB's (D.C. duty) as outgoing complete with commucation able to BMS on Ethertnet/open protocol for status as required and as per technical specifications.	Set	2	128237.00	256474.00
		TOTAL OF HT PANEL & BATTERY CHARGER				1,03,79,550.00

6.0		SUB-HEAD: TRANSFORMERS				
6.1	NS	Supply, Installation, testing and commissioning of 1250 kVA, 3 phase, 50 Hz outdoor type copper wound, delta/star connected (vector group-DYn 11), oil immersed, naturally oil cooled (ONAN), core type Distribution transformer with no load voltage ratio of 33000/415 Volts and with on Load Tap Changer in step of + 1.25% from (+5%) to (-15%) on HV side, sixteen Nos. taps and seventeen position complete with locking device. The transformer shall be suitable for operation at ambient temperature of 50 deg C and shall be supplied with suitable neutral terminal on LT side and all accessories such as lifting lugs, breather, Buchholz's relay with alarm and trip contacts, magnetic oil gauge, air release valve, oil conservator, dial type temperature indicator, H.T cable on HT sides and bus duct termination on LT sides, earthing terminals, explosion vent, drain valve with plug inclusive of first filling of oil as per IS 335 (with latest amendments), diagram and rating plate & marshalling box. The transformer shall conform to IS 1180- of level-II in all respects like insulation levels, temperature rise, impedance voltage and losses.	Set	2	2673742.00	5347484.00

6.2	NS	Supply, Installation, testing and commissioning of 1600 kVA, 3 phase, 50 Hz outdoor type copper wound, delta/star connected (vector group-DY 11), oil immersed, naturally oil cooled (ONAN), core type Distribution transformer with no load voltage ratio of 33000/415 Volts and with on Load Tap Changer in step of + 1.25% from (+5%) to (-15%) on HV side sixteen Nos. tape and seventeen position complete with locking device. The transformer shall be suitable for operation at a temperature of 50 deg C and shall be supplied with suitable neutral terminal on LT side and all accessories such as lifting lugs, breather, Buchholz's relay with alarm and trip contacts, magnetic oil gauge, air release valve, oil conservator, dial type temperature indicator, H.T cable on HT and bus duct termination on LT sides, earthing terminals, explosion vent, drain valve with plug inclusive of first filling of oil as per IS 335 (with latest amendments), diagram and rating plate & marshalling box. The transformer shall conform to IS 1180- of level-II in all respects like insulation levels, temperature rise, impedance voltage and losses.	Set	2	3096992.00	6193984.00
		TOTAL OF TRANSFORMERS				1,15,41,468.00
7.0		SUB-HEAD: MAIN LT PANEL, CAPACITOR PANEL & BUS DUCT				
a		The rates for the distribution boards apart from the Breakers and instruments, shall also				

		include the following :				
b		Supporting rigid steel framework.				
c		Cubicle type, 2 mm CRCA/Aluzinc sheet steel enclosed.				
d		Complete with interconnections and distribution bus bars.				
e		Proper bonding to earth.				
f		Painting/lettering on Breakers and distribution boards, indicating the location they serve. Circuit diagram to be provided on each panel.				
g		Providing cable clamps / supports within distribution boards cable alley.				
h		Distribution panels shall be Powder Coated with Siemens gray paint shade no. RAL-7032/7035.				
i		Degree of protection for following type of distribution panel enclosure shall be as per IS:13947-1993.				
j		IP 42 for indoor panels.				
k		IP 54 for kitchen and laundry panels.				
l		IP 55 for outdoor panels.				
m		Tinned copper / GI earth bus as specified in the BOQ shall be provided through out the length of each board.				
n		All hinged door shall be earthed through 2.5 sq mm tinned braided copper wire.				
o		All panels shall have provision of the following:				
p		Pad locking of Switch board doors.				
q		Pad locking of MCCB's handles in "OFF" Position.				
r		All PTs / control transformer shall be provided with centre tap earth secondary.				

s		Current density of aluminium shall be 1 sq mm for 0.8 amps for rated current of bus bars and current density of copper shall be 1 sq.mm for 1.25 amps for rated current of bus bars subject to short circuit and temperature rise calculation.				
t		The Switchboard shall have provision for entry of all XLPE/PVC Al Armoured cables/bus duct from the top/bottom as required.				
u		All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The busbar insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and busbar supports shall be used.				
v		Thermostatically controlled Space Heater/ light/ air filter shall be provided for each vertical compartment.				
w		Padlocking facility shall be provided on all outgoing feeders.				
x		Panel shall be Ethernet ready to connect with EMS/BMS.				
y		All communication devices shall be wired and looped on ethernet switch.				
z		All measuring instruments (Meters) shall be of digital electronic with LCD display and suitable communication port like Modbus/Ethernet and compatible with EMS.				
aa		All incoming air circuit breakers shall be placed in single tier formation and outgoing vertical in Dual tier formation .				
ab		All ACB's shall have all standard accessories such as CT's, Arc Chute, Safety Shutters etc. All ACBs shall have communication port based on Modbus/Ethernet for				

		communication to EMS. All power metering data as well as operation/maintenance data shall be available to EMS.				
ac		The ACB shall have LED indications to indicate type of fault.				
ad		ACB shall have a rated operational voltage of 415V AC, rated insulation voltage of 1000 volts AC, rated impulse voltage of 12kV.				
ae		ACB shall have Ready to Close Contact along with LSIG protection.				
af		ACBs shall be provided with top horizontal and bottom vertical terminal adapters on both sides for proper cable connections/bus duct connections.				
ag		No derating in ACBs till 50 deg.c and hence suitable rating to be chosen				
ah		All MCB's shall be of minimum 10 kA breaking capacity.				
ai		The breaking capacity of MCCB's are mentioned panel wise. All MCCBs shall be plug-in type with microprocessor type trip unit. All MCCBs shall have suitable communication port based on Modbus/Ethernet. All MCCBs shall provide all power metering data as well as operation/maintenance data to EMS.				
aj		All motor feeders MCCBs shall be of motor duty.				
ak		All MCCB's shall be provided with operating mechanism for door interlock.				
al		All fault level breaking capacity indicated shall be Ics value at 415 volts.				
am		All MCCB shall have variable overload settings.				

an		MCCBs shall have a rated operational voltage (Ue) of 415V, insulation voltage (Ui) of 690 V (AC 50/60 Hz) & impulse voltage (Uimp) of not less than 8kV.				
ao		MCCBs shall be current limiting type having a double break design.				
ap		MCCBs shall preferably be single frame size of same series for all ratings for ease of maintenance.				
aq		All microprocessor based MCCBs to have trip history, Neutral protection & fault differentiation				
7.1		MAIN LT PANELS (HHRI)				
	NS	Supply, Installation, testing and commissioning of main LT panel of the following extensible cubicle type indoor floor mounting Powder coated, modular compartmentalized IP 42, Total Type Tested Assembly as per IEC: 61439, dust and vermin proof, fabricated from CRCA steel sheet for frame work, enclosures and doors, 3 mm thick for gland plates, switchboard suitable for use at 415 volts 3 phase 4 wire 50 cycle system and to withstand a symmetrical fault level of 45 MVA at 415 volts (50kA) with indication lamps; accessories etc. as required and complete with necessary PVC insulated copper busbars, small wiring, labels, cable eyes, cable termination to receive XLPE cables with following incoming and outgoing switchgears with protection and metering and etc. as per specification and schematic diagram with DG Controller for Auto Synchronizing, Auto sharing & Auto Load Management				

		including auto start / auto stop of DG Set with Incomer's, ACB's Buscoupler switching, interlocking complete as per specification with following switchgear.				
		TRANSFORMER INCOMING (3 Nos.) EACH EQUIPPED WITH:				
		1 No.2000 Amp 415 volt grade 50 kA 4P EDO ACB with built-in Ethernet each complete with.				
		3 nos cast resin dual core current transformer of 2000/5 (for 1250KVA TRF) ratio class 0.5 for metering, 15 VA Burden.				
		1 set of three R Y B indicating lamps with 6A MCB.				
		Red / green / amber ON / OFF / Trip indicating lamps.				
		Spring charge indication lamp.				
		Breaker control switch.				
		1 Set PT 415/root3 V / 110/root3 V; 100 VA; class 1.0				
		1 No. Master trip relay (86)				
		1 No Trip supervision relay (95)				
		Illuminated push button for healthy circuit.				
		1 No. multifunction meter for V, Amp, KW, KVA, KVAR, KVAh, KVAH, KVARh, PF, Amp-h, Hz measurements with ethernet port				
		3 Nos. of cast resin CT of ratio 2000/5 (for 1250 KVA (TRF), class 0.5, 15 VA Burden for APFC relay.				
		AGC-245 (DEIF)/ComAp-IM-NT (Ansi Code) 2 Sets				

		Microprocessor based GRID control & management package with built in AMF, Auto synchronizing, Auto-load sharing, auto VAR sharing, auto -load management, fault protection for over current, reverse power, under voltage, over voltage, under frequency, over -frequency, Voltage Dependent Over current, Unbalance Voltage, Unbalance Current, Under Excitation, Over Excitation, Over Load, Over Speed, Phase Sequence Error, Battery Over Voltage, Battery Under Voltage, df/dt (ROCOF), Vector Surge, Directional Over Current, Under Voltage & Reactive Power U & Q<, low battery voltage, power factor, KW, KWH, KVAR & KVA all the above features should be available in single unit. Unit should be capable of isochronous load sharing. All displays should be digital. The generator sequencing should be automatic. The D.G. sets must start & stop automatically based on systems load demand .The unit must be able to control the engine speed without the need for a motorized head/potentiometer				
		Terminal to receive 2000 Amp from 7x4x300 sq mm Al armoured cables				
		DG SET INCOMINGS (2 nos. 500 KVA) Each having:				
		1 No. 800 Amp, 415 volt grade, 45 MVA, 50 kA, 3P EDO ACB with ethernet port complete				
		1 No. 225 A Neutral disconnecting power contactor with time delay (timer).				

		1 set of three R Y B indicating lamps with 6A MCB.				
		Red / green / amber ON / OFF / Trip indicating lamps.				
		Breaker control switch.				
		1 Set PT 415/root3 V / 110/root3 V; 100 VA; class 0.5				
		1 No. Master trip relay (86)				
		Illuminated push button for healthy circuit.				
		1 No. multifunction meter for V, Amp, KW, KVA, KVAR, KVAh, KVAH, KVARh, PF, Amp-h, Hz measurements with ethernet port				
		AGC-242 (DEIF)/ ComAp-IG-NT-GC (ANSI -CODE) 2 Sets				
		Microprocessor based engine generator control & management package with built in AMF, Auto synchronizing, Auto-load sharing, auto VAR sharing ,Common PF control, auto - load management,Fuel optimize managment,Asymmetric load sharing (LS), fault protection for over current, reverse power, under voltage, over voltage, under frequency, over -frequency, Voltage Dependent Over current, Unbalance Voltage, Unbalance Current, Under Excitation, Over Excitation,Over Load, Over Speed, Phase Sequence Error,Crank Faliure,Battery Over Voltage,Battery Under Voltage, df/dt (ROCOF), Vector Surge, Directional Over Current, Under Voltage & Reactive Power U & Q<, engine fault annunciation & auto shutdown for high temperature, low lube oil pressure, over speed, low				

		battery voltage, power factor, KW, KWH, KVAR & KVA all the above features should be available in single unit. Unit should be capable of isochronous load sharing. All displays should be digital. The generator sequencing should be automatic the D.G. sets must start & stop automatically based on systems load demand .The unit must be able to control the engine speed without the need for a motorized head/potentiometer				
		Illuminated push button for healthy circuit.				
		Terminal to receive 800 Amp with 3x4x300 sqmm				
		1 No. automatic battery charger with DC volt meter and DC ammeter.				
		DG SET INCOMING (1 no. 750 KVA) Each having:				
		1 No. 1250 Amp, 415 volt grade, 45 MVA, 50 kA, 3P EDO ACB with built-in ethernet port complete				
		1 No. 250 A Neutral disconnecting power contactor with time delay (timer).				
		1 set of three R Y B indicating lamps with 6A MCB.				
		Red / green / amber ON / OFF / Trip indicating lamps.				
		Breaker control switch.				
		1 Set PT 415/root3 V / 110/root3 V; 100 VA; class 1.0				
		1 No. Master trip relay (86)-415 V AC				
		Illuminated push button for healthy circuit.				
		1 No. multifunction meter for V, Amp, KW, KVA, KVARh, PF,				

		Amp-h, Hz measurements with ethernet port				
		AGC-242 (DEIF)/ ComAp-IG-NT-GC (ANSI -CODE) 1 Set				
		Microprocessor based engine generator control & management packAge with built in AMF , Auto synchronizing, Auto-load sharing, auto VAR sharing ,Common PF control, auto - load management,Fuel optimize managment,Asymmetric load sharing (LS), fault protection for over current, reverse power, under voltage, over voltage, under frequency, over -frequency, Voltage Dependent Over current, Unbalance Voltage, Unbalance Current, Under Excitation, Over Excitation,Over Load, Over Speed, Phase Sequence Error,Crank Faliure,Battery Over Voltage,Battery Under Voltage, df/dt (ROCOF), Vector Surge, Directional Over Current, Under Voltage & Reactive Power U & Q<, engine fault annunciation & auto shutdown for high temperature, low lube oil pressure, over speed, low battery voltage, power factor, KW, KWH, KVAR & KVA all the above features should be available in single unit. Unit should be capable of isochronous load sharing. All displays should be digital. The generator sequencing should be automatic the D.G. sets must start & stop automatically based on systems load demand .The unit must be able to control the engine speed without the need for a motorized head/				

		potentiometer				
		Illuminated push button for healthy circuit.				
		Terminal to receive 1250Amp -.with 4x4x300sqmm				
		1 No. automatic battery charger with DC volt meter and DC ammeter.				
		DG SET INCOMING (1 no. 365 KVA) Each having:				
		1 No. 630 Amp, 415 volt grade, 45 MVA, 50 kA, 3P EDO ACB with built-in ethernet port complete				
		1 No. 140 A Neutral disconnecting power contactor with time delay (timer).				
		1 set of three R Y B indicating lamps with 6A MCB.				
		Red / green / amber ON / OFF / Trip indicating lamps.				
		Breaker control switch.				
		1 Set PT 415/root3 V / 110/root3 V; 100 VA; class 1.0				
		1 No. Master trip relay (86)				
		Illuminated push button for healthy circuit.				
		1 No. multifunction meter for V, Amp, KW, KVA, KVAh, KVAh, PF, Amp-h, Hz measurements with ethernet port				
		AGC-242 (DEIF)/ ComAp-IG-NT-GC (ANSI CODE) 1 Set				

		Microprocessor based engine generator control & management package with built in AMF , Auto synchronizing, Auto-load sharing, auto VAR sharing ,Common PF control, auto-load management, Fuel optimization managment, Asymmetric load sharing (LS), fault protection for over current, reverse power, under voltage, over voltage, under frequency, over-frequency, Voltage Dependent Over current, Unbalance Voltage, Unbalance Current, Under Excitation, Over Excitation,Over Load, Over Speed, Phase Sequence Error,Crank Faliure,Battery Over Voltage,Battery Under Voltage, df/dt (ROCOF), Vector Surge, Directional Over Current, Under Voltage & Reactive Power U & Q<, engine fault annunciation & auto shutdown for high temperature, low lube oil pressure, over speed, low battery voltage, power factor, KW, KWH, KVAR & KVA all the above features should be available in single unit. Unit should be capable of isochronous load sharing. All displays should be digital. The generator sequencing should be automatic the D.G. sets must start & stop automatically based on systems load demand .The unit must be able to control the engine speed without the need for a motorized head/potentiometer				
		Illuminated push button for healthy circuit.				
		Terminal to receive 630Amp - .with 2x4x300sqmm				

		1 No. automatic battery charger with DC volt meter and DC ammeter.				
		SOLAR INCOMINGS (50KW) (4 Nos.) EACH EQUIPPED WITH:				
		1 No. multifunction meter for KV, Amp, KW, KVA, KVAh, KVArh, PF, Amp-h, HZ measurements with communication port RS-485				
		4 Nos. 100 Amp, 50kA, 4P MCCB complete with microprocessor trip unit having LSIG protection with communication port Rs 485.				
		4 Nos. 85 A NO-NC power contactor				
		Illuminated push button for healthy circuit.				
		4-CT cast resin 100/5 (for 50 kW Solar) 15 VA Burden				
		4 Nos. Master trip relay (86)				
		Intelisys Hybrid (Ansi Code)/ComAp 1 Set				
		SOLAR Synchronization Controller for Auto Synchronizing, Auto sharing & Auto Load Management including:				
		Microproces based with, fault protection for over current, reverse power, under voltage, over voltage, under frequency, over-frequency, Voltage Dependent Over current, Unbalance Voltage, Unbalance Current, Under Excitation, Over Excitation, Over Load, Phase Sequence, Directional Over Current, Under Voltage, all the above features should be available in single unit. Unit should be capable of isochronous load sharing. All displays should be digital.				
		Terminal to receive 100 Amp 1x4x50 sqmm Al -XLPE-cable				

		BUSBAR-1 for Solar				
		Electrolytic high conductivity Copper Three phase and neutral busbars rated at 400 Amp throughout having a maximum current density of 1.25 amp per sq mm suitable to withstand symmetrical fault level of 35 MVA at 415 volts. The neutral busbar is to be of 100% capacity.				
		OUTGOING UNITS				
		1 No. 400 Amp, 50 kA, 4P MCCB complete with microprocessor trip unit having LSIG protection with communication port RS 485.				
		BUSBAR BETWEEN TWO TRANSFORMERS: SECTION-I & II and SECTION II & III				
		Electrolytic high conductivity Copper three phase and neutral busbars rated at 2500 Amp throughout having a maximum current density of 1.25 amp per sq mm suitable to withstand symmetrical fault level of 45 MVA at 415 volts. The neutral busbar is to be of 100% capacity.				
		BUS-COUPLER-1 & 2 each having:				
		1 Nos. 2500 Amp 415 volt grade 45 MVA, 50 kA, 4P EDO ACB with ethernet port complete with:				
		6 Nos. NO/NC contacts.				
		Red/Green/amber ON/ OFF/ trip indicating lamps.				
		Spring charge Indication lamp.				
		24 V DC shunt trip coil.				
		Under voltage release 240 volt AC.				
		Illuminated push button for healthy circuit.				
		Breaker control switch.				
		Motor wound spring closing				

		mechanism.				
		INTERLOCKING				
		The Bus section and Incoming ACB's shall be electrically interlocked with to achieve the sequence of operation, in case of manual override mode.				
		OUTGOING UNITS				
		SECTION-I				
		1 Nos. 800 Amp 415 volt grade 50 kA 4P EDO ACB with in-built ethernet port.				
		1 Nos. 800 Amp 415 volt grade 50 kA 3P EDO ACB with in-built ethernet port.				
		4 Nos. 630 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		2 Nos. 100 Amp, 50kA, 4P MCCB complete with microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		SECTION-II				
		1 No. 800 Amp 415 volt grade 50 kA 3P EDO ACB with in-built ethernet port.				
		2 Nos. 630 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		4 Nos. 400 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		2 Nos. 100 Amp, 50kA, 4P MCCB complete with microprocessor based trip unit having LSIG protection complete with communication port RS 485				

		SECTION-III				
		4 Nos. 800 Amp 415 volt grade 50 kA 4PN EDO ACB with in-built ethernet port.				
		1 Nos. 630 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		2 Nos. 400 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		1 No. 125 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		3 Nos. 100 Amp, 50kA, 4P MCCB complete with microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		1 No. 63 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		The Main Panel shall be complete with all interconnections, risers, internal wiring, labels etc complete as required.	Set	1	14422694.00	14422694.00
7.2		CAPACITOR BANKS WITH AUTOMATIC CONTROL PANELS (HHRI)				
		The rates for the capacitor bank panels apart from the switches and instruments shall also include the following:				
a		Supporting rigid steel framework.				

b		Cubicle type, 2 mm CRCA sheet steel enclosed.				
c		Complete with interconnections and distribution bus bars.				
d		Providing cable clamps/supports within panels cable alley.				
e		The breaking capacity of MCCB's are mentioned panel wise. All MCCB's shall be with microprocessor trip unit.				
f		Automatic capacitor control panels shall be powder coated with Siemens Grey RAL 7032/7035.				
g		Enclosure of all capacitor control panel shall be as per IS 13947-1993.				
h		All MCCB shall be provided with operating mechanism for door interlock.				
i		4PN MCCB shall means 3 pole MCCB with adequate size of neutral link.				
j		All copper bus bars shall be factory tinned.				
k		Tinned copper / GI earth bus shall be provided through out the length of each panel.				
l		All automatic control panel shall have provision for the following:				
m		Padlocking of Switch board doors.				
n		padlocking of MCCB's handles in OFF position.				
o		All hinged door shall be earthed through 2.5 sq.mm tinned braided copper wire.				
p		All PT's / Control transformer shall be provided with centre tap earth secondary.				
q		All incoming and outgoing feeders have Pad locking facility.				
r		All bus bars section/backside panels shall have pad locking facility and hinged type doors.				

