

VOLUME I

REQUEST FOR PROPOSAL (RFP)

Name of Work: Electrical Works for Multistoried Group Housing Project, "KASA ISLES", for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25) of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP)

Jaypee Infratech Limited
J Block, Sector 128, Noida - 201304
Uttar Pradesh, India



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SECTION -I

NOTICE INVITING TENDER

Tender Ref No. JIL/WT/6A

Date: 27/07/2024

By Jaypee Infratech Limited

- Jaypee Infratech Limited (hereinafter "JIL") has undergone a corporate insolvency resolution process, and the Hon'ble NCLT, Delhi *vide* its order dated March 7, 2023, approved the Resolution Plan. Pursuant thereto an Implementation and Monitoring Committee (hereinafter, "IMC") was constituted (now dissolved) and decided to float the tenders for stalled projects, as per the directions by the Hon'ble National Company Law Tribunal *vide* its order dated 07.03.2023 and in terms of the approved Resolution Plan. After passing the aforesaid plan approval order dated 07.03.2023, various appeals have been filed against the said plan approval order before the National Company Law Appellate Tribunal and all such appeals have been now disposed off / dismissed. Pursuant to the judgment dated 24.05.2024, passed by National Company Law Appellate Tribunal, the order dated 07.03.2023 has been confirmed and ratified by the National Company Law Appellate Tribunal with a observation that there is no impediment in implementing the Resolution Plan
- Accordingly, JIL (under its new management / board) is hereby floating and inviting sealed bids for tenders through M/s Currie & Brown (India) Pvt. Ltd. (who has been appointed as Procurement assistance consultant) from contractors of repute, who are well established, having adequate qualifications, and sufficient experience in carrying out similar works of comparable magnitude as specified in the Request for Proposal (hereinafter "RFP" or the "Bidding Documents") in prescribed tender form under a two bid system (a) Part - I, Technical Bid with Commercial Terms without Price-Bid (hereinafter "Technical Bid") and (b) Part - II, Price Bid (hereinafter "Price Bid") as per the following details:

Fact sheet & Bidding Schedule:

i)	Name of Project and works	:	Electrical Works for Multistoried Group Housing Project, "KASA ISLES", for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25) Of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP)
ii)	Cost of Bidding Documents	:	The Bidding Documents as uploaded can be viewed and downloaded free of cost by anyone including intending Bidders at JIL's website: (http://jaypeeinfratech.com/tender.html)

iii)	Completion Period	:	12 Months including mobilization period from the date of issue of Letter of Intent.
iv)	Earnest Money Deposit	:	Rs. 6,50,000/- (<i>Indian Rupees Six lakh Fifty thousand only</i>) (in the form of Demand Draft / Bank Guarantee as per the format given in Annexure 2 of ITB) in favour of "Jaypee Infratech Limited". Bank Details of JAYPEE INFRATECH Ltd. for preparation of Bank Guarantee: Name of Beneficiary: Jaypee Infratech Ltd. Bank: IDBI Bank, Trade Finance Department, 8 th Floor, Plate B, Block 2, NBCC Office Complex, Delhi, Delhi State, Pin-110023 Current A/C No.: 011103000012166 IFSC: IBKL0000127
v)	EMD validity	:	3 (six) + 1 (one) month from bid submission date
vi)	Address for submission of Technical bid documents	:	Technical bids shall be submitted in a sealed envelope at Currie & Brown (India) Pvt. Ltd., Contracts Division, at office of Jaypee Infratech Limited, J Block, Sector-128, Noida, 201304, UP. The bids shall be submitted along with the mandatory documents including a) Demand Draft/Pay Order or Banker's Cheque / Bank Guarantee of any Nationalized or all Commercial Scheduled Bank against EMD & b) All other documents shall be as per Notice Inviting tender.
vii)	Address for submission of Price bid	:	Price bid shall be submitted separately in a sealed envelope at Currie & Brown (India) Pvt. Ltd., Contracts Division, at office of Jaypee Infratech Limited, J Block, Sector-128, Noida, 201304, UP
viii)	Date and time of Pre-bid meeting.	:	31.07.2024 at 3.00 PM

ix)	Last date and time for submission of bid documents	:	On or before 14.08.2024 up to 3.00 PM.
x)	Date and time of opening of technical bid	:	16.08.2024 at 11.30 AM.
xi)	Bid validity	:	3 (three) months from bid submission date
xii)	Date and time of opening of Price bid	:	Shall be intimated later after Evaluation of Technical bids.
xiii)	Contact Person	:	Mr. Shailendra Gupta GM-Contracts - JIL Mob: 9958991538. Mr. Vishvendar Singh (9717037171) Contact no: 120-4609484; Ext. 3484;
xiv)	NOTE	:	While submitting bids, bidders must mention subject (technical / price), name of the bidder, name and ref no of tender being submitted.