7.2.1	<p>Supply, Installation, Testing and Commissioning of Automatic control panels with capacitors, fabricated out of 2 mm CRCA sheet steel in cubicle compartmentised, free standing, floor mounted, dust and vermin proof with reinforcement of suitable size, angle iron, channel, 'T' sections and/or flats wherever necessary. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before powder coating as per specifications and final approved shade. 2 Nos. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415V, 3 phase, 4 wire, 50 HZ supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel in the form of shop drawings before fabrication. Galvanised hardwares with zinc passivation shall be used in fabrication of panels. The system shall be provided with Automatic & Manual mode similar or equivalent to Datar make APFC panels. It shall provide rated 400 KVAR with MPP heavy duty dielectric self healing type shunt capacitor with 14% D-tuned harmonic filter with current limiting device discharge resistor in suitable nos. of steps & of suitable rating of capacitors, as per specifications with necessary PVC insulated copper busbars, small wiring, labels, cable eyes, cable termination to receive bus duct/XLPE cables. The panel</p>				
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		shall also comply with following:				
		INCOMER				
		1 No. 800 Amp 415 volt grade 50 kA 3P EDO ACB with in-built ethernet port.				
		1 No. Digital solid multifunction meter for KV, Amp, KW, KVA, KVAh, KVArh, PF, Amp-h, HZ measurements with ethernet port.				
		1 Set of phase indication lights				
		Set of 3P&N Copper Conductor Bus-bars 800A. (50 kA)				
		OUTGOING				
		2 sets of 200A 3P MCCB with DOM 35kA with				
		185A 3P Capacitor Duty contactor with 230 V A.C. supply				
		4 sets of 125A 3P MCCB with DOM 35kA with				
		125A 3P Capacitor Duty contactor with 230 V A.C. supply				
		1 sets of 100A 3P MCCB with DOM 35kA with				
		70A 3P Capacitor Duty contactor with 230 V A.C. supply				
		2 sets of 32A 3P MCCB with DOM 35kA with				
		32A 3P Capacitor Duty contactor with 230 V A.C. supply				
		1 No. 12 step APFCR Intelligent Digital Relay, microprocessor based with binary operation without time delay as per specification.				
		9 Sets self illuminated Red-Green (ON-OFF) push buttons				
		2 Nos. 12.5 KVAR 3P shunt capacitor with 14% D-tunned reactor				

		1 No. 25 KVAR 3P shunt capacitor with 14% D-tuned reactor				
		4 Nos. 50 KVAR 3P shunt capacitor with 14% D-tuned reactor				
		2 Nos. 75 KVAR 3P shunt capacitor with 14% D-tuned reactor				
		1 No. Selector switch for auto-off-manual				
		On/Off Ind.Light				
		Timer				
		Aux. Contactor				
		Complete LT Panel as per description under item 7.2.1	Set	1	1304100.00	1304100.00
7.3		MAIN LT PANELS (CORP TOWER)				
	NS	Supply, Installation, Testing and Commissioning of main LT panel of the following extensible cubicle type indoor floor mounting Powder coated, modular compartmentalized IP 42, total type tested as per IEC 61439, dust and vermin proof, fabricated from CRCA steel sheet of 2 mm thick for frame work, enclosures and doors, 3 mm thick for gland plates, switchboard suitable for use at 415 volts 3 phase 4 wire 50 cycle system and to withstand a symmetrical fault level of 45 MVA at 415 volts, (50kA) with indication lamps, accessories etc. as required and complete with necessary PVC insulated copper busbars, small wiring, labels, cable eyes, cable termination to receive XLPE cables with following incoming and outgoing switchgears with protection and metering etc. as per specification and schematic diagram with DG Controller for Auto				

		Synchronizing , Auto sharing & Auto Load Management including auto start / auto stop of DG Set with Incomer's, ACB's Buscoupler switching, interlocking complete with following switchgear:				
		TRANSFORMER INCOMING (2 Nos.) EACH EQUIPPED WITH:				
		1 No. 2500 Amp 415 volt grade 50 kA 4P EDO ACB with built-in Ethernet each complete with:				
		3 Nos. cast resin current transformer of 2500/5 ratio (for 1600 KVA TRF) class 0.5 for metering, 15 VA Burden.				
		1 No. multifunction meter for V, Amp, KW, KVA, KVARh, PF, Amp-h, Hz measurements with ethernet port				
		1 set of three R Y B indicating lamps.				
		Red / green / amber ON / OFF / Trip indicating lamps.				
		Spring charge indication lamp.				
		Breaker control switch.				
		1 Set of PT 415/root3 V / 110/root3 V; 100 VA; class 1.0				
		1 No. Master trip relay (86)- 415 V AC				
		1 No Trip supervision relay (95)				
		Illuminated push button for healthy circuit.				
		1-CT epoxy cast 2500/5 (for 1600 KVA (TRF) 15 VA Burden for APFC relay.				
		AGC-245 (DEIF)/ComAp-IM-NT (Ansi Code) 2 Set				

		<p>SITC of Microprocessor based GRID control & management packge with built in AMF, Auto synchronizing, Auto-load sharing, auto VAR sharing, auto-load management, fault protection for over current, reverse power, under voltage, over voltage, under frequency, over-frequency, Voltage Dependent Over current, Unbalance Voltage, Unbalance Current, Under Excitation, Over Excitation, Over Load, Over Speed, Phase Sequence Error, Battery Over Voltage, Battery Under Voltage, df/dt (ROCOF), Vector Surge, Directional Over Current, Under Voltage & Reactive Power U & Q<, low battery voltage, power factor, KW, KWH, KVAR & KVA. all the above features should be available in single unit. Unit should be capable of isochronous load sharing. All displays should be digital. The generator sequencing should be automatic the D.G. sets must start & stop automatically based on systems load demand. The unit must be able to control the engine speed without the need for a motorized head/potentiometer</p>				
		Terminal to receive 2500Amp from 2500 Amps 4PN -CU Busduct				
		DG SET INCOMINGS (1 No. 1500 KVA) Each having:				
		1 No. 2500 Amp 415 volt grade 45 MVA 50 kA 3P EDO ACB with built-in Ethernet complete with:				
		1 No. 400 A Neutral disconnecting power contactor with time delay (timer).				

		1 set of three R Y B indicating lamps.				
		Red / green / amber ON / OFF / Trip indicating lamps.				
		Breaker control switch.				
		1 Set PT 415/root3 V / 110/root3 V; 100 VA; class 1.0				
		1 No. Master trip relay (86)-415 V AC				
		Illuminated push button for healthy circuit.				
		1 No. multifunction meter for V, Amp, KW, KVA, KVARh, PF, Amp-h, Hz measurements with ethernet port				
		DG SET INCOMINGS (1 No. 1010 KVA) Each having:				
		1 No. 1600 Amp 415 volt grade 45 MVA 50 kA 3P EDO ACB with built-in Ethernet complete with:				
		1 No. 400 A Neutral disconnecting power contactor with time delay (timer).				
		1 set of three R Y B indicating lamps.				
		Red / green / amber ON / OFF / Trip indicating lamps.				
		Breaker control switch.				
		1 Set PT 415/root3 V / 110/root3 V; 100 VA; class 1.0				
		1 No. Master trip relay (86)-415 V AC				
		Illuminated push button for healthy circuit.				
		1 No. multifunction meter for V, Amp, KW, KVA, KVARh, PF, Amp-h, Hz measurements with ethernet port				
		AGC-242 (DEIF)/ComAp-IG-NT-GC (ANSI CODE) 2Sets				

		<p>Microprocessor based engine generator control & management packAge with built in AMF, Auto synchronizing, Auto-load sharing, auto VAR sharing, Common PF control, auto - load management, Fuel optimize managment,vAsymmetric load sharing (LS), fault protection for over current, reverse power, under voltage, over voltage, under frequency, over -frequency, Voltage Dependent Over current, Unbalance Voltage, Unbalance Current, Under Excitation, Over Excitation, Over Load, Over Speed, Phase Sequence Error, Crank Faliure, Battery Over Voltage, Battery Under Voltage, df/dt(ROCOF), Vector Surge, Directional Over Current, Under Voltage & Reactive Power U & Q<, engine fault annunciation & auto shutdown for high temperature, low lube oil pressure, over speed, low battery voltage, power factor, KW, KWH, KVAR & KVA all the above features should be available in single unit. Unit should be capable of isochronous load sharing. All displays should be digital. The generator sequencing should be automatic the D.G. sets must start & stop automatically based on systems load demand .The unit must be able to control the engine speed without the need for a motorized head/potentiometer</p>				
		Illuminated push button for healthy circuit.				
		Terminal to receive 2000Amp -.with 7x3.5x300sqmm				

		1 No. automatic battery charger with DC volt meter and DC ammeter.				
		SOLAR INCOMINGS (50KW) (2 Nos.)-EACH EQUIPPED WITH:				
		1 No. multifunction meter for V, Amp, KW, KVA, KVAR, KVAh, KVARh, PF, Amp-h, Hz measurements with ethernet port				
		2 Nos. 100 Amp, 50kA, 4P MCCB complete with microprocessor trip unit having LSIG protection complete with communication port RS 485				
		2 Nos. 85 A NO-NC power contactor				
		Illuminated push button for healthy circuit.				
		2-CT epoxy cast 100/5 (for 50KW SOLAR) 15 VA Burden				
		2 Nos . Master trip relay (86)				
		Intelisys Hybrid (Ansi Code) ComAp 1 Set				
		SOLAR Synchronization Controller for Auto Synchronizing, Auto sharing & Auto Load Management including:				
		Microproces based with fault protection for over current, reverse power, under voltage, over voltage, under frequency, over -frequency, Voltage Dependent Over current, Unbalance Voltage, Unbalance Current, Under Excitation, Over Excitation, Over Load, Phase Sequence, Directional Over Current, Under Voltage, all the above features should be available in single unit. Unit should be capable of isochronous load sharing. All displays should be digital.				
		Terminal to receive 100 Amp 1 x4x50 sqmm Al -XLPE-				

		cable				
		BUSBAR-1 for Solar				
		Electrolytic high conductivity Copper three phase and neutral busbars rated at 250 Amp throughout having a maximum current density of 1.25 amp per sq mm suitable to withstand symmetrical fault level of 35 MVA at 415 volts. The neutral busbar is to be of 100% capacity.				
		OUTGOING UNITS				
		1 No. 250 Amp, 50kA, 4P MCCB complete with microprocessor trip unit having LSIG protection with communication port RS 485.				
		BUSBAR BETWEEN TWO TRANSFORMERS - SECTION-I& II				
		Electrolytic high conductivity Copper three phase and neutral busbars rated at 4000Amp throughout having a maximum current density of 1.25 amp per sq mm suitable to withstand symmetrical fault level of 45 MVA at 415 volts. The neutral busbar is to be of 100% capacity.				
		BUSCOUPLER-1				
		1 Nos. 4000 Amp 415 volt grade 45 MVA, 65 kA, 4P EDO ACB complete with:				
		6 Nos. NO/NC contacts.				
		Red/Green/amber ON/ OFF/ trip indicating lamps.				
		Spring charge Indication lamp.				
		24 V DC shunt trip coil.				
		Under voltage release 240 volt AC.				
		Illuminated push button for healthy circuit.				
		Breaker control switch.				
		Motor wound spring closing mechanism.				

		INTERLOCKING				
		The Bus section and Incoming ACB's shall be electrically interlocked with to achieve the sequence of operation, in case of manual override mode.				
		OUTGOING UNITS				
		SECTION-I				
		1 No. 1000 Amp 415 volt grade 35 MVA 50 kA TP EDO ACB complete with in-built ethernet port.				
		2 No. 800 Amp 415 volt grade 35 MVA 50 kA 4P EDO ACB with in-built ethernet port.				
		2 No. 630 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		1 No. 400 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		3 Nos. 250 Amp, 50kA, 4P MCCB complete with microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		3 Nos. 200 Amp, 50kA, 4P MCCB complete with microprocessor trip based trip unit having LSIG protection complete with communication port RS 485				
		2 Nos. 125 Amp, 50kA, 4P MCCB complete with microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		1 No. 100 Amp, 50kA, 4P MCCB complete with microprocessor based trip unit having LSIG protection				

		complete with communication port RS 485				
		SECTION-II				
		2 Nos. 1250 Amp 415 volt grade 35 MVA 50 kA 4P EDO ACB complete with in-built ethernet port.				
		1 No. 1000 Amp 415 volt grade 35 MVA 50 kA 3P EDO ACB complete with in-built ethernet port.				
		2 Nos. 800 Amp 415 volt grade 35 MVA 50 kA 4P EDO ACB complete with in-built ethernet port.				
		1 No. 400 Amp, 50kA, 4P MCCB complete with Microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		1 No. 250 Amp, 50kA, 4P MCCB complete with microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		1 No. 100 Amp, 50kA, 4P MCCB complete with microprocessor based trip unit having LSIG protection complete with communication port RS 485				
		The Main Panel shall be complete with all interconnections, risers, internal wiring, labels etc complete as required.				
		Complete LT Panel as per description under item 7.3	Set	1	11583234.00	11583234.00
7.4		CAPACITOR BANKS WITH AUTOMATIC CONTROL PANELS				
		The rates for the capacitor bank panels apart from the switches and instruments shall also include the following :				
		Supporting rigid steel				

		framework.				
		Cubicle type, 2 mm CRCA sheet steel enclosed.				
		Complete with interconnections and distribution bus bars.				
		Providing cable clamps/supports within panels cable alley.				
		The breaking capacity of MCCB's are mentioned panel wise. All MCCB's shall be with microprocessor based trip unit. All MCCBs shall provide LSIG protection. All MCCBs shall have communication port RS 485.				
		APFC panel shall be OEM make and design. Capacitor, reactor and APFC controller shall be of same make.				
		Automatic capacitor control panels shall be powder coated with Siemens Grey RAL 7032/7035.				
		Enclosure of all capacitor control panel shall be as per IS 13947-1993.				
		All MCCB shall be provided with operating mechanism for door interlock.				
		All copper bus bars shall be factory tinned.				
		Tinned copper / GI earth bus shall be provided through out the length of each panel.				
		All automatic control panel shall have provision for the following:				
		Padlocking of Switch board doors.				
		padlocking of MCCB's handles in OFF position.				
		All hinged door shall be earthed through 2.5 sq.mm tinned braided copper wire.				
		All PT's / Control transformer shall be provided with centre tap earth secondary.				

		All incoming and outgoing feeders have Pad locking facility.				
		All bus bars section / backside panels shall have pad locking facility and hinged type doors.				
7.4.1		Supply, Installation, Testing and Commissioning of Automatic control panels with capacitors, fabricated out of 2 mm CRCA sheet steel in cubicle compartmentised, free standing, floor mounted, dust and vermin proof with reinforcement of suitable size, angle iron, channel, 'T' sections and / or flats wherever necessary. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before powder coating as per specifications and final approved shade. 2 Nos. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415V, 3 phase, 4 wire, 50 Hz supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel in the form of shop drawings before fabrication. Galvanised hardwares with zinc passivation shall be used in fabrication of panels. The system shall be provided with Automatic & Manual mode similar or equivalent to Datar make APFC panels. It shall provide rated 500 KVAR with MPP heavy duty dielectric self healing type shunt capacitor with 14% D-tuned harmonic filter with current limiting device discharge resistor in suitable nos. of steps & of suitable rating of capacitors, as				

		per specification with necessary PVC insulated copper busbars, small wiring, labels, cable eyes, cable termination to receive bus duct/XLPE cables The panel shall also comply with following:				
		CAPACITOR BANK 500 kVAR				
		INCOMER				
		1 No. 1000 Amp 415 volt grade 35 MVA 50 kA 3P EDO ACB complete with in-built ethernet port.				
		Digital meter with LCD display to display all relevant parametrs as per specification and with communication port RS 485				
		1 Set of phase indication lights				
		1 No. Digital solid multifunction meter for KV, Amp, KW, KVA, KVAh, KVArh, PF, Amp-h, HZ measurements with ethernet port.				
		Set of 3P&N Copper Conductor Bus-bars 1000A. (50 kA)				
		OUTGOING				
		6 sets of 100A 3P MCCB with DOM 35kA with:				
		70 A 3P Capacitor Duty contactor with 230 V A.C. supply				
		4 sets of 125A 3P MCCB with DOM 35kA with				
		125A 3P Capacitor Duty contactor with 230 V A.C. supply				
		2 sets of 200A 3P MCCB with DOM 35kA with				
		185A 3P Capacitor Duty contactor with 230 V A.C. supply				
		1 No. 12 step APFCR Intelligent Digital Relay, microprocessor based with				

		binary operation without time delay as per specification.				
		12 Sets self illuminated Red-Green (ON-OFF) push buttons				
		6 Nos. 25 KVAR 3P shunt capacitor with 14% D-tunned reactor				
		4 Nos. 50 KVAR 3P shunt capacitor with 14% D-tunned reactor				
		2 Nos. 75 KVAR 3P shunt capacitor with 14% D-tunned reactor				
		1 No. Selector switch for auto-off-manual				
		On/Off Ind.Light				
		Timer				
		Aux. Relay				
		Complete LT Panel as per description under item 7.4.1	Set	2	1630125.00	3260250.00
7.5		Supply, Erection and testing of the following sandwich type bus duct three Phase with neutral busbar of 100% capacity and 50% integrated housing ground, totally enclosed, dust and vermin proof with IP 65 protection for outdoor busduct and IP54 for indoor busduct as per IEC 61439-6 , totally type tested assembly, 3 mm thick extruded Aluminium alloy/GI enclosure, powder coated. All relevant type test certificates pertaining to rating required shall be submitted by Contractor. Busbar material of 99.9% purity copper and to have short-circuit withstand capacity of minimum 50 kA for 1 sec. All busbars are fully insulated using halogen free polyester sheath of thermic class B/F. NB: All other accessories other than mentioned in BOQ if required for the purpose of installation like supporting				

		structures, canopy, phase cross over, expansion joint, MS structure etc shall be in the scope of Contractor and no separate payment shall be made for the same.				
		BUS DUCT 2500A				
7.5.1		Straight Feeder	RM	40	49223.00	1968920.00
7.5.2		90 Deg Elbow	Nos.	4	24896.00	99584.00
7.5.3		Flange End	Nos.	4	55060.00	220240.00
7.5.4		Termination Links	Nos.	4	29895.00	119580.00
7.5.5		Copper Flexible (Braided)	Nos.	4	41857.00	167428.00
7.5.6		Edgewise Hanger	Nos.	20	241.00	4820.00
7.5.7		Adopter Box	Nos.	6	28690.00	172140.00
		BUS DUCT 2000A				
7.5.8		Straight Feeder	RM	50	31324.00	1566200.00
7.5.9		90 Deg Elbow	Nos.	6	19097.00	114582.00
7.5.10		Flange End	Nos.	6	37704.00	226224.00
7.5.11		Termination Links	Nos.	6	26858.00	161148.00
7.5.12		Copper Flexible (Braided)	Nos.	6	27865.00	167190.00
7.5.13		Edgewise Hanger	Nos.	30	227.00	6810.00
7.5.14		Adopter Box	Nos.	6	25616.00	153696.00
		BUS DUCT 1000A				
7.5.15		Straight Feeder	RM	30	29601.00	888120.00
7.5.16		Flange End	Nos.	4	21347.00	85388.00
7.5.17		Elbows	Nos.	4	11840.00	47360.00
7.5.18		Edgewise Hanger	Nos.	14	219.00	3006.00
7.5.19		Copper Flexible (Braided)	Nos.	4	19895.00	79580.00
7.5.20		Adopter Box	Nos.	4	21518.00	86072.00
7.5.21		Termination Links	Nos.	4	13563.00	54252.00
		TOTAL OF LT PANEL				3,69,62,678.00
8.0		SUB-HEAD IV: EARTHING				
a		This shall be read in conjunction with specifications and drawings.				
b		Rates shall also include the following :				
c		All fixing accessories such as saddles, screws rawal plugs etc.				

d		Jointing by rivetting and brazing in case of copper earthing. Jointing by welding / bolting in case of GI earthing.				
e		Cutting chases / holes and making good the same wherever required.				
f		Effective, adequate and proper interconnections.				
g		Use of copper thimbles/bi-metallic connection wherever required.				
h		Earthing system shall comply to IS:3043-1987.				
i		All earthing pits shall be interconnected.				
j		All equipment motors, DB's, panels to be connected on both ends (double earthing) with suitable strip / wires.				
k		Soil resistivity test shall be conducted of the area where earth pits are to be located.				
l		Excavation of earth, refilling, watering, ramming and making good.				
m		Testing of each earth station and submission of test results duly signed by Engineer-in-Charge.				
n		Earth grid shall be made at all-around and along cable/cable racks.				
8.1		Supply, Installation, Testing & Commissioning of Advance Maintenance Free electrolytic grade Copper Electrode Earthing based on pipe in pipe technology consisting with outer dia 80mm dia 2mm thick and 3 meter length & inner dia 40mm of 3mts long & filled with Crystalline Conductive Mixture (CCM) having anti corrosive and conductive property and exothermically welded Cu Busbar of 65X10X200mm. Along with earth enhancement compound tested by RoHs complying	Set	10	25794.00	257940.00

		IEC 62561-7 in a sealed bag of minimum 50 kg (25 kg Bag x 2) resistivity is less than 0.12 ohm meter. The earthing shall be with Suitable Poly-plastic Pit heavy duty Cover.				
8.2		Supply, Installationr, Testing & Commissioning of Advance Maintenance Free Hot dip Galvanized 80-100 MICRON GI Electrode Earthing based on pipe in pipe technology consisting with outer dia 80 mm dia 2 mm thick and 3 meter length & inner dia 40mm of 3 mts long & filled with Crystalline Conductive Mixture (CCM) having anti corrosive and conductive property with & exothermically welded GI Busbar of 75X10X200mm. Along with earth enhancement compound tested by RoHs complying IEC 62561-7 in a sealed bag of minimum 50 kg (25 kg Bag x 2) resistivity is less than 0.12 ohm meter.The earthing shall be with Suitable heavy duty Poly-plastic Pit Cover.	Set	32	10647.00	340704.00
8.3		Supplying and laying of GI tape of the following earthing clamped to wall with suitable clamps saddles and fixing bolts/soldering / riveting in ground including the cost of digging and back filling as required and complete as required to comply with IS 3043:1987. All joints shall be tinned.				
8.3.1		75mm x 10mm GI strip	RM	280	599.00	167720.00
8.3.2		50mm x 6mm GI strip	RM	320	239.00	76480.00
8.3.3		25mm x 6mm GI strip	RM	260	127.00	33020.00

8.4		Supplying and laying of bare copper tape of the following earthing clamped to wall with suitable clamps saddles and fixing bolts/soldering /riveting in ground including the cost of digging and back filling as required and complete as required to comply with IS 3043:1987. All joints shall be tined.				
8.4.1		65 x 10 mm Copper strip	RM	50	4359.00	217950.00
8.4.2		50 x 6 mm Copper strip	RM	100	2439.00	243900.00
		TOTAL OF EARTHING				13,37,714.00
9.0		SUB-HEAD : MISCELLANEOUS ITEMS				
9.1		Supplying and Placing of non-skid rubber mat 10mm thick and 900mm width as required including cutting to required lengths or approved make with Test Certificate for L.T. panels.	RM	57	3679.00	209703.00
9.2		Supplying and Placing of non-skid rubber mat 12mm thick and 900mm width as required including cutting to required lengths or approved make with Test Certificate for HT 33 KV panels.	RM	18	4200.00	75600.00
9.3		Supplying and fixing of fire bucket painted red and duly filled with sand conforming to IS:2546-1974 and made of 24 SWG MS sheet.	Each	16	348.00	5568.00
9.4		Supply, erection and fixing of canopy type frame for 4 fire buckets of 9 Litre capacity made of heavy duty MS structure made out of 24 SWG of 1200 mm (H) X 760 mm (L), painted with two coats of Red Oxide primer and further with anti corrosive paint. It must have multiple hooks to support support 9 Litre sand filled buckets.	Each	4	2608.00	10432.00

9.5		Supplying and fixing cable route marker with route indication on 150mm dia cast iron disk bolted to 40x40x3mm angle iron grouted in 1:3:6 concrete block 150x150x300mm deep including two coats of aluminium paint on the metal work.	Each	38	274.00	10412.00
9.6		Supplying and fixing of shock restoration chart of minimum size (2 Ft X3 Ft) written in English and Hindi duly framed in glass as required.	Each	4	1168.00	4672.00
9.7		Supplying and fixing carbon dioxide type fire extinguisher, 4.5 Kgs capacity of approved make on wall mounting bracket as required conforming to IS:2878/1976.	Each	10	9726.00	97260.00
9.8		Supplying and fixing chemical foam type fire extinguisher, 9 Litre capacity of approved make on wall mounting bracket as required conforming to IS:993.	Each	4	7875.00	31500.00
9.9		Supplying and fixing Dry Chemical Powder type fire extinguisher, 5 Kgs capacity of approved make on wall mounting bracket as required conforming to IS:14609.	Each	14	7412.00	103768.00
9.10		Providing and fixing NO SMOKING & DANGER ZONE sign boards.	Nos.	8	1573.00	12584.00
9.11		Supplying of first aid box as approved complete with standard kit as prescribed by Indian Red Cross.	Each	4	3260.00	13040.00
9.12		Providing and fixing MV danger plate of 200x150mm made of mild steel atleast 2mm thick and vitreous enamelled white on both side and with inscription in signal red colour on front side as required.	Each	7	109.00	763.00

9.13		Providing and fixing HT danger notice plate of 250x200mm made of mild steel atleast 2mm thick and vitreous enamelled white on both sides with inscription in signal red colour on front side as required.	Each	7	114.00	798.00
		TOTAL OF MISCELLANEOUS ITEMS				5,76,100.00
10.0		SUB-HEAD: SUPPLY OF HT CABLE, CONTROL CABLE & TERMINATIONS				
10.1		Supplying & Laying of XLPE insulated and PVC sheathed 1100 volts armoured copper conductor control cable in existing duct/pipes/tray etc. including supplying and making end termination as required as per technical specifications.				
10.1.1		4 x 2.5 sq.mm	RM	70	107.00	7490.00
10.1.2		10 x 2.5 sq.mm	RM	70	225.00	15750.00
10.1.3		14 x 2.5 sq.mm	RM	70	305.00	21350.00
10.1.4		19 x 2.5 sq.mm	RM	70	410.00	28700.00
10.2		Supplying of 3 core undernoted size of Aluminium conductor XLPE 33 KV (E) cable as per Technical specifications.				
10.2.1		3C x 300 sq.mm	RM	890	1631.00	1451590.00
10.2.2		3C x 240 sq.mm	RM	735	1453.00	1067955.00
10.2.3		3C x 185 sq.mm	RM	110	1320.00	145200.00
10.3		Supply and making of end Termination, connection & commissioning of indoor/outdoor type under noted size Aluminium conductor XLPE 33 KV (E) cable on HT swswitchgear/transformer cable box including supply and installation of heat shrinkAble type jointing kit, cable lugs etc. as required.				

10.3.1		3C x 300 sq.mm (indoor)	Each	10	16652.00	166520.00
10.3.2		3C x 300 sq.mm (out door)	Each	2	27007.00	54014.00
10.3.3		3C x 240 sq.mm (indoor)	Each	4	16652.00	66608.00
10.3.4		3C x 185 sq.mm (indoor)	Each	5	14685.00	73425.00
10.3.5		3C x 185 sq.mm (out door)	Each	5	20405.00	102025.00
10.4		Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :				
10.4.1		3C x 300sq.mm	Set	4	37310.00	149240.00
10.4.2		3C x 240sq.mm	Set	2	37310.00	74620.00
10.5		Constrcting Masonry Manholes in following sizes with brick 75 class with inside and outside plaster,Inside size 120x120 cm and 150 cm deep including RCC main hole cover HD-20 grade frame with (heavy duty) concrete etc ;				
10.5.1		1200x1200x1500mm deep	Set.	40	23562.00	942480.00
10.6		Supply and fixing of Hot dip GI cable tray/steel work in position including clamps, frame work of flats, angle iron, channel with fabrication work including cutting, bending, welding, drilling bolting etc. as per design as required.	Kg.	200	130.00	26000.00
		TOTAL OF SUPPLY OF HT CABLE, CONTROL CABLE & TERMINATIONS				43,92,967.00
11.0		SUB-HEAD: SUPPLY OF LT CABLES				
a		The rate shall also include the following :				
b		Providing and fixing junction boxes with covers including painting where ever required.				
c		Providing all fixing				

		accessories such as clamping devices nuts, bolts and screws.				
d		Wherever the cables are of aluminium and bus bars of copper, bimetallic lugs shall be used.				
e		All cable shall be laid with one diameter gap.				
f		All cables shall be IS approved.				
g		Double compression glands				
h		Fire retardent paint one meter on both side of wall penetration and at termination as per specifications.				
i		Burried LT cables to be laid atleast 750 mm below ground.				
11.1		Supply of 1100 volt grade XLPE insulated PVC sheathed aluminium conductor armoured cables as per undernoted size as per specification:				
11.1.1		4 core 300 sq. mm	RM	5481	1034.00	5667354.00
11.1.2		4 core 240 sq. mm	RM	70	854.00	59780.00
11.1.3		4 core 185 sq. mm	RM	610	655.00	399550.00
11.1.4		4 core 120 sq. mm	RM	300	447.00	134100.00
11.1.5		4 core 70 sq. mm	RM	1050	281.00	295050.00
11.1.6		4 core 50 sq. mm	RM	770	212.00	163240.00
11.1.7		4 core 25 sq. mm	RM	160	129.00	20640.00
11.2		Supplying and making end termination with brass double compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
11.2.1		4 core 300 sq. mm	Set	118	2269.00	267742.00
11.2.2		4 core 240 sq. mm	Set	8	1771.00	14168.00
11.2.3		4 core 185 sq. mm	Set	6	1480.00	8880.00
11.2.4		4 core 120 sq. mm	Set	2	898.00	1796.00
11.2.5		4 core 70 sq. mm	Set	6	747.00	4482.00
11.2.6		4 core 50 sq. mm	Set	6	591.00	3546.00
11.2.7		4 core 25 sq. mm	Set	4	361.00	1444.00

		TOTAL OF SUPPLY OF LT CABLES				70,41,772.00
12.0		SUB-HEAD: INTERNAL & EXTERNAL LIGHTING				
12.1		<p>SITC of Decorative Ornamental pole with Single arm bracket as per Lustre item No.Li8219B-Bkt 03 or equivalent (Drawing enclosed). Total height of the pole with Single arm Bracket shall be 7000 mm nominal above the ground. The pole is made out of Ribbed mild steel tube and cast iron in two steps as shown in attached drawing. Cast Iron embellishments are fitted with the help of grub screws. A built in service window is provided to accommodate a 6 A, SP, MCB and 32 A heavy duty connector for mains connections in the bottom part of the pole as shown in attached drawing. The different sections of the pole are joined together by means of Welded joints. The decorative bracket is made out of mild steel and cast-iron. The mild steel and cast iron parts are joined together & are fabricated to get the desired design as per attached drawing. The decorative bracket should have the arrangement to fix the required luminaire. The bracket should have the arrangement suitable to be fitted on the required pole. The dimensions of the pole and bracket should be as per attached drawing The Decorative Pole and Single arm bracket Shall be machined and Polished properly to give it a smooth Surface. The</p>	Each	60	35531.00	2131860.00

		Decorative pole with Single arm bracket is duly pretreated and painted in U.V. ray resistant P.U. coating in approved color shade. Decorative pole with single arm bracket shall be installed at desired location including foundation of the pole by making cement concrete foundation of 1:3:6 (1 cement: 3 course sand : 6 graded stone aggregate 40mm nominal size) with the help of anchor bolts and 38mm G.I sleeve as required.				
12.2		SITC of Decorative Ornamental pole with Double arm bracket as per Lustre item No.Li8219B-Bkt 04 or equivalent (Drawing enclosed). Total height of the pole with Double arm Bracket shall be 9000 mm nominal above the ground. The pole is made out of Ribbed mild steel tube and cast iron in two steps as shown in attached drawing. Cast Iron embellishments are fitted with the help of grub screws . A built in service window is provided to accommodate a 6 amp SP MCB and 32 amp heavy duty connector for mains connections in the bottom part of the pole as shown in attached drawing. The different sections of the pole are joined together by means of Welded joints. The decorative bracket is made out of mild steel and cast-iron. The mild steel and cast iron parts are joined together & are fabricated to get the desired design as per attached drawing. The decorative bracket should have the	Each	21	40959.00	860139.00

		<p>arrangement to fix the required luminaire. The bracket should have the arrangement suitable to be fitted on the required pole. The dimensions of the pole and bracket should be as per attached drawing. The Decorative Pole and Double arm bracket Shall be machined and Polished properly to give it a smooth Surface. The Decorative pole with Double arm bracket is duly pretreated and painted in U.V. ray resistant P.U. coating in approved color shade. Decorative pole with Double arm bracket shall be installed at desired location including foundation of the pole by making cement concrete foundation of 1:3:6 (1 cement: 3 course sand : 6 graded stone aggregate 40mm nominal size) with the help of anchor bolts and 38mm G.I sleeve as required.</p>				
12.3		<p>SITC of LED based Road light, housing made up of Pressure Die Cast Housing LM-6 Aluminium Alloy, Anti Dust Exposed Lens, sturdiness and embossed brand name/logo name of manufacturer. The fixture should have a minimum system efficacy of ≥ 125 lumen/Watt and a minimum system lumen output of > 11000 lumens. The luminaire shall have a color temperature of 5700K and CRI > 70. The luminaire shall be designed for a system life of 50,000 hours @70% lumen maintenance. Ingress Protection of IP66 (lamp and gear Compartment) and Mechanical Impact Resistance Rating of IK ≥ 07.</p>	Each	84	7771.00	652764.00

		<p>The luminaire driver should have an operating voltage range of 140-270 V, surge protection of $\geq 4\text{KV}$, PF >0.95, THD$<10\%$ and SDCM<5. The luminaire along with driver should be BIS approved, fully potted and encapsulated. The luminaire shall be supplied along with 10 kV potted external SPD of luminaire make. The luminaire should comply with the parameters as per IS10322. The LED driver should comply to IEC61000-3-2 ed.3.2, 2009 for Harmonics, IEC61347 -2 -13, 2006 in Conjunction with IEC61347-1 ed.2.0, 2007 for Electrical Safety, IEC62384 ed.1.1, 2011 for performance and IEC61547 ed.2.0, 2009, CISPR-15 for EMI. Thermal test report shall be submitted from NABL accredited lab. TJ shall be less than 85 degree C at ambient 40 degree C and RH 60%. LM 79 and LM80 reports watermarked for OEM need to be submitted from a NABL/UL accredited lab to verify above parameters.</p>				
12.4		<p>SITC of LED based Road light, housing made up of Pressure Die Cast Housing LM-6 Aluminium Alloy, Anti Dust Exposed Lens, sturdiness and embossed brand name/logo name of manufacturer. The luminaire should have a minimum system efficacy of ≥ 125 lumen/Watt and a minimum system lumen output of >13000 lumens. The luminaire should have a color temperature of 5700K and CRI >70. The luminaire shall be designed for a system life</p>	Each	42	8232.00	345744.00