The Technical Bid and Price Bid shall be collectively referred to as a “**Bid**”.

3. Bidding Documents:

JIL has adopted a two-step process (hereinafter the "**Bidding Process**"). The following documents will form part of the Bidding Documents, comprising the RFP and the Contract Documents:

Volume I - RFP Documents

Section I: Notice Inviting Tender (hereinafter “NIT”)

Section II: Instructions to Bidders with Schedules (hereinafter “ITB”)

Section III: Format of Letter of Intent, Indemnity Bond

Volume II - Contract

Section I: Format of Contract Agreement

Section II; General Conditions of Contract (hereinafter the “GCC”) along with all Schedules and formats of the Performance Bank Guarantee etc.

Section III: Special Conditions of Contract (hereinafter the “SCC”)

Section IV: Technical Specifications

Volume-III

Bill of Quantities, hereinafter the “BOQ” and List of Approved Makes (for price bid)

Bids are required to be submitted in two parts. 1st part shall be “**Technical Bid**” which will consist of Vol-I & Vol-II; and 2nd part shall be “**Price Bid**” which will consist of Vol-III. Price bids will be opened only for technically pre-qualified bidders.

The contents of these RFP / Bidding Documents are of CONFIDENTIAL nature and contain PRIVILEGED information. The Bidders must undertake to return all the Bidding Documents in their entirety whilst submitting the Bid; or in the event they decide not to quote for the Project. The Bidders must also undertake that they will not distribute, disclose or circulate the information contained in these documents to anyone unless required for the specific purpose of obtaining offers, in which case the Bidder shall ensure that identical conditions regarding confidentiality are complied with by each of their sub-contractors.

4. The **KASA** Project (the “**Project**”), a part of Jaypee Wish Town, for which this RFP is being issued and was launched by Jaypee Infratech Limited. However, due to various reasons the construction of the project was stalled and in 2017 the corporate insolvency resolution process (“**CIRP**”) of JIL was initiated. Pursuant to the order dated 07.03.2023 by the NCLT, a Resolution Plan submitted by a consortium of Suraksha Realty Limited and Lakshdeep Investments and Finance Private Limited (together, “**Suraksha**”) for JIL was approved and the IMC was constituted (now dissolved), *to inter alia*, manage the affairs of the company and overseeing the implementation of the Resolution Plan. That it is pertinent to mentioned, after passing of the plan approval order dated 07.03.2023, various appeals have been filed against the said plan approval order before the National Company Law Appellate Tribunal and all such appeals have been now disposed off / dismissed. Pursuant to the judgment dated 24.05.2024, passed by National Company Law Appellate Tribunal, the order dated 07.03.2023 has been confirmed and ratified by the National Company Law Appellate Tribunal with an observation that there is no impediment in implementing the Resolution Plan. Pursuant to this, JIL decided to float tenders for the stalled projects including the project in question i.e. **KASA** *inter alia*, in the interest of home buyers and with an objective to complete the construction of the said stalled Project.
5. Nothing contrary or in violation of the terms of the Resolution Plan shall be contained in the NIT and the scope of work in the NIT. Any terms found to be contrary to the provisions of the Resolution Plan will be considered invalid; however, their validity shall not affect the validity of other terms. JIL in its sole discretion will decide the extent of impact on the Tender from any such contrary terms.
6. Prior to submitting a Bid, each Bidder is required to visit and inspect the Site to fully acquaint itself with *inter alia* the condition of the Site, access to the Site, assess the scope of works and working conditions on the Site, including space for stacking of materials, conditions affecting accommodation and movement of labour and other information required for satisfactory execution of the Contract. No claims whatsoever on account of site conditions shall be entertained by JIL and/ and/or its board members or its Authorized Representative/ employees, under any circumstances. None of JIL and/ and/or its board members or its Authorized Representative/ employees shall be liable to reimburse any costs, claims or expenses incurred by any Bidder for the Site visit.
7. **Eligible Bidder:**