	<p>of 50,000 hours @70% lumen maintenance. Ingress Protection of IP66 (lamp and gear Compartment) and Mechanical Impact Resistance Rating of IK ≥ 07. The fixture driver should have an operating voltage range of 140-270 V, surge protection of ≥ 4 kV, PF > 0.90, THD $< 10\%$ and SDCM < 5. The luminaire along with driver should be BIS approved, fully potted and encapsulated. The luminaire shall be supplied along with 10 kV potted external SPD of luminaire make. The fixture should comply with the parameters as per IS10322. The LED driver should comply to IEC61000-3-2 ed.3.2, 2009 for Harmonics, IEC61347 -2 -13, 2006 in Conjunction with IEC61347-1 ed.2.0, 2007 for Electrical Safety, IEC62384 ed.1.1, 2011 for performance and IEC61547 ed.2.0, 2009, CISPR-15 for EMI. Thermal test report shall be submitted from NABL accredited lab. TJ shall be less than 85 degree C at ambient 40 degree C and RH 60%. LM 79 and LM80 reports watermarked for OEM need to be submitted from a NABL/UL accredited lab to verify above parameters.</p>				
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12.5	<p>SITC of wall/surface mounted energy efficient LED batten made of powder coated extruded aluminium with high efficiency PC/PMMA diffuser for homogeneous light distribution. Fixture should have minimum efficacy at System level (Not Chip Level) ≥ 130 lumens/watt and a minimum system lumen output of 4100 lumens. Life of fixture : 50000 burning Hrs. @ L70 Lumen maintenance, CCT of 5700/6500K (SDCM<4), CRI >80, PF >0.95, R9>20, IP20, UGR<19, IK\geq04, Operating working temp range - 0°C < Ta < 45°C and an operating Voltage Range of 140 - 270V. Internal Surge Protection 2.5 kV and External Surge Protection of 5.0 kV. The internal wiring to be done with LSZH wires. The fixture design should be with flicker free operations, comply to IEC61000-3-2 ed.3.2, 2009 for Harmonics, IEC61347 -2 -13, 2006 in Conjunction with IEC61347-1 ed.2.0, 2007 for Electrical Safety, IEC62384 ed.1.1, 2011 for performance and IEC61547 ed.2.0, 2009, CISPR-15 for EMI/EMC. Manufacturer shall have inhouse lab approved by NABL or Ministry of Science, Govt of India or reports to be verified at NABL approved labs for parameters by firm. LM79 and LM80 reports need to be submitted from a NABL/UL accredited lab to verify above parameters. Both the fixture and Driver should have BIS approval.</p>	Each	15	3293.00	49395.00
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12.6	<p>SITC of wall/surface mounted energy efficient LED batten made of powder coated extruded aluminium with high efficiency PC/PMMA diffuser for homogeneous light distribution. Fixture should have minimum efficacy at System level (Not Chip Level) ≥ 115 lumens/watt and a minimum system lumen output of 6900 lumens. Life of fixture : 50000 burning Hrs. @ L70 Lumen maintenance, CCT of 5700/6500K (SDCM<4), CRI >80, PF >0.95, THD<10%, R9>20, IP54 or above, IK\geq06, Operating working temp range - 0°C < Ta < 45°C and an operating Voltage Range of 140 - 270V. Internal Surge Protection 4.0 kV and External Surge Protection of 10.0 kV. The internal wiring to be done with LSZH wires. The fixture design should be with flicker free operations ripple <5%, comply to IEC61000-3-2 ed.3.2, 2009 for Harmonics, IEC61347 -2 -13, 2006 in Conjunction with IEC61347-1 ed.2.0, 2007 for Electrical Safety, IEC62384 ed.1.1, 2011 for performance and IEC61547 ed.2.0, 2009, CISPR-15 for EMI/EMC. Manufacturer shall have inhouse lab approved by NABL or Ministry of Science, Govt of India or reports to be verified at NABL approved labs for parameters by firm. LM79 and LM80 reports need to be submitted from a NABL/UL accredited lab to verify above parameters. Both the fixture and Driver should have BIS approval.</p>	Each	24	9434.00	226416.00
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12.7	<p>SITC of surface mounted energy efficient LED downlighter made of powder coated pressure die cast aluminium with high efficiency PC/PMMA diffuser for homogeneous light distribution. Fixture should have minimum efficacy at System level (Not Chip Level) ≥ 120 lumens/watt and a minimum system lumen output of 1800 lumens. Life of fixture : 50000 burning Hrs. @ L70 Lumen maintenance, CCT of 5700/6500K (SDCM<4), CRI >80, PF >0.95, THD<10%, R9>20, UGR<19, IK\geq04, Operating working temp range - 0°C < Ta < 45°C and an operating Voltage Range of 140 - 270V. Internal Surge Protection 2.5 kV and External Surge Protection of 5.0 kV. The internal wiring to be done with LSZH wires. The fixture design should be with flicker free operations ripple <5%, comply to IEC61000-3-2 ed.3.2, 2009 for Harmonics, IEC61347 -2 -13, 2006 in Conjunction with IEC61347-1 ed.2.0, 2007 for Electrical Safety, IEC62384 ed.1.1, 2011 for performance and IEC61547 ed.2.0, 2009, CISPR-15 for EMI/EMC. Manufacturer shall have inhouse lab approved by NABL or Ministry of Science, Govt of India or reports to be verified at NABL approved labs for parameters by firm. LM79 and LM80 reports need to be submitted from a NABL/UL accredited lab to verify above parameters. Both the fixture and Driver should have BIS approval.</p>	Each	3	3183.00	9549.00
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12.8		Supplying and fixing of 32 mm dia X 2.00 metres long G.I. pipe (medium class) bracket for mounting of street light fitting on wall including bending the pipe to the required shape, 2 nos 40 mm X 3 mm flat iron clamps with nuts, bolts and washer, painting the flat iron with primer and finish paint etc. as required.	Set	24	537.00	12888.00
12.9		Providing of Spiral coil earthing with 8 SWG GI wire including spreading with earth enhancement compound tested by RoHs complying IEC 62561-7 in a sealed bag of minimum 10 kg (10 kg Bag x 1). Resistivity is less than 0.2 ohm meter. GI earth wire is wound in the form of a coil of 50 mm dia. and 450 mm length (approx.115 turns). The pit for earthing shall be 1800 mm deep. The earthing shall be with Suitable Poly-plastic Pit Cover with lockAble arrangement as per IS 3043/87 with latest amendments complete as required. (For Pole earthing)	Set	85	2140.00	181900.00
12.10		SITC of 30 meter high mast using raising & lowering type with luminaire carriage made of BS-EN 10025, S-355 grade steel as per IS-20162, wind load data as per IS-875, hot dip galvanised as per IS-2629 (65 micron for 2mm - 4mm sheet and 85 micron for 5mm and above sheet), factor of safety >5, shall be of continuously tapered polygonal cross section hot dip galvanized fabricated from special steel confirming to IS, carriage lowering arrangement along with motor and pulleys, lightening arrester, aviation	Nos.	1	698942.00	698942.00

		obstruction light along with feeder pillar. Min. thickness of sections: 4 mm at top, 5 mm at middle & 6 mm at bottom. It shall include foundation work including base plate and nut & bolts, feeder panel and junction box to be flame floor and as per technical specifications and data sheet				
12.11		SITC of LED Flood light, housing made of single piece pressure die cast Housing LM-6 Aluminium Alloy, windage area <.09 sqm. Anti-dust exposed lens, sturdiness and embossed brand name/logo name of manufacturer. The Fixture should have a minimum system efficiency >110 lumen per watt and a minimum system output >37000 lumens. The luminaire should have a colour temperature of 5700K and CRI >70. The Fixture shall have designed for a system life of 50,000 hours@70% lumen maintenance. Ingress Protection IP-66 (Lamp and gear compartment) and mechanical Impact resistance of IK>07. The Fixture driver should have an operating range of 140-27 Vac, Internal surge protector of >4 Kv, PF>0.95, THD<10% and SDCM<5. The luminaire along with driver should be BIS approved, fully potted & encapsulated. The Luminaire shall be supplied along with 10 Kv potted external SPD of luminaire make. The Fixture should comply with the parameters as per IS10322. The LED driver should comply to IEC81000-3-	Nos.	24	30618.00	734832.00

		3ed3.3, 2009 for Harmonics, IEC61347-2-13, 2006 in conjunction with IEC61347-1 ed.2.0, 2007 for Electrical safety, IEC62384 ed.1.1, 2011 for performance and IEC61347-1 ed.2.0, 2007 for electrical safety, IEC62384 ed.1.1, 2011 for performance and ed.2.0,2009, BISPR-15 for EMI. Thermal test report shall submitted from NABL accredited lab. Luminaire supplied shall have Tj less than 85°C at ambient 40 °C at RH 60% along with LM-79 & LM-80 report watermarked for OEM.				
12.12		Supplying and laying of following sizes 1100 volt grade XLPE insulated PVC sheathed copper conductor armoured cables as per specification laid in ground including cost of digging upto required depth, 150 mm sand all around the cable, brick protection and back filling, clamped to wall with suitable clamps including, saddles fixing bolts, connecting testing and commissioning as required.				
12.12.1		3x2.5sqmm	RM	1400	151.00	211400.00
12.13	NS	SITC energy efficient 1200 mm sweep BLDC ceiling fan, input power 28W±10%, speed 350±10% rpm with 300/600 mm standard down rod and electrical connection as required etc.	Nos.	8	2722.00	21776.00
12.14	NS	SITC of 750 mm sweep air circulator fan, oscillatory type, 3 speed control, heavy duty type as required.	Nos.	16	9880.00	158080.00
12.15	NS	SITC of heavy duty type exhaust fans of following size sweep with gravity louvers shutters including all accessories/installation				

		materials required make				
a	NS	305 mm sweep 900 rpm	Nos.	3	3467.00	10401.00
b	NS	450 mm sweep 1400 rpm	Nos.	18	3908.00	70344.00
12.16	NS	Supply, Installation, testing and commissioning of following outdoor type Feeder Pillar with IP 55 and suitable for 415 volts, 3 phase, 4 wire and 50 Hz AC power supply totally enclosed compartmentalized, fabricated with 2 mm thick sheet, complete with Copper bus bars (both for main and neutral), incoming/outgoings, cable terminations, inter-connections, indication lamps, pedestal frame on RCC foundation/platform of 300 mm height above GL, necessary earth connections conforming to relevant IS codes, specification and drawings. - FP-SL-2				
		Incoming (HHRI)				
		63A, 4P MCCB - 25kA - 1 No.				
		Bus bar				
		100A, 415V, 3ph, 4wire Cu Bus bar				
		Time switch with contactor-1Set				
		Outgoing				
		64 Nos, 10 A, SP MCB of 10kA, 01 No. 40A, TPN MCCB of 25kA (for High Mast)	Set	1	74089.00	74089.00
12.17	NS	Supply, Installation, testing and commissioning of following outdoor type Feeder Pillar with IP 55 and suitable for 415 volts, 3 phase, 4 wire and 50HZ AC power supply totally enclosed compartmentalized, fabricated with 2 mm thick sheet, complete with Copper bus				

		bars (both for main and neutral), incoming/outgoings, cable terminations, inter-connections, indication lamps, pedestal frame on RCC foundation/platform of 300 mm height above GL, necessary earth connections conforming to relevant IS codes, specification and drawings. - FP-SL-1 (DFCCIL)				
		Incoming				
		63A, 4P MCCB - 25kA - 1 No.				
		Bus bar				
		100A, 415V, 3 ph, 4 wire Cu Bus bar				
		Time switch with contactor-1Set				
		Outgoing				
		48 Nos. 10 A, SP MCB of 10kA	Set	1	66186.00	66186.00
		TOTAL OF INTERNAL & EXTERNAL LIGHTING				65,16,705.00
13.0		SUB-HEAD: DG SETS OF 2 x 500 KVA, 1X11010 KVA & 1X1500 KVA				
		SILENT TYPE DG SETS OF 2 x 500 KVA (HHIR)				

13.1	NS	<p>Supply, installation, testing and commissioning of 500KVA (PRIME -AS PER CPCB- II MODEL) SILENT Diesel Generator set radiator cooled type suitable for AMF/ of 415V, 3 phase 4 wire, 0.8 pt. (lagging) 50c/s A.C supply complete with engine (1500 RPM) and alternator DG Set controller with accessories including residential type silencer and fuel service tank (internal) 500-700 litres capacity with battery with all associated accessories, and anti-vibration mounting pads & supply of extended adopter box with bus-bar , isolator switch . The controller - in built of PCC 3.3 or equivalent should be with digital voltage regulator through inbuilt AVR, digital governing + protective function. Including Supply and Installation of Adopter Box with Extended Bus Bar with Supply and Installation of Isolator Panel having -given below switchgear. Diesel Engine shall be full authority electronic engine with electronic unit injection fuel system for lesser fuel consumption & low maintenance cost.</p> <p>Mandatory PCB/CEIG approval for the above is in the scope of Contractor.</p> <p>Isolator Panel shall be IN-BUILT inside the acoustic enclosure. It must include following accessories:</p>				
		800A TP manually fixed ACB with standard accessories, Three Phase Energy Meter, Class 1.0, Type, DM5240, CT, Indicating Lamps and Aux, Relay etc as required.				

		Fuel Tank, 500L or above				
		Batteries & Leads				
		AVM Pads				
		Residential Silencer				
		Engine Controller				
		AMF Controller				
		Accoustic Enclosure	Set	2	3526535.00	70,53,070.00
13.2		SILENT TYPE DG SETS OF 1 x 1500 KVA (CORP TOWER)				
		Supply, installation, testing and commissioning of 1500KVA (PRIME -AS PER CPCB- II MODEL) SILENT Diesel Generator set, radiator cooled type, suitable for AMF of 415V, 3 phase 4 wire, 0.8 PF (lagging) 50 c/s A.C supply complete with engine (1500 RPM) and alternator, DG Set controller with accessories including residential type silencer and fuel service tank 990 litres capacity with battery with all associated accessories, and anti-vibration mounting pads, first fill of Lub Oil & supply of extended adopter box with bus-bar, isolator switch. The controller - in built of PCC 3.3 or equivalent should be with digital voltage regulator through inbuilt AVR, digital governing + protective function. Including Supply and Installation of Adopter Box with Extended Bus Bar with Supply and Installlation of Isolator Panel having below below switchgear. Diesel Engine shall be full authority electronic engine with electronic unit injection fuel system for lesser fuel consumption & low				

		maintenanc cost. Mandatory PCB/CEIG approval for the above is in the scope of Contractor. Isolator Panel shall be IN-BUILT inside the accoustic enclosure. It must include following accessories:				
		2500A TP manually fixed ACB with standard accessories, Three Phase Energy Meter, Class 1.0, Type, DM5240, CT, Indicating Lamps and Aux, Relay etc as required.				
		Fuel Tank, 990L				
		Batteries & Leads				
		AVM Pads				
		Residential Silencer				
		Engine Controller				
		AMF Controller				
		Accoustic Enclosure	Set	1	14605121.00	1,46,05,121.00
13.3		SILENT TYPE DG SETS OF 1 x 1010 KVA (CORP TOWER)				
		Supply, installation, testing and commissioning of 1500KVA (PRIME -AS PER CPCB- II MODEL) SILENT Diesel Generator set, radiator cooled type, suitable for AMF of 415V, 3 phase 4 wire, 0.8 PF (lagging) 50 c/s A.C supply complete with engine (1500 RPM) and alternator, DG Set controller with accessories including residential type silencer and fuel service tank 990 litres capacity with battery with all associated accessories, and anti-vibration mounting pads, first fill of Lub Oil & supply of extended adopter box with bus-bar, isolator switch. The controller - in built of PCC				

		3.3 or equivalent should be with digital voltage regulator through inbuilt AVR, digital governing + protective function. Including Supply and Installation of Adopter Box with Extended Bus Bar with Supply and Installation of Isolator Panel having below switchgear. Diesel Engine shall be full authority electronic engine with electronic unit injection fuel system for lesser fuel consumption & low maintenance cost. Mandatory PCB/CEIG approval for the above is in the scope of Contractor. Isolator Panel shall be IN-BUILT inside the acoustic enclosure. It must include following accessories:				
		1600A TP manually fixed ACB with standard accessories, Three Phase Energy Meter, Class 1.0, Type, DM5240, CT, Indicating Lamps and Aux, Relay etc as required.				
		Fuel Tank, 990L				
		Batteries & Leads				
		AVM Pads				
		Residential Silencer				
		Engine Controller				
		AMF Controller				
		Acoustic Enclosure	Set	1	8509384.00	85,09,384.00
13.4	NS	Supplying and fixing of under noted 'B' class M.S. pipe for D.G. exhaust complete with bends, elbow, flanges etc. as required.				
13.4.1		250mm dia pipe (4.85 mm thick)	Metre	96	5,512.00	5,29,152.00
13.4.2		300mm dia pipe (4.85 mm thick)		42	6,614.00	2,77,788.00
13.4.3		400 mm dia pipe (4.85 mm thick)	Metre	42	8,819.00	3,70,398.00

13.5	NS	Supply and fixing of 75 mm thick compressed mineral wool insulation for D.G. exhaust pipe with wire chicken mesh over insulation and 26 gauge aluminium sheet cladding etc. as required for the under mentioned dia pipe.				
13.5.1		250mm dia pipe	Metre	96	4,213.00	4,04,448.00
13.5.2		300 mm dia pipe	Metre	42	5,055.00	2,12,310.00
13.5.3		400 mm dia pipe	Metre	42	5,600.00	2,35,200.00
13.6	NS	Supply of SS bellow				
13.6.1		250mm dia pipe	Each	2	19,339.00	38,678.00
13.6.2		300mm dia pipe	Each	1	23,207.00	23,207.00
13.6.3		400 mm dia pipe	Each	1	31,047.00	31,047.00
13.7	NS	Supply, installation, testing and commissioning of MS ERW 'C' class fuel pipe for connecting diesel engine to individual day service tank including supply and fixing of required valves, Tee, Elbows and filters and painting of pipe with desired shade of synthetic enamel paint etc. complete as required for following size.				
13.7.1		25mm dia	Metre	120	475.63	57,076.11
13.8	NS	Supply, fabrication and installation of M.S. Structural Steel supports for exhaust pipe, fuel pipe etc. including supply and applying of synthetic enamel paint of approved shade after one coat of steel primer of reputed company.	Kgs.	31000	102.44	31,75,773.30
13.9	NS	SITC of Aviation Lamp with cables etc complete as required	Set	2	27,179.10	54,358.20
13.10	NS	SITC of Lightning Arrestor with earth pit etc complete as required	Set	2	37,319.00	74,637.99

13.11		Supply, laying and testing of under noted sizes of copper conductor XLPE insulated PVC sheathed armoured and overall PVC sleeved 1.1 KV grade power distribution cables conforming to relevant IS code in laid in ground including cost of digging upto required depth, 150 mm sand all around the cable, brick protection and back filling , clamped to wall with suitable clamps including, saddles fixing bolts, connecting testing and commissioning./ through pipe or on wall/racks/cable trays including dressing and clamping etc. as required.				
		Recommended Cable Size				
13.11.1		19C x 2.5 Sqmm CU armoured Control Cable	Metre	100	785.06	78,505.79
13.11.2		14C x 2.5 Sqmm CU armoured Control Cable	Metre	100	607.35	60,734.84
13.11.3		5C x 2.5 Sqmm CU armoured Control Cable(Twisted core Shielded cable)	Metre	100	435.43	43,543.01
13.11.4		24C x 2.5 Sqmm CU armoured Control Cable	Metre	50	971.13	48,556.51
13.11.5		4C x 2.5 Sqmm CU armoured Control Cable	Metre	50	244.61	12,230.60
13.11.6		2C x 2.5 Sqmm CU armoured Control Cable	Metre	50	172.48	8,624.14
13.11.7		2C x 4 Sqmm CU armoured Control Cable	Metre	50	212.21	10,610.30
13.11.8		8C x .75 sqmm (Shielded Cable)	Metre	50	278.06	13,903.16
13.11.9		Cables End Termination	Each	20	564.49	11,289.78
13.11.10		300 mm wide, 50mm deep, 2 mm thick perforated type cable tray	Metre	50	965.90	48,295.17
		TOTAL OF DG SETS				3,59,87,942.00
14.0		SUB-HEAD: U/G HSD TANK AND ALLIED WORKS				
		FUEL STORAGE TANK				
14.1		Supply, installation, site	No.	1	6,80,993.00	6,80,993.00

		testing and commissioning including Unloading & Shifting of Underground Bulk Oil (HSD) Storage Tank with dished ends of 1X20,000 ltrs nominal capacity conforming to IS 10987 - 1992 (tank fabricated from MS plate 6mm thick for tanks and 8mm thick for dished ends plates, conforming to IS provided with all standard appurtenances/ mountings like 600mm dia & 450mm dia hinged cover manholes, access ladders, foundation bolts, lifting lugs, earthing bosses, appurtenances for 80mm fill & 50mm (2 nos.) suction and 40mm sump overflow connections, dip stick, 50mm for BMS vent pipe etc. including the cost of providing asphalt doping after surface preparation. complete as per specifications and as required.				
		Storage capacity (nominal) : 1X20 KL				
		Gross capacity (not to exceed) : 1X21.5 KL				
		Shell Thickness : 6mm				
		End Plate Thickness : 8mm				
		Tank of 20KL shall be complete with all usual nozzles, manhole, dip stick (caliberated). Extra high level and extra low level switches for alarms should be provided. Lifting lugs, earthing lugs etc, vent pipe with flame arrestor etc and any other nozzle/fittings as per IS:10987.				
		Note:-1				

		Erection to include excavation, making foundations for resting of tank as per IS:10987:1992, fixing of tank by anchor bolt and corrosion protection of tank by two coats of bituminous paints as well as construction of dyke wall all around the U/G tank and backfill with sand upto 300mm above and all around the U/G tank inside the dyke wall.				
		Contractor to get his shop drawing approved before fabrication of the tank.				
		The contractor has to arrange 3rd party inspection, approval of the plans for the HSD installation as well as getting license for storage of HSD from the concerned authorities.				
		NOTE: -2-THE DRAWINGS ATTACHED FOR THE TENDER IS				
		ONLY GUIDANCE PURPOSE. THE SUCESSFUL TENDERER				
		SHALL BE SUBMITTED THE DETAILED DRAWINGS FOR				
		EXECUTING THE CIVIL CONSTRUCTION WORKS.				
14.2		Valve manifold for HSD service tank (for D.G.sets)				
		Valve manifold to be provided to pipe line connecting HSD transfer pump to service tank and shall be complete with supporting stucture , clamps grouting by making pedestals etc. The valve manifold would consist of magnatic float type level indicators with fluorescent indication with level switches at four level and flame proof solenoid valve for on-off operation of	No.	3	69,683.00	2,09,049.00

		transfer pump. Extra high level and extra low level alarms would also be provided.				
14.3		HSD OVER FLOW TANK				
14.3.1		M.S. (IS:2026) regulator with hopper bottom overflow tank capacity of 200 litres made out of 4 mm thick M.S. sheet complete with inlet,outlet, drain vent with flame arrestor and support legs. The tank should be provided with controller, level gauge and alarm at extra low high level. Tank should be painted with two coats of redoxide and synthytic enamel paint of colour as specified by Owner/ Consulatant	No.	1	69,683.00	69,683.00
14.4		Supply, installation, testing and commissioning of Fuel Transfer Pumpsets with rotary gear pumps and flameproof motors suitable for transferring HSD oil from the Underground Bulk Storage Tank to the 990 litre Buffer Oil Tanks in DG room, at a flow rate as below against a head of 7 kg/cm ² , complete as per specifications and as required. (one standby). Section head should not be less than 3.50m				
14.4.1		75 lpm flow rate	Nos.	3	93,640.00	2,80,920.00
14.5		OVER FLOW PUMP FOR HSD (SELF PRIMING)				
14.5.1		Rotary gear over flow pump of capacity 50 LPM for HSD complete with base frame, foundation bolts, coupling, coupling guard and flame proof TEFC motor (3 H.P.) flame proof starters and other accessories required for commissioning.	No	3	93,640.00	2,80,920.00

14.6		Supply, laying testing and commissioning of Oil piping with class C MS pipes laid in existing masonry trenches/ hume pipes including the cost of bends, flanges, gaskets supports, clamps etc. and including the cost of surface preparation of pipes, application of primer paint coat and polymeric 4 mm thick tape (Pypekote 4 mm) and including the cost of testing before wrapping of rust preventing tape complete as per specification, as required and as below.				
14.6.1		80mm NB (Fill pipe)	M	5	1,684.00	8,420.00
14.6.2		50mm NB	M	700	1,181.00	8,26,700.00
14.6.3		40mm NB	M	40	908.00	36,320.00
14.6.4		25mm NB	M	700	626.00	4,38,200.00
14.7		Extra for item no. 3(C) & 3(D) & above for laying of 1 no pipe class C in ground including excavation, sand cushioning, brick protective covering and refilling the trench etc. as required as detailed below.				
14.7.1		50mm NB	M	700	317.00	2,21,900.00
14.7.2		25mm NB	M	700	317.00	2,21,900.00
14.8		Supply, installation, testing and commissioning of piping accessories complete as required and as below :				
14.8.1		80mm NB aluminium adaptor suitable for oil company's delivery hose and with 5m delivery hose pipe.	No.	2	39,985.00	79,970.00
14.8.2		80mm NB brass ball valves	No.	3	26,759.00	80,277.00
14.8.3		80mm NB Pot strainer with SS screen of 80/100 mesh.	No.	3	5,986.00	17,958.00
14.8.4		50mm NB brass ball valves	Nos.	4	7,000.00	28,000.00
14.8.5		50mm NB brass Pot strainer/Y strainer.	No.	4	14,023.00	56,092.00
14.8.6		50mm NB brass check valve	No.	4	12,803.00	51,212.00
14.8.7		40mm NB brass valves ball valve	Nos.	32	7,668.00	2,45,376.00

14.8.8		40mm NB brass check valve	Nos.	32	9,630.00	3,08,160.00
14.8.9		40mm NB pot strainer/Y strainer.	No.	12	12,027.00	1,44,324.00
14.8.10		25mm NB ball valves	Nos.	30	5,200.00	1,56,000.00
14.9		Supply and fixing of flow meter for Diesel line as required.				
14.9.1		80mm dia Nominal flow rate 12000 LPH	No.	1	2,50,538.00	2,50,538.00
14.9.2		Sight glass type flow indicator, screwed. 80 NB for main tank filling line.	No.	1	8,154.00	8,154.00
14.9.3		Pressure gauge with isolator cock and syphon, 80 mm dia, range 0-15 kg/sq.cm.	No.	1	3,450.00	3,450.00
14.9.4		25mm dia Nominal flow rate 2000 LPH	Nos.	5	1,42,088.00	7,10,440.00
14.10		Supply, Installations, testing and Commissioning of 32 Amp Isolators in weather proof housing IP 65 Flame Proof mounted on wall/stand (lockable) near HSD Tank location with all accessories as required.	Nos.	3	9,408.00	28,224.00
14.11		Supplying & laying of Control cable, PVC insulated PVC sheathed fire proof FRLS copper conductor with pairs of cables 4Cx1.5 Sq.mm direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required. as per IS:1554 Part-I for remote sensing and remote indication of the oil level in tanks and tripping of transfer pump at high level with alarm at extra high and extra low level.	Rm	1450	199.00	2,88,550.00
14.12		Supplying & installation of Control panel (near the HSD transfer pumps in the oil storage yard) complete with Flame proof isolator switch (remote push buttons, jewel light for pump on/off indication, assembled in a				

		sheet metal enclosure complete with internal wiring etc.) for the 2 nos. transfer pumps. All accessories to be flameproof thickness of sheet metal 16 SWG, powder coated finish, equipment to fully comply with all relevant IS codes.				
		Incoming: Consisting of 32 Amps MCCB (Motor Duty) with copper bus bar, indication Lamps for each phase and multi function meter.				
		Outgoings: 2 Nos. 16 Amps MPCB (motor duty) for the two no. HSD transfer pumps, starters for 3.0 h.p. motors, indication lamps, digital ammeter for each pump with ammeter selector switch, auto/manual selector switches. Also Level controller for automatic switching on/off of the HSD transfer pump, and for low level/high level alarm from the signal received from the 4 level switches provided in each HSD service tanks. Alarm to consist of flashing light as well as claxon (Hooter). Also alarm for extra high level/ extra low level from the signal received from the level switches in the main HSD storage tank. Complete in all respects with all internal wiring. Sheet metal enclosure not less than 16 SWG, finish powder coated, equipment to comply with the relevant IS codes.	Set	3	1,01,922.00	3,05,766.00
14.13		Construction of tank lorry hard standing platform, 150mm thick soling on top with 50mm thick 1:4:8 levelling course followed by 150mm thick RCC 1:2:4 slab and chequered with rope to provide anti-skid surface of	cub.mtr.	6.30	7,000.00	44,100.00

		size 6m x 3m, item also includes breaking and disposal of dismantled / broken material.				
14.14		Providing and constructing earthing pits & earthing connection as per Indian Electricity Act & IS: 3043 complete with copper earth plate (600 x 600 x 3.0) including accessories; masonry enclosure with cover plate having locking arrangement and watering pipe etc.; salt and charcoal filling as required; GI earthing strip 25x6 in ground to near the motors etc.; and with GI earthing wire 6 SWG to connect to motors and other electrical equipments, complete in all respects including soldering.	SET	5	35,860.00	1,79,300.00
14.15		Providing and fixing of chain link fencing 50x50 x8 mm ,2 M high & grouted on concreted post at 2.5 @ c/c with 1 No. of entrance gate (4M x 3M) and 1 No. of service gate 1 M wide for HSD fuel storage yard area.	RM	50	11,878.00	5,93,900.00
		TOTAL OF U/G HSD TANK AND ALLIED WORKS				68,54,796.00
		TOTAL OF NON-SCHEDULE ITEMS				12,15,91,692.00
		GRAND TOTAL OF SCHEDULE-I (SCHEDULE + NON-SCHEDULE)				12,47,07,973.00

Supply, Erection and commissioning of 33 kv Sub-stations, DG Set and Related works for DFCCIL Integrated office Cum Residential Complex at Sec-145, Noida.						
CHEDULE-II (CIVIL WORKS)						
S. No.	DSR-2018	DESCRIPTION OF ITEM	QTY	UNIT	RATE	AMOUNT
SCHEDULE ITEMS (Based on CPWD DSR-2018)						
1.0		EARTH WORK:				
1.1	D.S.R. 2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.				
	2.6.1	All kinds of soil	205.70	CUM	162.00	33323.40
1.2	D.S.R. 2.31	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 50 m outside the periphery of the area cleared.	2,093.76	SQM	11.00	23031.36
1.3	D.S.R. 2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. all kinds of soil.	1031.6	CUM	225.00	232110.00

1.4	D.S.R. 2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, density achieve at least 95% of max dry density as per IS 2720 Part VII, lead up to 50m and lift upto 1.5 m depth.	564.91	Cum.	196.00	110721.38
1.5	2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	2756.90	Cum.	1,744.00	4808024.88
1.6	2.34	Supplying chemical emulsion in sealed containers including delivery as specified.				
	2.34.1	Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	605.99	Ltr	179.00	108472.21
1.7	2.35.2	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :				
		Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 litres per linear metre including drilling and plugging holes etc.:				
	2.35.2.1	With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration	204.59	Rmt	35.00	7160.00
1.8	2.35.3	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:				
	2.35.3.1	With Chlorpyriphos/Lindane E.C. 20% with 1% concentration	1,090.78	Sqm	203.00	221428.75

1.9	D.S.R. 2.26	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials.				
	2.26.1	All kinds of soil.	100.00	Cum	81.00	8100.00
		TOTAL OF EARTH WORKS				55,52,372
2.0		CONCRETE WORK				
2.1	D.S.R. 4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
(i)	D.S.R. 4.1.5	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size).	327.00	M3	5,588.00	18,27,276
		TOTAL OF CONCRETE WORK				18,27,276
3.0		R.C.C. / SHUTTERING WORK				
3.1	D.S.R 5.34	Extra for providing richer mixes at all floor levels				
		Note:- Excess/less cement over the specified cement content used is payable /recoverable separately.				
(i)	DSR 5.34.1	Providing M-30 grade concrete instead of M-25 grade BMC/ RMC. (Note:- Cement content considered in M-30 is @ 340 kg/cum)	362.00	cum	62.00	22,444
3.2	DSR 5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein.	94.36	Quintal	601.00	56,710

3.3	D.S.R. 5.37	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement including cost of 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 the Engineer - in - charge.(Note :- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately).				
		(Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately).				
3.3.1	D.S.R 5.37.1	All works upto plinth level.	88.00	Cum	7,499.00	6,59,912
3.3.2	D.S.R 5.37.2	All works above plinth level upto floor V level.	269.00	Cum	8,752.00	23,54,288
3.4	D.S.R. 5.9	Centring and shuttering including strutting, propping etc. and removal of form for :				
3.4.1	D.S.R. 5.9.1	Foundations, footings bases of columns etc. for mass concrete.	51.00	M2	254.00	12,954
3.4.2	D.S.R. 5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	5.00	M2	544.00	2,720

3.4.3	DSR 5.9.3	Suspended floors, roofs, Staircases, balconies & access platform.	992.00	M2	619.00	6,14,048
3.4.4	D.S.R. 5.9.5	Lintels, beams, plinth beams, girders, bressumers & cantilevers.	500.00	M2	493.00	2,46,500
3.4.5	D.S.R. 5.9.6	Column, pillars, piers, walls, abutments posts & struts	511.00	M2	655.00	3,34,705
3.4.6	D.S.R. 5.9.16	Edges of slabs and breaks in floors and walls				
	D.S.R. 5.9.16.1	Under 20 cm wide	253	Mtr	155	39,215
3.5	D.S.R. 5.11	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)				
3.5.1	5.11.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	1,392.00	Sqm.	257.00	3,57,744
	5.22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
	5.22.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	20,000.00	Kg	75.00	15,00,000
	5.22A	ThermSteel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
	5.22A.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	26,000.00	Kg	75.00	19,50,000
		TOTAL OF R.C.C. / SHUTTERING WORK				81,51,240
4.0		BRICK WORK				
4.1	D.S.R. 6.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation				

		and plinth in:				
	DSR 6.1.2	Cement mortar 1:6 (1cement : 6 coarse sand)	180.00	M3	5,498.00	9,89,640
4.2	D.S.R. 6.4	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				
4.2.1	D.S.R. 6.4.2	Cement mortar 1:6 (1cement : 6 coarse sand)	11.00	M3	6,777.00	74,547
4.3	D.S.R. 6.13	Half brick masonry 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				
	D.S.R. 6.13.2	Cement mortar 1:4 (1 cement : 4 coarse sand)	55.00	sqm	832.00	45,760
4.4	D.S.R. 6.15	Extra for providing and placing in position 2 nos, 6mm dia M.S. bars at every third course of half brick masonry (with F.P.S.bricks).	55.00	sqm	72.00	3,960
4.5	D.S.R. 6.38	Providing and laying autoclaved aerated cement blocks masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work	20.00	cum	7,346.00	1,46,920
4.6	D.S.R. 6.47	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified	283.00	cum	5,926.00	16,77,058

		adhesive mortar all complete as per direction of Engineerin- Charge. (The payment of RCC band and reinforcement shall be made seperately).				
		TOTAL OF BRICK WORK				29,37,885
5.0		JOINERY WORK				
5.1	D.S.R. 9.21	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part - I) non-decorative type, core of block board construction with frame of 1 st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters :				
5.1.1	9.21.1	35mm thick including ISI marked stainless steel butt hinges with necessary screws.	23.04	Sqm	1,685.00	38,822
5.2	D.S.R. 9.1	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).				
5.2.1	D.S.R. 9.1.1	Second class teak wood (Ghana Teak)	0.50	Cum	1,16,235.00	58,118
5.3	DSR 9.101	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.				
5.3.1	DSR 9.101.2	Twin rubber stopper	8.00	each	55.00	440

5.40	DSR 9.63	Providing and fixing ISI marked oxidised M.S. tower bolt Barrel type) with necessary screws etc. complete :				
5.4.1	DSR 9.63.1	250x10 mm	8.00	each	66.00	528
5.4.2	DSR 9.63.4	100x10 mm	8.00	each	35.00	280
5.5	10.10	Fixing standard steel glazed doors, windows and ventilators in walls, including fixing of float glass panes with glazing clips and special metalsash putty of approved make, or metal beading with screws, (only steel windows, glass panes cut to size and glazing clips or metal beading with screws, shall be supplied by department free of cost.				
5.5.1	10.10.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	200.00	kg	56.00	11200.00
5.6	10.11	Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators, side /top /centre hung, with beading and all members such as F7D, F4B, K11 B and K12 B etc. complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted, including providing and fixing of hinges, pivots, including priming coat of approved steel primer, but excluding the cost of other fittings, complete all as per approved design, (sectional weight of only steel members shall be measured for payment).				
5.6.1	10.11.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of	200.00	kg	149.00	29800.00

		C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)				
5.6.2	10.11.2	Fixing with carbon steel galvanised dash fastener of required dia and size (to be paid for separately)	200.00	kg	95.00	19000.00
5.6.3	9.17	Providing and fixing chromium plated brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete. approved quality & make with necessary screws etc all complete.	20.00	Nos.	720.00	14400.00
		TOTAL OF JOINERY WORK				1,72,588
6.0		FLOORING WORK				
6.1	D.S.R. 11.26	25mm th.Kota stone slab flooring over 20mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1:4 (1 cement :4 coarse sand)	856.80	Sqm	1,368.00	11,72,102
6.2	D.S.R. 11.27	Kota stone slabs 25 mm thick in risers of steps skirting dado and pillars laid 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.	21.42	m	1,616.00	34,614.72
6.3	DSR 16.75	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with	425.00	cum	7,735.00	32,87,375

		screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately).				
		TOTAL OF FLOORING				44,94,092

7.0		ROOFING & WATER PROOFING				
7.1		<p>Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations:</p> <p>(a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment.</p> <p>(b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thicklayer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly theadjoining</p>				

		walls upto 300 mm height including rounding of junctions of walls and slabs.				
	D.S.R. 22.7	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : i) Ist layer of 22mm to 25mm thick approved and specified rough stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement:3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with				

		stone aggregate of 10mm to 12mm nominal size spreading @ 8 cu dm/sqm thoroughly embedded in the 2nd layer.				
	DSR 22.7.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	773.00	Sqm.	1,249.00	9,65,477
	22.23	Providing and applying integral crystalline slurry of hydrophilic innature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservior, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee				

		for 10 years against any leakage.				
	22.23.1	For vertical surface two coats @ 0.70 kg per sqm	200.00	Sqm.	433.00	86,600
	22.23.2	For horizontal surface one coat @ 1.10 kg per sqm.	200.00	Sqm.	333.00	66,600
		TOTAL ROOFING & WATER PROOFING				11,18,677
8.0		Steel Work				
8.1	10.4	Providing and fixing 1 mm thick M.S. sheet sliding-shutters, with frame and diagonal braces of 40x40x6 mm angle iron, 3 mm M.S. gusset plates at the junctions and corners, 25 mm dia pulley, 40x40x6 mm angle and T- iron guide at the top and bottom respectively, including applying a priming coat of approved steel primer.	10.40	Sqm.	4,457.00	46,353

8.2	10.5	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.				
8.2.1		Using M.S. angels 40x40x6 mm for diagonal braces	2.50	Sqm.	3,954.00	9,885
8.3	10.6	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters				
8.3.1	10.6.1	80x1.25 mm M.S. laths with 1.25 mm thick top cover	66.00	Sqm	2629	1,73,514
8.3.2	10.7	Providing and fixing ball bearing for rolling shutters.	12.00	Each	375	4,500
	10.8	Extra for providing mechanical device chain and crank operation for operating rolling shutters.				
8.3.3	10.8.1	Exceeding 10.00 sqm and upto 16.80 sqm in the area	60.00	Sqm	988	59,280
8.3.4	10.8.2	Exceeding 16.80 sqm in area	20.00	Sqm	988	19,760
8.3.5	10.9	Extra for providing grilled rolling shutters manufactured out of 8 mm dia M.S. bar instead of laths as per design approved by Engineer-in-charge, (area of grill to be measured).	16.00	Sqm	597	9,552

8.4	10.25	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.				
8.4.1	10.25.1	In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	500.00	Kg	84	42,000
8.4.2	10.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	1,000.00	Kg	117	1,17,000
		TOTAL OF Steel Work				4,81,844
9.0		FINISHING WORK				
9.1	D.S.R.13.4.2	12 mm cement plaster of mix :	687.00	Sqm	235.00	1,61,445
		Providing and applying smooth internal plaster with Cement Mortar 1:6 (1 cement : 6 coarse sand) 12 mm thick on brick masonry surface /AAC block masonry surface and concrete surface, so as to match the existing line and level of surrounding plaster, inclusive of scaffolding, raking out joints, roughening exposed concrete, bond coat of cement slurry on the interface, curing and finishing at all levels/height complete as per side in-charge.				
9.2	D.S.R. 13.5.2	15 mm cement plaster on the rough side of single or half brick wall of mix.	617.00	Sqm	271.00	1,67,207
		Providing and applying smooth internal plaster with Cement Mortar 1:6 (1 cement : 6 coarse sand) 15 mm thick on brick masonry surface /AAC block masonry surface and concrete surface, so as to match the existing line and level of surrounding plaster, inclusive of				

		scaffolding, raking out joints, roughening exposed concrete, bond coat of cement slurry on the interface ,curing and finishing at all levels/height complete as per side in-charge.				
9.3	D.S.R. 13.12	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and a top layer 6 mm thick cement plaster 1:3 (1 cement : 3 coarse sand) finished rough with sponge.	1,700.00	Sqm	372.00	6,32,400
9.4	D.S.R.13.16	6 mm cement plaster to ceiling of mix :	1,474.00	Sqm	203.00	2,99,222
9.5	DSR 13.46.1	Finishing walls with Acrylic Smooth exterior paint of required shade,New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	1,675.00	Sqm	147.00	2,46,225
9.6	DSR 13.37	White washing with lime to give an even shade :				
9.6.1	13.37.1	New work (three or more coats)	1,454.00	Sqm	25.00	36,350
9.70	D.S.R 13.82	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.				
9.7.1	D.S.R 13.82.2	Two coats	1,174.12	Sqm	95.00	1,11,541
9.8	D.S.R. 13.62	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :Asian / Nerolac / or equivalent as per				

		approved by engineer incharge.				
9.8.1	13.62.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	165.00	Sqm	158.00	26,070
9.9	DSR 13.80	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	1,174.12	Sqm	103.00	1,20,934
9.10	12.45	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64				

		mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long drywall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of drywall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with commended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :				
	12.45.3	12.5 mm thick tapered edge gypsum moisture resistant board	200.00	Sqm	1,148.00	2,29,600
		TOTAL OF FINISHING WORK				20,30,994
10.00		Fencing Work				
10.1	16.70	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.				
10.1.1	16.70.2	Made of G.I. wire of dia. 4 mm, PVC coated to achieve outer dia not less than 5 mm in required colour and shade	1,241.00	Sqm	737.00	9,14,617
		Total of Fencing Work				9,14,617
11.0		INTERNAL PLUMBING WORK				
		Sanitary Fixtures (Fixing)				
11.1	17.78	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete	2	Each	12368	24,736.00
11.2	17.80	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	2	Each	6173	12,346.00