- 7.1. The invitation to Bids is open to all Bidders eligible to participate as per qualifying criteria.
- 7.2. All Bidders shall provide in their bid, Forms of Bid and Qualification information.
- 7.3. The Bidder should have not abandoned or left work incomplete in the last 3 years. During course of tendering or at any stage before or after awarding of the work, if it is found that the Bidder have abandoned or left work incomplete in last 3 Years, the bidder shall deem to be automatically disqualified from Bidding Process and any communication/ documents executed between the parties shall become ineffective or invalid/void. In case the Bidder is found to have abandoned or left work incomplete in the last 3 years the EMD shall be forfeited.

8. **Eligibility Criteria:**

The interested Bidders should meet the following qualifying criteria to participate in this RFP:

A. **Corporate Requirements**

- (i) Legal Entity Registered in India with competent authority under the Companies Act 1956 / 2013 or /LLP registered under LLP Act 2008.
OR
Individual / Proprietorship firm / Partnership firm / Associates of Persons (AOP) / LLP, who met the work experience / Financial Criteria as below.
- (ii) The entity should have been in existence for no less than 3 years from the date of the Bid.

B. **Work Experience:**

1. Experience of having successfully completed similar works during the last 7 years ending previous day of last date of submission of tenders as under:
 - a) One completed similar work of value equal or more than **Rs.4,90,00,000/-**
Or
 - b) Two completed similar works of value equal or more than **Rs. 3,67,00,000/-**
Or
 - c) Three completed similar works of value equal or more than **Rs.2,45,00,000/-**

AND

2. One of the buildings proposed by bidder for qualification should at least have completed a similar work in buildings having equal to or more than 50% of the number of stories or 12 stories, whichever is lower of the tallest building as mentioned in the name of work (refer Fact sheet, clause no 2(i) of NIT).

Definition of Similar work: "Similar works" shall mean "Commercial/ Institutional/ Multi-Storeyed residential buildings".

Note:

- a) The values of the completed work shall be exclusive of Service Tax/GST. The Bidder shall produce documentary evidence against the Taxes & Duties applicable against the concerned job(s). In case the value of job submitted by the bidder does not have clarity regarding inclusion/ exclusion of Service tax/GST, the amount appearing in the Completion Certificate, the bidder shall provide statutory auditors certificates clearly stating the service tax/GST in the computation to arrive at the completed work value in conjunction with the completion certificate. In case where such certification is not provided or the completion certificate does not have clarity, the value of completed work shall be considered inclusive of applicable Service Tax/ GST @18% tax and shall be evaluated accordingly.
- b) Value of Executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of submission of bid.
- c) Experience in a similar nature of work should be supported by a copy of a work order and certificates issued by the client's organization for successful completion of work. If the work experience is in the Private sector the completion certificate shall be supported with copies of Letter of Award and copies of Corresponding TDS Certificates.
- d) Joint venture / consortia of firms / companies shall not be allowed, and the bidders should meet the above criteria themselves.
- e) Participation of Holding company & Subsidiary company

"In case of a bidder is a 'Company' incorporated in India who is a wholly owned 'Subsidiary Company' of Holding Company', either the Turnover and Experience of the Holding Company or the Turnover and Experience of such bidder shall be considered for the purpose of Pre-Qualification criteria, for such bidder subject to the following:

- a) The arrangement permitting the Bidder to quote and rely upon the Turnover and Experience of the Holding Company in the Bidder's quotation through a binding agreement needs to be recorded and submitted along with the bid.
- b) The Bidder as well as 'Holding Company' shall submit an irrevocable undertaking stating therein that both of them i.e., the Bidder as well as its 'Holding Company' shall be jointly and severally liable for due performance of the Contract and the acts done / not done by them (either individually or collectively) in pursuance thereof.

The terms 'company', 'holding company' and 'subsidiary company' shall have the same meaning as prescribe in the Indian Company's act, 1956.

C. **Financial Strength:**

- i) The Average annual financial turnover during the 3 best out of last 5 years ending 31st March of the previous financial year shall be at least **Rs. 2,14,00,000/-** excluding GST. The requisite Turn Over shall be duly certified by a Chartered Accountant with his seal, signatures, and registration number.