11.3	17.7A	Providing and fixing wash basin with C.I. brackets, 15 mm dia CP Brass single hole basin mixer of approved quality and make, including painting of fittings and brackets, cutting and making good the walls wherever required:-				
11.3.1		(a) White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer	2	Each	3932	7,864.00
11.4	17.25	Providing and fixing white vitreous china wash basin including making all connections but excluding the cost of fittings :				
11.4.1	17.25.1	Flat back wash basin of size 630x450 mm	2	Each	1017	2,034.00
12.0		Total of Sanitary Fixtures (Fixing)				46,980
		CP Fittings				
12.1	18.53	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
12.1.1	18.53.1	15mm nominal bore	12	Each	475.0	5,700.00
12.2	D.S.R. 17.22A	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineering- charge.	4	Each	717	2,868.00
		Total of CP Fittings				8,568
13.0		SOIL, WASTE. VENT & RAIN WATER PIPES				
13.1	D.S.R. 17.35	Providing and fixing soil, waste and vent pipes:				
	D.S.R. 17.35.1	100 mm dia				
13.1.1	D.S.R. 17.35.1.3	Hubless centrifugally cast (spun) iron pipes epoxy Coated inside & outside IS:15905	100	Rmt	939	93,900.00

13.2	D.S.R. 17.37	Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including cost of cutting holes and making good the walls etc.				
13.2.1	D.S.R. 17.37.1	For 100 mm dia pipe	30	Nos	257	7,710.00
13.3	D.S.R. 17.38	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete				
13.3.1	D.S.R. 17.38.1	100 mm dia				
13.4	D.S.R. 17.38.1.3	Hubless centrifugally cast (spun) iron pipes epoxy Coated inside & outside IS:15905	12	Nos	490.00	5,880.00
13.5	D.S.R. 17.39	Providing and fixing plain bend of required degree.				
	D.S.R. 17.39.1	100 mm dia				
13.5.1	D.S.R. 17.39.1.3	Hubless centrifugally cast (spun) iron pipes epoxy Coated inside & outside IS:15905	12	Nos	307	3,684.00
13.6	D.S.R. 17.44	Providing and fixing single equal plain junction of required degree:				
	D.S.R. 17.44.1	100x100x100 mm				
13.6.1	D.S.R. 17.44.1.3	Hubless centrifugally cast (spun) iron pipes epoxy Coated inside & outside IS:15905	10	Nos	510	5,100.00
13.7	D.S.R. 17.57A	Providing and fixing shielded coupling for Hubless centrifugally cast-iron pipe				
	D.S.R. 17.57A.1	100 mm				
13.7.1	D.S.R. 17.57A.1.1	SS 304 grade coupling with EPDM rubber gasket	50	Nos	361	18,050.00

13.8	D.S.R. 17.60	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors:				
	D.S.R. 17.60.1	100 mm inlet and 100 mm outlet				
13.8.1	D.S.R. 17.60.1.3	Hubless centrifugally cast (spun) iron pipes epoxy Coated inside & outside IS:15905	20	Nos	677	13,540.00
13.9	12.41	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.				
13.9.1	12.41.2	110 mm diameter	100	Meter	272	27,200.00
13.10	12.42	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.				
	12.42.5	Bend 87.5°				
13.10.1	2.42.5.2	110 mm Bend	12	Each	116	1,392.00
	12.42.6	Shoe (Plain)				
13.10.2	12.42.6.2	110 mm Shoe	12	Each	102	1,224.00
13.11	12.43	Providing and fixing unplasticised - PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement: 4 coarse sand) and making good the wall				

		etc. complete.				
13.11.1	12.43.2	110 mm	100	Each	258.00	25,800.00
		TOTAL OF SOIL, WASTE. VENT & RAIN WATER PIPES				2,03,480
14.0		WATER SUPPLY				
14.1	D.S.R. 18.10.4	Providing and fixing G.I. pipes class B complete with G.I. fittings and clamps, i/c cutting and making good the walls etc.				
14.1.1	D.S.R. 18.10.4	32 mm dia nominal bore	50	Rmt	473	23,650.00
14.1.2	D.S.R. 18.10.6	50 mm dia nominal bore	50	Rmt	702	35,100.00
14.2	D.S.R. 18.8	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.				
14.2.1	D.S.R. 18.8.2	20 mm nominal bore	40	Rmt	427	17,080.00
14.3	D.S.R. 18.7	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				
14.3.1	DSR.18.7.2	20mm Nominal Bore	25	Rmt	274	6,850.00
14.3.2	DSR.18.7.3	25mm Nominal Bore	50	Rmt	330	16,500.00
14.3.3	DSR.18.7.4	32mm Nominal Bore	25	Rmt	429	10,725.00
14.3.4	D.S.R.18.7.5	40 mm nominal bore	25	Rmt	579	14,475.00
14.4	D.S.R. 18.12	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc. Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.				
14.4.1	D.S.R. 18.12.5	40 mm dia nominal bore	100	Rmt	431	43,100.00
14.4.2	D.S.R. 18.12.6	50 mm dia nominal bore	100	Rmt	505	50,500.00
14.5.1	17.16A	Providing and fixing 8 mm dia C.P. / S.S. Jet with flexible tube upto 1 metre long with S.S. triangular plate to European type W.C. of quality and make as approved by Engineer - in - charge.	4	Each	266	1,064.00
	18.51	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.triangular plate to European type W.C. of quality and make as approved by Engineer - in - charge.				
14.5.2	18.51.1	15 mm nominal bore	4	Each	493	1,972.00
		TOTAL OF WATER SUPPLY				2,21,016
		EXTERNAL PLUMBING WORK				

15.0		EXTERNAL SEWERAGE / DRAINAGE WORK				
15.1	DSR 19.4	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:				
	DSR 19.4.1	100x100 mm size P type				
15.1.1	DSR 19.4.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	4	each	2060	8,240.00
15.2	D.S.R.2.10	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
		All Kind of Soil				
15.2.1	D.S.R.2.10.1 .1	Pipes, cables etc. not exceeding 80 mm dia.	50	Metre	199.00	9,950.00
15.2.2	D.S.R.2.10.1 .2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia.	50	Metre	325.00	16,250.00
15.2.3	D.S.R.2.10.1 .3	Pipes, cables etc. exceeding 300 mm dia. but not exceeding 600 mm dia.	50	Metre	508.00	25,400.00

15.3.1	D.S.R.19.16	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS : 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	50	Nos	413.00	20,650.00
	19.7	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished				

		with a floating coat of neat cement complete as per standard design				
	19.7.1	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
15.3.2	19.7.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2	Each	9737.00	19,474.00
15.4	19.8	Extra for depth for manholes:				
	19.8.1	Size 90x80 cm				
15.4.1	19.8.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2.5	Metre	6699.00	16,747.50
15.5	D.S.R.19.9	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :				

	D.S.R.19.9.1	0.91 m deep with SFRC cover and frame (heavy duty, HD- 20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :				
15.5.1	D.S.R.19.9.1 .1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2	Nos	9855.00	19,710.00
15.6	D.S.R.19.10	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m				
15.6.1	D.S.R.19.10. 1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	0.6	Mtr	5758	3,454.80
15.7	D.S.R.19.6	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete:				
15.7.1	D.S.R.19.6.2	150 mm dia. R.C.C. pipe	25	Metre	413.00	10,325.00
15.7.2	D.S.R.19.6.3	250 mm dia. R.C.C. pipe	100	Metre	674.00	67,400.00
15.7.3	D.S.R.19.6.4	300 mm dia. R.C.C. pipe	40	Metre	771.00	30,840.00
15.8	D.S.R.19.3	Providing and laying cement concrete 1:5:10 (1 cement: 5 coarse sand: 10 graded stone aggregate 40 mm nominal size) up to haunches of R.C.C. pipes including bed concrete as per standard design:				
15.8.1	D.S.R.19.3.2	150 mm dia. R.C.C. pipe	25	Metre	562.00	14,050.00
15.8.2	D.S.R.19.3.4	250 mm dia. R.C.C. pipe	100	Metre	769.00	76,900.00
15.8.3	D.S.R.19.3.5	300 mm dia. R.C.C. pipe	40	Metre	887.00	35,480.00

15.9	D.S.R. 19.27	Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement: 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design:				
15.9.1	D.S.R. 19.27.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	4	Each	4651.00	18,604.00
15.9.2	D.S.R. 18.48A	Providing and fixing rectangular high density polyethylene water storage loft tank with cover, conforming to ISI : 12701, colour of opaque white or as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet & over flow pipes. The base support i/c fittings & fixtures for tank shall be paid separately.	2,000.00	Per Litre	8.00	16,000.00
		TOTAL OF EXTERNAL PLUMBING WORK				4,09,475
		TOTAL OF SCHEDULE ITEMS				2,85,71,104
NON-SCHEDULE ITEM						
16.0		MISCELLANEOUS WORKS				
		Providing and fixing Glass Reinforced Concrete (G.R.C) Screens in approved size, pattern, design, shade and thickness of 50mm on frame and design element in 30mm thick casted with power spray method have weight approximately between 3.5 – 4 Kg per Sq. Ft. . The screens should be made from ‘53 grade’ White Portland Cement, Quartz, Fine Silica Sand, having Alkali	50.00	Sqmt	3,822.00	1,91,100

		Resistant Glass Fiber percentage 3.5-4% with minimum zirconia content 16%, Super Plasticizers, Polymers and U.V resistant non fading Synthetic inorganic exterior grade pigments should be used for homogeneous concrete pigmentation . The material casting should take place in FRP Moulds. The GRC screens flexural strength average L.O.P should be above or equivalent to 6N/mm ² & Modulus of Rupture should be above or equivalent to 15 N/mm ² .The fixing of Screens should be 'Dry fixing' i.e. to be done with M.S Galvanized Clamps, or S.S. -304 clamps, fixtures and fasteners of Hilti / Fischer or self - tapping screws or as per approved shop drawings approved by Architects / consultants,including scaffoldings required etc. complete by specilized vender in strict supersision as per direction of engineer. (NOTE- MS base frame requiried to support GRC panel to be paid for in separte head.				
16.2	NS	Supplying, laying and fixing of std. chicken wire mesh IRCS-6 (6 x 6 x 6/6) in positions at junctions of concrete & masonry works etc with nails/neat cement. all complete as per specification, drawing and instructions of enginner in charge.	2,116.52	M2	26	55,030
16.3	NS	Providing, supplying and filling of local earth by mechanical transport up to any lead, also including rolling, compacting and watering of the earth in layes not exceeding 20cm in trenches, plinth side of foundation etc. complete	4,932.00	Cum	269.50	13,29,174

16.4	NS	Providing and fixing Rebar with super bond resin and hardner of FIS SB or Hilti or approved equivalent make. The chemical should have working life of 50 years. Drilling hole with suitable drill bit to the specified depth through a rotary hammer, cleaning with brush and jet of clean air, filling resin and hardner using a static mixture to ensure proper mixing of chemical. Use of piston plugs and extension hose for longer embedment depths to ensure proper injection of the chemical without air bubble and then fixing the rebar. Conducting occassional site inspection, executing work by trained personal and occassional supervision from the manufacturer's representative in India. The installation and setting instructions should be strictly followed as per the manufacturer recommendation.				
16.4.1		8 mm dia	25.00	Each	117.00	2,925
16.4.2		10 mm dia	25.00	Each	171.00	4,275
16.4.3		12 mm dia	25.00	Each	215.00	5,375
		TOTAL OF NON-SCHEDULE ITEMS				15,87,879
		GRAND TOTAL OF SCHEDULE-II (SCHEDULE + NON-SCHEDULE)				3,01,58,983
		GRAND TOTAL OF SCHEDULE-I & SCHEDULE-II				15,48,66,956
The rates mentioned in Schedule-I and Schedule-II are inclusive of all taxes, duties and levies except GST.						

FORMAT OF CONTRACT AGREEMENT

(To be executed on non-judicial stamp paper of appropriate value)

THIS AGREEMENT ("*Agreement*") is made at Noida on the ____ day of

BETWEEN

Dedicated Freight Corridor Corporation of India Limited (a Govt. of India Enterprise under Ministry of Railways) and a company incorporated under the provisions of the Companies Act, 1956 having its registered office at 5th Floor, Supreme Court Metro Station Complex, New Delhi, India – 110001, represented through its Chief General Manager (*hereinafter referred to as "DFCCIL" which expression shall, unless repugnant to the context, be deemed to include its successors and assigns and called 'the Employer'*) as one part and _____ a company / corporation / JV incorporated under the laws of -----having its principal place of business at ----- (*hereinafter called "the Contractor"*) as other part.

WHEREAS the Contractor has agreed with the DFCCIL for performance of the works _____ set forth in the Schedule hereto annexed upon the Standard General Conditions of Contract, corrected upto latest correction slips and the Specifications of _____ CPWD/Railway/DFCCIL corrected upto the latest correction slips and the Schedule of Rates of _____ CPWD/Railway/DFCCIL, corrected upto latest correction slips and the Special Conditions and Special Specifications, if any and in conformity with the drawings here-into annexed AND WHEREAS the performance of the said works is an act in which the public are interested.

NOW THIS INDENTURE WITNESSETH that in consideration to the payments to be made by the DFCCIL, the Contractors will duly perform the said works in the said schedule set forth and shall execute the same with great promptness, care and accuracy in a workman like manner to the satisfaction of the DFCCIL and will complete the same in accordance with the said specifications and said drawings and said conditions of contract on or before the _____ day of _____ 20____ and will maintain the said works for a period of _____ Calendar months from the certified date of their completion and will observe, fulfill and keep all the conditions therein mentioned (which shall be deemed and taken to be part of this contract, as if the same have been fully set forth herein), AND the DFCCIL, both hereby agree that if the Contractor shall duly perform the said works in the manner aforesaid and observe and keep the said terms and conditions, the DFCCIL will pay or cause to be paid to the Contractor for the said works on the final completion thereof the amount due in respect thereof at the rates specified in the Schedule hereto annexed.

For and on behalf of the Contractor

Signature of the authorized official

Name of the official

Stamp/seal of the Contractor

For and on behalf of the Employer

Signature of the authorized official

Name of the official

Stamp/Seal of the Employer

SIGNED, SEALED AND DELIVERED

By the said

By the said

Name

Name

on behalf of the Contractor in the
presence of:

on behalf of the Employer in the
presence of:

Witness

Witness

Name

Name

Address

Address

Enclosures: -

1. Annexure 'A' - Tender Papers No.

2. Annexure 'B' - Letter of Acceptance No.

along with Summary of Prices

3. Other enclosures -

Dated

Format of Bank Guarantee for Performance Security

Bank Guarantee no.....

Dated.....

To,
Chief Project Manager,
Dedicated Freight Corridor Corporation of India Ltd/Noida Unit
D-89, 1st Floor, Sector-2,
Noida-20 1301

Reference:-Contract No....., awarded on

This deed of Guarantee made this day of _____ between _____ (*name of Bank*) having registered office at _____ and branch office at _____ (*hereinafter referred to as "Bank"*) of the one part and Dedicated Freight Corridor Corporation of India Limited (*hereinafter called the Employer*) of the other Part.

Whereas Dedicated Freight Corridor Corporation of India Limited has awarded the Contract no..... for construction of (*hereinafter called "the Contract"*) to M/s..... its registered office at (*hereinafter called "the Contractor"*).

Whereas the contractor is bound by the said Contract to submit to the Employer an irrevocable performance security guarantee bond for a total amount of Rs..... (*Rs. In Words*) only.

Now, we the undersigned (*Name of Bank officials*), of the bank being fully authorized to sign and to incur obligations for and on behalf of the Bank hereby declare that the said Bank will guarantee the Employer the full amount of Rs..... (*Rs. In Words*) as stated above.

After the Contractor has signed the aforesaid contract with the Employer, the Bank further agree and promise to pay the amount due and payable under this guarantee without any demure merely on a demand from the Employer stating that the amount claimed is due by way of loss or damage cause to or would be caused or suffered by the employer by reason of any breach by the said contractor of any of the terms or conditions contained in the said agreement or by reason of the contractor failure to perform the said agreement. 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..... (*Rs. in Words*) only.

We..... (*indicate the name of Bank*), further undertake to pay to the Employer any money so demanded notwithstanding any dispute or dispute raised by the contractor in any suit or proceeding pending before any court or Tribunal relating to liability under this present being absolute and unequivocal.

The payment so made by us (*name of Bank*) under this bond shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.

We..... (*indicate the name of Bank*), to further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said agreement have been full paid and its claims satisfied or discharged by (*Designation & Address of Contract signing authority*) on behalf of Employer certify that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor and accordingly discharges this guarantee.

Notwithstanding anything to the contrary contained herein the liability of the bank under this guarantee will remain in force and effect until such time as this guarantee is discharged in writing by the employer or until (*date of validity/extended validity*) whichever is earlier and no claim shall be valid under the guarantee unless notice in writing thereof is given by the Employer within validity/extended validity period of guarantee from the date aforesaid.

Provided always that we (*Name of Bank*) unconditionally undertakes to renew this guarantee or to extend the period of guarantee from year to year before the expiry of the period or the extended period of guarantee, as the case may be on being called upon to do so by the Employer. If the guarantee is not renewed or the period extended on demand, we (*Name of Bank*) shall pay the Employer the full amount of the guarantee on demand without demur.

We..... (*indicate the name of Bank*), to further agree with the Employer that the Employer shall have the fullest liberty without our consent and without effecting in any manner out of obligation hereunder to vary any of the terms and conditions of the said contract from time to time or to postpone for any time or from time to time any power exercisable by the Employer against the said contractor and to forbear or enforce any of the terms and conditions of the said agreement and we shall not be relieved from our liabilities by reason of such variation, or extension being granted to the said contractor for any breach act or omission on the part of the Employer or any indulgence by the Employer to the said contractor or by any such matter or thing whatsoever which under the law relating to sureties for the said reservation would relieve us from the liability.

The Guarantee hereinbefore contained shall not be affected by any change in the constitution of Bank or of the Contractor.

The expressions “the Employer”, “the Bank” and “the Contractor” hereinbefore used shall include their respective successors and assigns.

We..... (*Name of the 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 hereinbefore:

- i) Our liability under this Bank Guarantee shall not exceed and restricted to Rs.....(*Rs. in words*).
- ii) This Bank Guarantee shall be valid up to, unless extended on demand by Employer.
- iii) The Bank is liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if Employer serve a written claim or demand on or before.....

IN WITNESS WHEREOF we of the Bank have signed and stamped this guarantee on this day of being herewith duly authorized.

Bank seal

Signature of Bank Authorize Official with seal

Name.....

Designation:

Address:

Witness:

1. Name:

Designation:

Address:

2. Name:

Designation:

Address:

SAMPLE

STANDING INDEMNITY BOND FOR “ON ACCOUNT” PAYMENTS

(To be executed on non-judicial stamp paper of appropriate value)

We, M/s _____ hereby undertake that we hold at our stores Depot/s at _____ for and on behalf of the Managing Director/ DFCCIL acting in the _____ premises through the Chief General Manager / DFCCIL/Noida or his successor (hereinafter referred to as “The Employer”) all materials for which “On Account” payments have been made to us against the Contract for (_____) on the section _____ DFCCIL also referred to as Group/s _____ vide letter of Acceptance of Tender _____ dated _____ and material handed over to us by the employer for the purpose of execution of the said contract, until such time the materials are duly erected or otherwise handed over to him.