In the case of Companies/Firms less than 5 years old, the Average annual financial turnover shall be worked out for the available period only.

- ii) The Net Worth of the company /firm on the last day of the preceding Financial Year should be positive.
- iii) The Bidder should at least have earned a profit in minimum one year in the available last three consecutive balance sheets.

The bidders are required to submit the page of summarized Balance Sheet (Audited) and page of summarized Profit & Loss Account (Audited) for last three years.

- D. The bidder shall submit the Affidavit that they have never abandoned or left work incomplete in the last 3 years. During tendering if it is found that the undertaking in the affidavit is untrue, the bidder will automatically be disqualified from the Bidding Process. Further the Bidder shall submit the separate affidavit/undertaking and declaration that no pending criminal investigation whether at ED/SFIO/EOW/CBI /or any other authority including Courts are currently pending or sub-judice in relation to its past awarded works by any company/entity/corporation.
- E. The Bidder Company further declares that it is a company / entity having sound financial health and no proceedings are pending / continuing or commenced under the aegis of Insolvency and Bankruptcy Code, 2016 and none of its bank accounts were declared NPA by any financial institution. Further, no winding up notice has been served upon it by any creditors and no resolution of voluntarily winding up has ever been passed by its Board.
- F. Should have valid labor license and be registered with ESIC and EPF and all other statutory required approvals/permits/ licenses/ permissions as applicable in law during the relevant time/or during the entirety of the contract term.

Copies of License and registrations required to be submitted.

The Eligibility Criteria as narrated above is not exhaustive, JIL/ and its members shall have the right to modify and amend the said Eligibility Criteria in the best interests of the project and home-buyers. Furthermore, the Eligibility Criteria have to be maintained by the bidder during the entire term of the contract failing to do so, JIL//its Board/Management shall have the sole right and discretion to terminate

the contract without giving any reasons whatsoever and no obligations shall survive on JIL//its Board/Management/Its Members/Employees.

9. Genuineness of Credentials:

The Bidder must submit an affidavit on a non-judicial stamp paper valuing the required amount as appropriate, duly sworn before a Magistrate/Notary Public to the effect that all the supporting documents were genuine and correct. If at any point it is found that the documents were not genuine in that event the Bid will be rejected or the Contract will be terminated, and in furtherance of which the Earnest Money Deposited by the Bidder will be forfeited and the Bidder will be debarred from participating in any further tender of JIL.

10. Rejection of Bids:

10.1. Unsealed tenders/ technical bid and Price bid will be summarily rejected. Incomplete Bids, Bids not submitted in a proper manner, Bids received without the Earnest Money Deposit and/ or Bids where the documents submitted contain deviations from the criteria set out in this ITB, will not be considered and will be summarily rejected by JIL.

10.2. The entire bidding process documents will be processed/verified through the consultants appointed by JIL. The Consultants shall conduct scrutiny of all documents submitted by the bidders and give their further recommendation for rejection or selection of the bids for the next step. On receiving the said recommendations, JIL shall take necessary actions.

11. Canvassing and cartelization in connection with this RFP is strictly prohibited and any Bid submitted by a Bidder who resorts to canvassing and cartelization, will be liable to immediate rejection.

12. Each Bidder shall submit “**Earnest Money Deposit**” (“**EMD**”) of INR 6,50,000/- (Rupees Six Lakh Fifty thousand only) in the form of a Demand Draft / Bank Guarantee along with the Bid in favour of Jaypee Infratech Limited, payable at Noida, which will be adjusted towards retention money for successful bidder; (refer clause no C.4 of ITB for details).

13. Acceptance of a Bid will rest solely with JIL, who does not bind itself to accept the lowest Bids or any other Bid and reserves the right and authority to reject any or all the Bids received without assigning any reason thereof. In the event JIL is not satisfied with any of the Bids, or cancels the RFP for any reason, the Earnest Money Deposit of each Bidder shall be returned to such Bidder within one week from the cancellation. No Bidder shall have any cause of action or claim against JIL and/or its Board and/or its members or its Authorized Representative/ employees for rejection of a Bid or cancellation of the tender process. It is clarified that Earnest Money will not bear any interest and shall be returned to all unsuccessful Bidders unless otherwise stipulated herein or in the ITB. The Earnest Money will stand forfeited in the event the successful Bidder fails to execute the LOI and / or the Contract when called upon to do so.