We shall be entirely responsible for the safe custody and protection of the said materials against all risk till they are duly delivered as erected equipment to the employer or as he may direct otherwise and shall indemnify the employer against any loss/damage or deterioration whatsoever in respect of the said material while in our possession and against disposal of surplus materials. The said materials shall at all times be open to inspection by any officer authorized by the Chief Project Manager /DFCCIL/Noida in charge of Dedicated Freight Corridor Corporation of India Limited (*Whose address will be intimated in due course*).

Should any loss, damage or deterioration of materials occur or surplus material disposed off and refund becomes due, the Employer shall be entitled to recover from us the 85% of supply portion of Part III, Chapter – II (*Form - 4*) to the Contract (*as applicable*) and also compensation for such loss or damage if any long with the amount to be refunded without prejudice to any other remedies available to him by deduction from any sum due or any sum which at any time hereafter becomes due to us under the said or any other Contract.

Dated this day ____ of ____20

for and on behalf of

M/s _____ (Contractor)

Signature of witness

Name of witness in Block letter.

Address.

INDEMNITY BOND

(To be executed on non-judicial stamp paper of appropriate value)

This deed of Indemnity Bond is made at NOIDA, on this day of , we,,through its Authorized Signatory (hereinafter called ‘Contractor) AND M/s DFCCIL, D-89, Sector-2, Noida, District Gautam Budh Nagar, U.P., (Hereinafter called ‘Client’).

We, indemnify and save harmless the Railway/DFCCIL from and against all actions, suit proceedings losses, costs, damages, charges, claims and demands of every nature and description brought or recovered against the Railways/DFCCIL by reason of any act or omission of-----
------(Contractor), his agents or employees, in the execution of the works or in his guarding of the same. All sums payable by way of compensation under any of these conditons shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

IN WITNESS WHEREOF the Contractor has executed this Bond of Indemnity at Noida, on this..... of 2019.

For and Behalf of
Signature of Witness-1
Name of Witness-1
(in Block Letter)
Address-1

Authorized Signatory

for and Behalf of
Signature of Witness-1
Name of Witness-1
(in Block Letter)
Address-1

Authorized Signatory

ECS / NEFT / RTGS

MANDATE FORM

Date :-

To,
Chief General Manager/Noida
DFCCIL, New Delhi.
Sub : ECS / NEFT / RTGS payments

We refer to the ECS / NEFT / RTGS set up by DFCCIL for remittance of our payments using RBI's NEFT / RTGS scheme, our payments may be made through the above scheme to our under noted account.

Name of Bank	
Name of City	
Bank Code No	
Name of Bank Branch	
Branch Code No	
Address of Bank Branch	
Telephone Number of Bank Branch	
Fax No of Bank Branch	
Name of customer / Tenderer as per account	
Account Number of Tenderer appearing on cheque book	
Type of Account (<i>S. B. / Current / Cash credit</i>)	
IFSC code for NEFT	
IFSC code for RTGS	
9-Digit-code number of the bank and branch appearing on the MICR cheque issued by the bank.	
Details of Cancelled Cheque leaf	
Telephone no of tenderer	
Cell Phone Number of the tenderer to whom details with regard to the status of bill submitted to Accounts Office i.e Co6 & Co7 & Cheque Purchase Orders particulars can be intimated through SMS	
Tenderer's E - mail ID	

Confirmed by Bank signature of tenderer With stamp and address

Enclose a copy of crossed cheque.

DRAFT MEMORANDUM OF UNDERSTANDING (MOU) For
JOINT VENTURE PARTICIPATION
BETWEEN

(To be executed on non-judicial stamp paper of appropriate value)

M/s having its registered office at (*hereinafter referred to as*
.....) acting as the Lead Partner of the first part,

and

M/shaving its registered office at (*hereinafter referred*
to as `..... ') in the capacity of a Joint Partner of the other part.

and

M/shaving its registered office at (*hereinafter referred*
to as `..... ') in the capacity of a Joint Partner of the other part.

The expressions of and shall wherever the context admits, mean and include their respective legal representatives, successors-in-interest and assigns and shall collectively be referred to as “the Parties” and individually as “the Party”

WHEREAS:

Dedicated Freight Corridor Corporation of India Limited (DFCCIL) [hereinafter referred to as “Client”] has invited bids for ... “[Insert name of work]”

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. The following documents shall be deemed to form and be read and construed as an integral part of this MOU.
 - (i) Notice for Bid, and
 - (ii) Bidding document
 - (iii) Any Addendum/Corrigendum issued by Dedicated Freight Corridor Corporation of India Limited
 - (iv) The bid submitted on our behalf jointly by the Lead Partner.
2. The ‘Parties’ have studied the documents and have agreed to participate in submitting a ‘bid’ jointly.
3. M/sshall be the lead member of the JV for all intents and purpose and shall represent the Joint Venture in its dealing with the Client. For the purpose of submission of

bid proposals, the parties agree to nominate as the leader duly authorized to sign and submit all documents and subsequent clarifications, if any, to the Client. However M/s shall not submit any such proposals, clarifications or commitments before securing the written clearance of the other partner which shall be expeditiously given by M/s.....to M/s.....

4. The `Parties' have resolved that the distribution of responsibilities and their proportionate share in the Joint Venture is as under:

(a) Lead Partner;

(i)

(ii)

(iii)

(b) Joint Venture Partner

(i)

(ii)

(iii)

[Similar details to be given for each partner]

5. JOINT AND SEVERAL RESPONSIBILITY

The Parties undertake that they shall be jointly and severally liable to the Client in the discharge of all the obligations and liabilities as per the contract with the Client and for the performance of contract awarded to their JV.

6. ASSIGNMENT AND THIRD PARTIES

The parties shall co-operate throughout the entire period of this MOU on the basis of exclusivity and neither of the Parties shall make arrangement or enter into agreement either directly or indirectly with any other party or group of parties on matters relating to the Project except with prior written consent of the other party.

7. EXECUTIVE AUTHORITY

The said Joint Venture through its authorized representative shall receive instructions, payments from the Client. The management structure for the project shall be prepared by mutual consultations to enable completion of project to quality requirements within permitted cost and time.

8. BID SECURITIES

Till the award of the work, JV firm/Lead Partner of JV firm shall furnish Bid Security to the Client on behalf of the joint venture which shall be legally binding on all the members of the Joint Venture.

9. BID SUBMISSION

Each Party shall bear its own cost and expenses for preparation and submission of the bid and all costs until conclusion of a contract with the Client for the Project. Common expenses shall be shared by all the parties in the ratio of their actual participation.

10. INDEMNITY

Each party hereto agrees to indemnify the other party against its respective parts in case of breach/default of the respective party of the contract works of any liabilities sustained by the Joint Venture.

11. For the execution of the respective portions of works, the parties shall make their own arrangements to bring the required finance, plants and equipment, materials, manpower and other resources.

12. DOCUMENTS & CONFIDENTIALITY

Each Party shall maintain in confidence and not use for any purpose related to the Project all commercial and technical information received or generated in the course of preparation and submission of the bid.

13. ARBITRATION

Any dispute, controversy or claim arising out of or relating to this agreement shall be settled in the first instance amicably between the parties. If an amicable settlement cannot be reached as above, it will be settled by arbitration in accordance with the Indian Arbitration and Conciliation Act 1996 or any amendments thereof. The venue of the arbitration shall be Delhi.

14. VALIDITY

This Agreement shall remain in force till the occurrence of the earliest to occur of the following, unless by mutual consent, the Parties agree in writing to extend the validity for a further period.

- a. The bid submitted by the Joint Venture is declared unsuccessful, or
 - b. Cancellation/ shelving of the Project by the client for any reasons prior to award of work
 - c. Execution of detailed JV agreement by the parties, setting out detailed terms after award of work by the Client.
15. This MOU is drawn in number of copies with equal legal strength and status. One copy is held by M/s and the other by M/s..... &M/s and a

copy submitted with the proposal.

16. This MOU shall be construed under the laws of India.

17. NOTICES

Notices shall be given in writing by fax confirmed by registered mail or commercial courier to the following fax numbers and addresses:

Lead Partner

Other Partner(s)

.....

.....

(Name & Address)

(Name & Address)

IN WITNESS WHEREOF THE PARTIES, have executed this MOU the day, month and year first before written.

M/s.....

M/s.....

.....

.....

(Seal)

(Seal)

Witness

1.....(Name & Address)

2..... (Name & Address)

Notes: (1) In case of existing joint venture, the certified copy of JV Agreement may be furnished.

DRAFT FORMAT OF JOINT VENTURE AGREEMENT

To be executed on non-judicial stamp paper of appropriate value in accordance with relevant Stamp Act and to be registered with appropriate authority under Registration Act.

The JV agreement shall be structured generally as per contents list given below:

A. CONDITIONS AND TERMS OF JV AGREEMENT

1. Definitions and Interpretation
2. Joint Venture – Include Equity of members, transferability of shareholding of equity of a partner leaving during the subsistence of the contract.
3. Proposal Submission
4. Performance – To indicate scope of responsibility of each member
5. Language and Law
6. Exclusively
7. Executive Authority
8. Documents
9. Personnel
10. Assignment and Third Parties
11. Severability
12. Member in Default
13. Duration of the Agreement
14. Liability and sharing of risks
15. Insurance
16. Sharing of Promotion and Project Costs, Profits, Losses and Remuneration
17. Financial Administration and Accounting
18. Guarantees and Bonds
19. Arbitration
20. Notices
21. Sole Agreement and Variation

B. SCHEDULES

1. Project and Agreement Particulars
2. Financial Administration Services
3. Allocation of the obligations
4. Financial Policy and Remuneration

PRO-FORMA LETTER OF PARTICIPATION FROM EACH PARTNER OF JOINT VENTURE (JV)

(To be executed on non-judicial stamp paper of appropriate value in accordance with relevant Stamp Act and to be registered with appropriate authority under Registration Act.)

No....

Dated

From:

.....
.....

To,
The Chief General Manager/Noida Unit,
Dedicated Freight Corridor Corporation of India Limited
D-89, 1st Floor, Sector-2
Noida- 201301.

Gentlemen,

Sub: Tender for Supply, Erection, Testing and Commissioning of 33 kV Sub-stations, DG set and related works for DFCCIL Integrated Office Cum Residential Complex at Sec-145, Noida.

Ref: Your notice for Invitation for Tender No. **DFCCIL/NOIDA UNIT/Electrical/ Substation/ 2021/05.**

We wish to confirm that our company/firm has formed a Joint Venture with(i)..... & ii) for the purposes associated with IFB referred to above.

*(Members who are not the lead partner of the JV should add the following paragraph) *.*

2. 'The JV is led by ... whom we hereby authorise to act on our behalf for the purposes of submission of Bid for and authorise to incur liabilities and receive instructions for and on behalf of any and all the partners or constituents of the Joint Venture.'

OR

*(Member(s) being the lead member of the group should add the following paragraph) **

2. 'In this group we act as leader and, for the purposes of applying for Bid, represent the Joint Venture:

3. In the event of our JV being awarded the contract, we agree to be jointly with i) & ii) (*names of other members of our JV*) and severally liable to the Dedicated Freight Corridor Corporation of India Limited, its successors and assigns for all obligations, duties and responsibilities arising from or imposed by the contract subsequently entered into between Dedicated Freight Corridor Corporation of India Limited and our JV.
4. ***I/We, further agree that entire execution of the contract shall be carried out exclusively through the lead partner.**

Yours faithfully,
(Signature)

(Name of Signatory)

(Capacity of Signatory)

Company Seal * Delete as applicable

Note: In case of existing joint venture, the certified copy of JV Agreement may be furnished.

**FORMAT FOR POWER OF ATTORNEY FOR AUTHORISED SIGNATORY OF
JOINT VENTURE (JV) PARTNERS**

POWER OF ATTORNEY*

(To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant stamp Act. The stamp paper to be in the name of the company who is issuing the power of Attorney)

Know all men by these presents, we ... do hereby constitute, appoint and authorise Mr/Ms. who is presently employed with us and holding the position ofas our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our bid for the work of..... Including signing and submission of all documents and providing information / responses to Dedicated Freight Corridor Corporation of India Limited, representing us in all matters, dealing with Dedicated Freight Corridor Corporation of India Limited in all matters in connection with our bid for the said project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this the day of 2021.

(Signature of authorised Signatory)

Signature of Lead Partner

Signature of JV Partner(s)

.....

.....

(Signature and Name in Block letters of Signatory)

Seal of Company

Witness

Witness 1: Name:

Witness 2: Name:

Address:

Address:

Occupation:

Occupation:

**Notes:* To be executed by all the partners jointly, in case of a Joint Venture.

**FORMAT FOR POWER OF ATTORNEY TO
LEAD PARTNER OF JOINT VENTURE (JV)**

(To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant stamp Act. The stamp paper to be in the name of the company who is issuing the power of Attorney)

POWER OF ATTORNEY*

Whereas Dedicated Freight Corridor Corporation of India Limited has invited Bids for the work of **“Supply, Erection, Testing and Commissioning of 33 kV Sub-stations, DG set and related works for DFCCIL Integrated Office Cum Residential Complex at Sec-145, Noida.”**

Whereas, the members of the Joint Venture comprising of M/s. ..., M/s. ..., M/s., and M/s. are interested in submission of bid for the work of **“Supply, Erection, Testing and Commissioning of 33 kV Sub-stations, DG set and related works for DFCCIL Integrated Office Cum Residential Complex at Sec-145, Noida.”** in accordance with the terms and conditions contained in the bidding documents.

Whereas, it is necessary for the members of the Joint Venture to designate one of them as the Lead Partner, with all necessary power and authority to do, for and on behalf of the Joint Venture, all acts, deeds and things as may be necessary in connection with the Joint Venture's bid for the project, as may be necessary in connection the Joint Venture's bid for the project.

NOW THIS POWER OF ATTORNEY WITNESSETH THAT:

We, M/s., hereby designate M/s., being one of the partners of the Joint Venture, as the lead partner of the Joint Venture, to do on behalf of the Joint Venture, all or any of the acts, deeds or things necessary or incidental to the Joint Venture's bid for the contract, including submission of bid, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Joint Venture in all its dealings with the Railway / DFCCIL or any other Government Agency or any person, in connection with the Bid/contract for the said work until culmination of the process of bidding till the contract agreement if successful, is entered into with the Dedicated Freight Corridor Corporation of India Limited and thereafter till the expiry of the contract agreement.

**To be executed by all the members of the JV except the lead member. The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*

We hereby agree to ratify all acts, deeds and things lawfully done by lead member, our said attorney, pursuant to this power of attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/ Joint Venture.

Dated this the Day of 2021

.....

(Signature)

.....

(Name in Block letters of Executants)

Seal of Company

Witness 1	
Name:	
Address:	
Occupation:	
Witness 2	
Name:	
Address:	
Occupation:	

PROFORMA FOR TIME EXTENSION

No. _____ Dated: _____

Sub: (i) _____ *(name of work)*.

(ii) Acceptance letter no. _____

(iii) Understanding/Agreement no. _____

Ref: _____ *(Quote specific application of Contractor for extension to the date received)* _____

Dear Sir,

1. The stipulated date for completion of the work mentioned above is _____. From the progress made so far and the present rate of progress, it is unlikely that the work will be completed by the above date *(or 'However, the work was not completed on this date')*.
2. Expecting that you may be able to complete the work, if some more time is given, the competent authority, although not bound to do so, hereby extends the time for completion from _____ to _____.
3. Please note that an amount equal to the liquidated damages for delay in the completion of the work after the expiry of _____ *(give here the stipulated date for completion with/without any penalty fixed earlier)* will be recovered from you as mentioned in Clause, 17-B of the Standard General Conditions of Contract for the extended period, notwithstanding the grant of this extension. You may proceed with the work accordingly.
4. The above extension of the completion date will also be subject to the further condition that no increase in rates on any account will be payable to you.
5. Please intimate within a week of the receipt of this letter your acceptance of the extension of the conditions stated above.
6. Please note that in the event of your declining to accept the extension on the above said conditions or in the event of your failure after accepting or acting upto this extension to complete the work by _____ *(here mention the extended date)*, further action will be taken in terms of Clause 62 of the Standard General Conditions of Contract.

Yours faithfully
For and on behalf of the Employer
Name of the Official:-
Stamp/Seal of the Employer

CERTIFICATE OF FITNESS

1. (a) Serial Number _____
(b) Date _____
2. Name of person examined _____
3. Father's Name: son/daughter of _____
Residing at _____
4. Sex _____
5. Residence: _____

6. Physical fitness _____
7. Identification marks _____
8. Date of birth, if available, and/or certified age _____
I certify that I have personally examined (name) _____ who is desirous of being employed in a factory or on a work requiring manual labour and that his/her age as nearly as can be ascertained from my examination, is _____ years.

I certify that he/she is fit for employment in a factory or on a work requiring manual labour as an adult/child.
9. Reasons for:
(a) refusal to grant certificate, or _____
(b) revoking the Certificate _____

Signature or Left Hand
Thumb Impression of the person Examined

Signature of Certifying Surgeon

Note: In case of physical disability, the exact details of the cause of the physical disability should be clearly stated.

PROFORMA OF 7 DAYS NOTICE FOR WORKS AS A WHOLE/IN PARTS

(DETAILS OF PART OF WORK TO BE MENTIONED)

DFCCIL
(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

1. In spite of repeated instructions to you by the subordinate offices as well as by this office in various letters of even no. _____, dated _____; you have failed to start work/show adequate progress and/or submit detailed programme for completing the work.
2. Your attention is invited to this office/Chief Engineer's office letter no. _____, dated _____in reference to your representation, dated _____.
3. As you have failed to abide by the instructions issued to commence the work/to show adequate progress of work you are hereby given 7 days' notice in accordance with Clause 62 of Standard General Conditions of Contract to commence works / to make good the progress, failing which further action as provided in Clause 62 of the Standard General Conditions of Contract viz. to terminate your Contract and complete the balance work without your participation will be taken.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the Employer
Name of the Official:-
Stamp/Seal of the Employer

PROFORMA OF 48 HRS. NOTICE FOR WHOLE WORK
_____DFCCIL

(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

1. Seven days' notice under Clause 62 of Standard General Conditions of Contract was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the work.
2. You are hereby given 48 hours' notice in terms of Clause 62 of Standard General Conditions of Contract to commence works / to make good the progress of works, failing which and on expiry of this period your above contract will stand rescinded and the work under this contract will be carried out independently without your participation and your Security Deposit shall be forfeited and Performance Guarantee shall also be encashed and consequences which may please be noted.

Kindly acknowledge receipt.

Yours faithfully

and on behalf of the Employer
Name of the Official: -
Stamp/Seal of the Employer

PROFORMA OF 48 HRS. NOTICE FOR PART OF THE WORK.....

(DETAILS OF PART OF WORK TO BE MENTIONED)

DFCCIL
(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection
with _____

1. Seven days' notice under Clause 62 of Standard General Conditions of Contract was given to you under this office letter of even no., dated; but you have taken no action to commence the work/show adequate progress of the part of work..... (details of part to be mentioned).
2. You are hereby given 48 hours' notice in terms of Clause 62 of Standard General Conditions of Contract to commence works / to make good the progress of works, failing which and on expiry of this period your above part of work..... (Details of part to be mentioned) in contract will be rescinded and the work will be carried out independently without your participation.
3. Your full Performance Guarantee for the contract shall be forfeited and you shall not be issued any completion certificate for the contract. However, no additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract.
4. The contract value of part terminated contract shall stands reduced to _____

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the Employer
Name of the Official: -
Stamp/Seal of the Employer

PROFORMA OF TERMINATION NOTICE

DFCCIL
(Without Prejudice)

No. _____ Dated _____

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

Forty-eight hours (48 hrs.) notice was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the work.

Since the period of 48 hours' notice has already expired, the above contract stands rescinded in terms of Clause 62 of Standard General Conditions of Contract and the balance work under this contract will be carried out independently without your participation. Your participation as well as participation of every member/partner in any manner as an individual or a partnership firm/JV is hereby debarred from participation in the tender for executing the balance work and your Security Deposit shall be forfeited and Performance Guarantee shall also be encashed.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the Employer
Name of the Official: -
Stamp/Seal of the Employer

**PROFORMA OF TERMINATION NOTICE FOR PART OF THE WORK.....
(DETAILS OF PART OF WORK TO BE MENTIONED)**

DFCCIL
(Without Prejudice)

No. _____

Dated _____

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

1. Forty-eight hours (48 hrs.) notice was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the part of work..... (details of part to be mentioned).

2. Your above part of work in contract (details of part to be mentioned) stands rescinded in terms of Clause 62 of Standard General Conditions of Contract and the same will be carried out independently without your participation. Your participation as well as participation of every member/partner in any manner as an individual or a partnership firm/JV is hereby debarred from participation in the tender for executing the balance work

3. Your full Performance Guarantee for the contract shall be forfeited and you shall not be issued any completion certificate for the contract. However, no additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract.

4. The contract value of part terminated contract stands reduced to Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the Employer
Name of the Official: -
Stamp/Seal of the Employer

PRE-CONTRACT INTIGRITY PACT**GENERAL:**

This pre-bid contract Agreement (*hereinafter called the Integrity Pact*) is made on _____ day of the month of _____ 2021, between, on one hand, the DFCCIL acting through Shri _____ Designation of the officer, (*hereinafter called the CLIENT, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns*) of the First Part and M/s _____ represented by Shri _____ Chief Executive Officer (*herein after called the "BIDDER/SELLER" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns*) of the Second Part.

WHEREAS, the CLIENT proposes to procure (*Name of the Stores/Equipment/Item, Name of the Consultancy Service, Name of Works Contract, Name of Services*) and the [A] is willing to offer/has offered for stores or works.

WHEREAS, the [A] is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the CLIENT is a PSU performing its functions on behalf of the President of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: -

Enabling the CLIENT to obtain the desired said (*Name of the Stores/Equipment/Item, Name of the Consultancy Service, Name of Works Contract, Name of Services*) at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure [B] by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the CLIENT will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this integrity pact and agree as follows:

Commitments of the CLIENT:

- 1.0 The CLIENT undertakes that no official of the CLIENT, connected directly or indirectly with the [B], will demand, take a promise for or

accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the [A] either for themselves or for any person, organization or third party related to the [B], in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the [B].

1.1 The CLIENT will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular [A] in comparison to other BIDDERS.

1.2 All the officials of the CLIENT will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2.0 In case any such preceding misconduct on the part of such officials(s) in reported by the [A] to the CLIENT with full and verifiable facts and the same is prima facie found to be correct by the CLIENT, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the CLIENT and such a person shall be debarred from further dealings related to the [B] process. In such a case while an enquiry is being conducted by the CLIENT the proceedings under the [B] would not be stalled.

3.0 Commitments of BIDDERS:

The [A] commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the [B] contract or in furtherance to secure it and in particular committee itself to the following: -

3.1 The [A] will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the CLIENT, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the [B] in exchange for any advantage in the bidding, evaluation, contracting and implementation of the [B].

3.2 The [A] further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the CLIENT or otherwise in procuring the Contract or forbearing to do or having done any act in

relation to the obtaining or execution of the [B] or any other [B] with the Government for showing or forbearing to show favour or disfavour to any person in relation to the [B] or any other [B] with the Government.

- 3.3* [A] shall disclose the name and address of agents and representatives and Indian [A] shall disclose their foreign principals or associates.
- 3.4* [A] shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
- 3.5 The [A] further confirms and declares to the CLIENT that the [A] is the original manufacturer/integrator/authorized government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the CLIENT or any of its functionaries, whether officially or unofficially to the award of the [B] to the [A] nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation:
- 3.6 The [A] either while presenting the bid or during pre-contract negotiations or before signing the [B] shall disclose any payments he has made, is committed to or intends to make to officials of the CLIENT or their family members, agents, brokers or any other intermediaries in connection with the [B] and the details of services agreed upon for such payments.
- 3.7 The [A] will not collude with other parties interested in the [B] to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the [B].
- 3.8 The [A] will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The [A] shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the CLIENT as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The [A] also undertakes to exercise due and adequate care lest any such information is divulged.
- 3.10 The [A] commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The [A] shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

- 3.12 If the [A] or any employee of the [A] or any person acting on behalf of the [A], either directly or indirectly, is a relative of any of the officers of the CLIENT, or alternatively, if any relative of an officer of the CLIENT has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the [A] at the time of filling of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.

- 3.13 The [A] shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the CLIENT.

4.0 Previous Transaction:

- 4.1 The [A] declares that no previous transgression occurred in the last three years immediately before signing of this integrity pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER'S exclusion from the tender process.
- 4.2 The [A] agrees that if it makes incorrect statement on this subject, [A] can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5.0 Earnest Money (*Security Deposit*):

- 5.1 While submitting commercial bid, the [A] shall deposit an amount _____ (*to be specified in RFP*) as Earnest Money/Security Deposit, with the CLIENT through any of the following instruments:
- (i) Bank Draft or a Pay order in favour of _____
 - (ii) A confirmed guarantee by an Indian Nationalized Bank, promising payment of the guaranteed sum to the CLIENT on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the CLIENT shall be treated as conclusive proof or payment.
 - (iii) Any other mode or through any other instrument (*to be specified in the BID*).
- 5.2 The Earnest Money/Security Deposit shall be valid upto a period of five years or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the CLIENT, including warranty period, whichever is later.

- 5.3 In case of the successful [A] a clause would also be incorporated in the Article pertaining to Performance Guarantee in the [B] that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the CLIENT to forfeit the same without assigning any reason for imposing sanction for violation of this pact.
- 5.4 No interest shall be payable by the CLIENT to the [A] on Earnest Money/Security Deposit for the period of its currency.

6.0 Sanctions for violations:

- 6.1 Any breach of the aforesaid provisions by the [A] or any one employed by it or acting on its behalf (whether with or without the knowledge of the [A]) shall entitle the CLIENT to take all or any one of the following actions, wherever required: -
- (i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the [A]. However, the proceedings with the other BIDDER(s) would continue.
 - (ii) The Earnest Money Deposit (*in pre-contract stage*) and/or Security Deposit/performance Bond (*after the [B] is signed*) shall stand forfeited fully and the CLIENT shall not be required to assign any reason therefore.
 - (iii) To immediately cancel the [B], if already signed, without giving any compensation to the [A].
 - (iv) To recover all sums already paid by the CLIENT, and in case of an Indian [A] with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a [A] from the country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the [A] from the CLIENT in connection with any other [B], such outstanding payment could also be utilized to recover the aforesaid sum and interest.
 - (v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the [A], in order to recover the payments, already made by the CLIENT, along with interest.
 - (vi) To cancel all or any other Contracts with the [A]. The [A] shall be liable to pay compensation for any loss or damage to the CLIENT resulting from such cancellation/rescission and the CLIENT shall be entitled to deduct the amount so payable from the money(s) due to the [A].

- (vii) To debar the [A] from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the CLIENT.
- (viii) To recover all sums paid in violation of this Pact by [A] to any middleman or agent or broker with a view to securing [B] the contract.
- (ix) In cases where irrevocable Letters of Credit have been received in respect of any [B] signed by the CLIENT with the [A], the same shall not be opened.
- (x) Forfeiture of Performance Bond in case of a decision by the CLIENT to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

6.2 The CLIENT will entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this pact also on the Commission by the [A] or any one employed by it or acting on its behalf (whether with or without the knowledge of the [A], of an offence as defined in Chapter IX of the Indian Penal Code, 1860 or Prevention of Corruption Act, 1988 or any other stature enacted for prevention of corruption.

6.3 The decision of the CLIENT to the effect that a breach of the provisions of this Pact has been committed by the [A] shall be final and conclusive on the [A]. However, the [A] can approach the independent monitor(s) appointed for the purposes of this pact.

7.0 Fall Clause:

7.1 The [A] undertakes that it has not supplied / is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the [A] to any other Ministry/Department of the Government of India or a PSU at a lower price, then that vary price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the [A] to the CLIENT, if the [B] has already been concluded.

8.0 Independent Monitors:

8.1 The CLIENT has appointed independent Monitors (*hereinafter referred to as Monitors*) for this Pact in Consultant with the Central Vigilance Commission (Name and Addresses of the Monitors to be given).

- 8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this pact.
- 8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
- 8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.
- 8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the CLIENT.
- 8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all project documentation of the CLIENT including that provided by the BIDDER. The [A] will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the [A] with confidentiality.
- 8.7 The CLIENT will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.
- 8.8 The Monitor will submit a written report to the MD/DFCCIL within 8 to 10 weeks from the date of reference or intimation to him by the CLIENT/BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9.0 Facilitation of Investigation:

In case of any allegation of violation of any provisions of this Pact or payment of commission, the CLIENT or its agencies shall be entitled to examine all the documents including the Books of Accounts of the [A] and the [A] shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10.0 Law and Place of Jurisdiction:

This pact is subject to Indian Law. The Place of performance and jurisdiction is the seat of the CLIENT.

11.0 Other Legal Actions:

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12.0 Validity:

12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the [B] to the satisfaction of both the CLIENT and the [A] including warranty period, whichever is later. In case [A] is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the [B].

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

12.3 The parties hereby sign this Integrity Pact at _____ on _____.

CLIENT:

Name of the Officer

Designation

Deptt./Ministry/PSU

BIDDER:

CHIEF EXECUTIVE OFFICER

Witness:

1. _____

2. _____

Witness:

1. _____

2. _____

Note:

[A] To be replaced by BIDDER/Seller/Consultant/Consultancy firm/Service Provider as the case may be.

[B] To be replaced by Contract/Supply Contract/Consultancy Contract/Works Contract as the case may be.

FINAL SUPPLEMENTARY AGREEMENT

1. Articles of agreement made this day_____ in the year _____between DFCCIL, acting through the_____ DFCCIL Administration having his office at _____ herein after called the DFCCIL of the one part and _____of the second part.
2. Whereas the party hereto of the second part executed an agreement with the party hereto of the first part being agreement Number_____ dated_____ for the performance_____ herein after called the 'Principal Agreement'.
3. And whereas it was agreed by and between the parties hereto that the works would be completed by the party hereto of the second part on_____ date last extended and whereas the party hereto of the second part has executed the work to the entire satisfaction of the party hereto of the first part.
4. And whereas the party hereto of the first part already made payment to the party hereto of the second part diverse sums from time to time aggregating to ₹ _____ including the Final Bill bearing voucher No._____ dated _____ of value _____ duly adjusted as per price variation clause, if applicable (the receipt of which is hereby acknowledged by the party hereto of the second part in full and final settlement of all his /its claims under the principal agreement.

And whereas the party hereto of the second part have received sum of ₹ _____ through the Final Bill bearing voucher No _____ dated _____ duly adjusted as per price variation clause (PVC), if applicable (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto of the first part in full and final settlement of all his/its disputed claims under principal agreement.

Now, it is hereby agreed by and between the parties in the consideration of sums already paid by the party hereto of the first part to the party hereto of the second part against all outstanding dues and claims for all works done under the aforesaid principal agreement excluding the security deposit, the party hereto of the second part have no further dues of claims against the party hereto of the first part under the said Principal Agreement. It is further agreed by and between the parties that the party hereto of the second part has accepted the said sums mentioned above in full and final satisfaction of all its dues and claims under the said Principal Agreement.

(Applicable in case Final Supplementary Agreement is signed after release of Final Payment)

Or

And whereas the party hereto of the first part already made payment to the party hereto of the second part diverse sums from time to time aggregating to ₹ _____ through various On Account Bills (the receipt of which is hereby acknowledged by the party hereto of the second part).

And whereas the party hereto of the second part have received sum of ₹ _____

through various On Account Bills (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto of the first part and party hereto of the second part have accepted final measurements recorded on Page No..... to Page No.... of Measurement Book No.....and corresponding Final Bill duly adjusted as per price variation clause (PVC), if applicable, for full and final settlement of all his/its disputed claims under principal agreement.

Now, it is hereby agreed by and between the parties in the consideration of sums already paid through various On Account Bills and sums to be paid through Final Bill duly adjusted as per price variation clause (PVC), if applicable, based on accepted final measurements including the security deposit by the party hereto of the first part to the party hereto of the second part against all outstanding dues and claims for all works done under the aforesaid principal agreement, the party hereto of the second part have no further dues of claims against the party hereto of the first part under the said Principal Agreement.

(Applicable in case Final Supplementary Agreement is signed before release of Final Payment)

5. It is further agreed and understood by and between the parties that the arbitration clause contained in the said principal agreement shall cease to have any effect and/or shall be deemed to be non-existent for all purposes.

Signature of the Contractor/s
DFCCIL

for and on behalf of the

Witnesses

ADDRESS: _____

(Deleted)

Format for Power of Attorney for Authorized representative

Know all men by these presents, We, *[name of organization and address of the registered office]* do hereby constitute, nominate, appoint and authorize Mr/Ms *[name]*, son /daughter/ wife of *[name]*, and presently residing at *[address]*, who is presently employed with/retained by us and holding the position of *[designation]* as our true and lawful attorney (*herein after referred to as the "Authorized Representative"*), with power to sub-delegate to any person, to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our Bid for *[name of assignment]*, to be developed by Dedicated Freight Corridor Corporation of India Ltd. (*the "Authority"*) including but not limited to signing and submission of all applications/bids, proposals and other documents and writings, participating in pre-bid and other conferences and providing information/responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts and undertakings consequent to acceptance of our bid and generally dealing with the Authority in all matters in connection with or relating to or arising out of our Bid for the said Project and/or upon award thereof to us until the entering into of the Contract with the Authority.

AND, we do hereby agree to ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Authorized Representative pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Authorized Representative in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, *[name of organization]*,
THE ABOVE-NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF
ATTORNEY ON THIS *[date in words]* DAY OF *[month]* *[year in 'yyyy'*
format].

For *[name and registered address of organization]* *[Signature]*

[Name]

[Designation]

Witnesses:

1. *[Signature, name and address of witness]*

2. *[Signature, name and address of witness]*

Accepted

[Signature]

[Name]

[Designation]

[Address]

Notes:

1. The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants(s) and when it is so required, the same should be under seal affixed in accordance with the required procedure.
2. Wherever required, the Bidder should submit for verification the extract of the charter documents and other documents such as a resolution/power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.

NO DEVIATION CERTIFICATE

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of DFCCIL inviting the Tender)

Dear Sir,

Sub : No Deviation Certificate.

Ref: 1) NIT/Tender Specification No:,

2) All other pertinent issues till date

We hereby confirm that we have not changed/ modified/materially altered any of the tender documents as downloaded from the website/ issued by DFCCIL and in case of such observance at any stage, it shall be treated as null and void.

We also hereby confirm that we have neither set any Terms and Conditions and nor have we taken any deviation from the Tender conditions together with other references applicable for the above referred NIT/Tender Specification.

We further confirm our unqualified acceptance to all Terms and Conditions, unqualified compliance to Tender Conditions, Integrity Pact etc.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized
representative of the bidder)

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR

**FOR REMOVAL OF DEFECTS AFTER COMPLETION IN
RESPECT OF**

WATER-PROOFING WORKS/ANTI TERMITE TREATMENT

(To be executed on non-judicial stamp paper of the

appropriate value in accordance with relevant stamp Act.)

The agreement made this..... day of (Two Thousand _
only)

..... betweenS/o(hereinafter called the
GUARANTOR of the one part) and the DFCCIL (hereinafter called the Employer of the other
part)

WHEREAS THIS agreement is supplementary to a contract (hereinafter called the
Contract) dated and made between the GUARANTOR OF THE ONE PART AND
the DFCCIL of the other part whereby the contractor inter alia undertook to render the building
and structures in the said contract recited completely water and leak-proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the
said work will remain water and leak proof, for ten years from the date of completion of work.

NOW THE GUARANTOR hereby guarantees that work executed by him will render
the structures completely leak proof and the minimum life of such water proofing treatment shall
be ten years to be reckoned from the date of completion of work.

The decision of the Engineer/DFCCIL with regard to nature and cause of defect shall be
final and binding on Guarantor.

During this period of guarantee, the guarantor shall make good all defects and in case
of any defect being found render the building **water proof/anti termite** to the satisfaction of the
Engineer/DFCCIL calling upon him to rectify the defects failing which the work shall be got
done by the Department by some other contractor at the Guarantor's cost and risk. The decision
of the Engineer/DFCCIL as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing/anti termite treatment and
fails to control all kinds of leakage and seepage or commits breach there under, then the
guarantor will indemnify the principal and his successor against all loss, damage, cost expense
or otherwise which may be incurred by him by reason of any default on the part of the
GUARANTOR in performance and observance of this supplementary agreement. As to the

amount of loss and/or damage and / or cost incurred by the DFCCIL, the decision of the Engineer/DFCCIL will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator.....and by for and on behalf of the DFCCIL on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of: -

1.....

2.

SIGNED FOR AND BEHALF OF THE PRESIDENT OF INDIA BY in

the presence of: -

1.....

2.....

**Agreement towards Waiver under Section 12(5) and Section 31A (5)
of Arbitration and Conciliation (Amendment) Act**

I/we..... (Name of agency/Contractor) with reference to agreement no..... raise disputes as to the construction and operation of this contract, or the respective rights and liabilities, withholding of certificate and demand arbitration in respect of following claims:

Brief of claim:

- (i) Claim 1- Detailed at Annexure-
- (ii) Claim 2 –
- (iii) Claim 3 –

I/we..... (post of Engineer) with reference to agreement no..... hereby raise disputes as to the construction and operation of this contract, or the respective rights and liabilities, withholding of certificate and demand arbitration in respect of following claims:

I/we.....do/do not agree to waive off applicability of section 12(5) of Arbitration and Conciliation (Amendment) Act.

Signature of Claimant_____ Signature of Respondent

Agreement under Section 31(5)

I/we..... (Name of claimant) with reference to agreement no..... hereby waive off the applicability of sub section 31-A (2) to 31-A (4) of the Arbitration and Conciliation (Amendment) Act. We further agree that the cost of arbitration will be shared by the parties as per Clause 64(6) of GCC.

Signature of Claimant_____ Signature of Respondent_____

*Strike out whichever not applicable.

**Certification by Arbitrators appointed under Clause 63 & 64
of Indian Railways General Conditions of Contract**

1. Name:
2. Contact Details:
3. Prior experience (Including Experience with Arbitrations):
4. **I do not have more than ten on-going Arbitration cases with me.**
5. I hereby certify that I have retired from Railways/DFCCIL w.e.f. _____ and empanelled as Railway Arbitrator as per 'The Arbitration and Conciliation Act- 1996'.
6. I have no any past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind.

Or

I have past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind. The list of such interests is as under:

7. I have no any past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality in terms of The Arbitration and Conciliation Act-1996.

Or

I have past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality in terms of The Arbitration and Conciliation Act-1996. The details of such relationship or interests are as under:

8. There are no concurrent Circumstances which are likely to affect my ability to devote sufficient time to the arbitration and in particular to finish the entire arbitration within twelve months.

Or

There are Circumstances which are likely to affect my ability to devote sufficient time to the arbitration and in particular to finish the entire arbitration within twelve months. The list of such circumstances is as under:

PART-IV
DRAWINGS

(Drawings have been uploaded separately in the E-Tender portal)

*****END of Tender Document*****