JIL and/or its Board and its members or its Authorised Representative/ employees reserve the right to accept or reject any or all Bids which they may receive, without assigning any reasons.

14. JIL reserves the right to award the work to a single party or to split the work amongst two or more parties as deemed necessary without assigning any reason thereof. Such a step shall not constitute a breach of contract and the contractor is bound to accept the portion of work as offered by JIL after split, at the quoted/ negotiated rates. No claim of the contractor whatsoever shall be entertained by JIL on this account.
15. If it is found that the Bid is not submitted in proper manner or contains too many corrections or absurd rates of amounts, JIL may, at its discretion, take suitable action including but limited to rejection of its Bid of the said Bidder.
16. **Validity of Bids:**
 - 16.1. Bids shall remain valid for a period of 3 (three) months from the last date of receipt of bids.
 - 16.2. During the above-mentioned period no plea by the bidder for any sort of modification of the bid shall be permitted, for any reason, including for reasons based upon or arising out of any alleged misunderstanding of misconceptions or mistake.
17. While JIL has taken due care in the preparation of the information contained herein, neither JIL, the IMC or its Board members, or any of their affiliates or agencies nor any of their respective officers, employees, agents or advisors give any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained herein or any information which may be provided in connection with it.
18. None of JIL and/or its Board Members and/or its members or its Authorized Representative/ employees will be responsible or liable if sufficient and adequate due diligence is not performed by the Bidder.
19. JIL reserves the right not to proceed with all or part of the Project and the works, or to make any changes to the works, to alter the timelines set out herein or make any changes to the process or procedure set out herein. It also reserves the right to decline to discuss the Project with any bidder. No claims made by any bidder against any or all of JIL and/or its Board and/or its members or its Authorized Representative/ employees pursuant to actions taken by JIL, shall be entertained.
20. This Notice Inviting Tender shall form part of the RFP.
21. The successful Bidder will be required to provide satisfactory evidence of a valid and concurrent license issued in its favor under the Contract Labor (Regulation and Abolition) Act, 1970, prior to commencement of the works. Failure to do so may result in the rejection of the bid and forfeiture of the bid security.
22. On acceptance of the Letter of Intent, the name of the accredited representatives of the successful Bidder who would be responsible for taking instructions from the

Engineer-in-charge shall be communicated to the Engineer-in-charge within 7 days after the date of written order to commence work.

23. Bidders shall have no recourse to either JIL and/or its Board and/or its members or its Authorized Representative/ employees under this NIT, these Bidding Documents or the Bid Process. JIL and/or its Board and/or its members or its Authorized Representative/ employees shall in no event be responsible or liable for any costs, damages or claims by any Bidder regardless of the conduct or outcome of the Bidding Process.
24. Execution of work by contract labor is prohibited vide Notification issued by Govt of India under Section 10(1) of the Contract Labor (Regulation and Abolition) Act,1970 bearing S.O. No. 2063 dated 21.06.1988. The contractor shall execute the work by using machines as specified with his regular employees/workmen only.
25. List of Documents to be submitted in hard copy as part of the technical bid submission:
 - (a) Power of Attorney of the person authorized for signing/submitting the tender. (Annexure-1, ITB)
 - (b) Demand Draft / Bank Guarantee of any Nationalized or all Commercial Scheduled Bank against Earnest Money Deposit. (Annexure 2, ITB)
 - (c) Bid Proposal (Annexure-3, ITB along with its Appendices A, B, C, D, E, F, G and H)
 - (d) Copies of EPF registration/ PAN Card.
 - (e) All pages of the entire Tender Documents including Corrigendum (if any) duly signed by the authorized person.
 - (f) All pages of Pre-bid clarifications, if any.

NOTE:

1. All the documents should be in readable and legible form failing which the Bids are liable for rejection.
2. The document submitted in hard copy should be indexed and duly page numbered.

BIDDER'S SIGNATURE

Disclaimer -

The whole process of Tendering does not constitute and will not be deemed to constitute an offer from or on behalf of; or any commitment on the part of JIL and/or its Board and/or its members or its Authorised Representative/ employees.

JIL reserves the right to withdraw/suspend/ modify the Bidding Process or any part thereof, to accept or reject any/all offer(s) at any stage of the process or to vary any terms without assigning any reasons and without any liability to itself, and/or its Board and/or its members or its Authorised Representative/ employees. JIL also reserve to itself the rights to re-tendering after issuing this NIT/ITB, or any stage during the entire tender process before executing the formal Contract documents or award of work with any bidder.

SECTION - II

INSTRUCTIONS TO BIDDERS

A. Introduction

1. The Company

- 1.1. Jaypee Infratech Limited (hereinafter “JIL”) was incorporated under the Companies Act, 1956 having CIN L45203UP2007PLC033119 and having its registered office at Sector-128, Noida, Uttar Pradesh-201304.
- 1.2. JIL has undertaken and is developing Jaypee Wish Town. comprising of many Projects and Towers at Noida.

2. Project Background

The **KASA** Project (the “**Project**”), a part of Jaypee Wish Town, for which this RFP is being issued and was launched by Jaypee Infratech Limited. However due to various reasons the construction of the project was stalled and in 2017 the corporate insolvency resolution process (“**CIRP**”) of JIL was initiated. Pursuant to the order dated 07.03.2023 by the NCLT, a Resolution Plan submitted by a consortium of Suraksha Realty Limited and Lakshdeep Investments and Finance Private Limited (together, “**Suraksha**”) for JIL was approved and the IMC (now dissolved) was constituted, *to inter alia*, manage the affairs of the company and overseeing the implementation of the Resolution Plan. After passing the aforesaid plan approval order dated 07.03.2023, various appeals have been filed against the said plan approval order before the National Company Law Appellate Tribunal and all such appeals have been now disposed off / dismissed. Pursuant to the judgment dated 24.05.2024, passed by National Company Law Appellate Tribunal, the order dated 07.03.2023 has been confirmed and ratified by the National Company Law Appellate Tribunal with a observation that there is no impediment in implementing the Resolution Plan. Pursuant to the judgment dated 24.05.2024, JIL now decided to float tenders for the stalled projects including the project in question i.e. **KASA** *inter alia*, in the interest of home buyers and with an objective to complete the construction of the said stalled Project.

3. General

- 3.1 These Instructions to Bidders (“**ITB**”) are being published by JIL, for the “Electrical Works for Multistoried Group Housing Project, “KASA ISLES”, for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25) of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP).”
- 3.2 The ITB provides the information necessary for Bidders to prepare responsive bids, in accordance with the requirements of JIL. Information on submission of Bids, on bid opening, evaluation and on award of contract are set out in this ITB.
- 3.3 Any terms found to be contrary to the provisions of the Resolution Plan will be considered invalid; however, their validity shall not affect the validity of other

terms. JIL in its sole discretion will decide the extent of impact on the Tender from any such contrary terms.

3.4 Factsheet & Bidding Schedule shall be as per Clause no- 2 of NIT.

3.5 Eligible Bidders

3.5.1 Bids are only to be submitted by a sole Bidder as per the eligibility norms outlined in the Eligibility Criteria set out at Clause 8 of the NIT.

3.6 Cost of Bidding

3.6.1 The Bidder shall be responsible for all costs incurred in connection with participation in the Bidding Process, including, but not limited to, costs incurred in the conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation and submission of a bid, in providing any additional information required by JIL to facilitate the evaluation process, in post bid discussions, presentations, and all such activities related to the bid process.

3.6.2 JIL and/or its Board and/or its members or its Authorized Representative/ employees shall in no event be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding Process.

B. The Bidding Documents

1. Content of Bidding Documents

1.1. The Bidding Documents shall be as per Clause no 3 of NIT:

1.2. Bidders are expected to examine all instructions, forms, terms, specifications and other information in the Bidding Documents carefully before submitting their proposals in response to the NIT. Submission of a bid in response to this notice shall be deemed to have been made after careful study and examination of this document with a full understanding of its terms, conditions, and implications.

1.3. Failure to furnish all information required by the RFP or submission of a Bid not substantially responsive to the RFP in every respect will be at the Bidder's risk and may result in rejection of its Bid.

1.4. The scope of work for this Project will include, but not be limited to the following works, as more fully set out in the BOQ:

- a. Civil Structural & Finishing works for Multi-storied Residential Building consisting of, but not limited to, items for Cement Concrete (CC), Reinforced Cement Concrete (RCC), Brick Works, Wood Works, Steel Works, Plastering, Painting, Flooring works etc

1.5. The scope of work as described above is only indicative but not exhaustive. In addition to the above the Contractor shall be responsible for executing all the items required to complete the Project in all respects.

2. Clarification of Bidding Documents

- 2.1. The Bidder shall be deemed to have carefully examined the RFP. If a bidder has any doubts/clarifications as to the meaning of any portion of the Conditions or the specifications, it shall, no later than 7 (seven) days prior to the deadline for submission of bids prescribed, set forth the particulars thereof and submit to JIL in writing in the form of pre-bid queries so that the doubts may be removed, or clarifications are provided. All pre-bid queries shall be addressed to Mr. Shailendra Gupta GM- Contracts at tendering@jilindia.in. and same shall be responded 3 days prior to submission date of bid.
- 2.2. Further, the mere request for clarification from Bidders shall not be a ground for seeking extension in the deadline for submission of Bids.
- 2.3. Any request(s) for clarifications after the indicated date and time for pre-bid clarifications, shall not be entertained by JIL. Further, JIL shall reserve the right to not issue clarifications.
- 2.4. The queries of only those Bidders would be considered who send their queries to the e- mail address provided in Clause B.2.1 hereinabove, and in accordance with the provisions of this Clause B.2.
- 2.5. The pre-bid queries must be submitted in excel sheet format, along with the name and details of the organization submitting the queries as below.

Sr. No	Name of the Bidder	Ref. clause No.	Document Reference (s) Section	PageNo. of RFP Doc.	Content of RFP requiring clarification	Queries/ Clarification Sought

Note: JIL will not be responsible for ensuring that the Bidders' queries are received by it.

3. Responses to Pre-Bid Queries and Issue of Corrigendum

- 3.1. JIL will endeavor to provide a timely response to any request for clarification or modification of the Bidding Documents that it receives no later than 7 (seven) days prior to the original deadline for submission of bids prescribed. JIL shall not be obliged to respond to any request for clarification received later than the above period. The clarification, along with JIL's response (including an explanation of the query but not identification of its source) will be communicated to all the Bidders by uploading corrigendum to JIL website <http://jaypeeinftratech.com/tender.html>.
- 3.2. The Bidder shall have to conduct/exercise its own due diligence before participating in the bid process. JIL makes no representation or warranty as to the completeness or accuracy of any response made in good faith, nor does JIL undertake to answer all the queries that have been posed by the Bidders.

- 3.3. At any time prior to the last date for receipt of Bids, JIL may, for any reason, whether at its initiative or in response to a clarification requested by a prospective Bidder, modify the RFP by a corrigendum and the same shall be binding on all the bidders.
- 3.4. Any such corrigendum shall be deemed to be incorporated into these Bidding Documents.
- 3.5. To provide Bidders reasonable time for taking the corrigendum into account, JIL may, at its sole discretion, have the right to extend the last date for the receipt of Bids.

4. Pre-Bid Meeting

- 4.1. The Bidder's authorized representative(s) is/are invited to attend a pre-bid meeting, which, if convened, will take place at the venue, time and date stipulated in the Factsheet. The purpose of the meeting will be to clarify any issues regarding the Bidding Documents in general and the Technical Specifications in particular.
- 4.2. The Bidder shall submit any question in writing, to reach JIL not later than one week before the meeting. It may not be practicable at the meeting to answer questions received late, but questions and responses will be transmitted as indicated hereafter. Minutes of the meeting, including the text of the questions raised (without identifying name of the bidders) and the responses given, together with any responses prepared after the meeting, will be transmitted without delay to all the Bidders.
- 4.3. Any modification of the Bidding Documents listed in Clause no 3 of NIT, which may become necessary as a result of the pre-bid meeting shall be made by JIL exclusively through the issue of an Addendum pursuant to Clause 3 of this ITB and not through the minutes of the pre-bid meeting. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder. Such addendum issued by JIL shall be binding on all the bidders.

5. Amendment of Bidding Documents

- 5.1. At any time prior to the deadline for submission of Bids, JIL may, for any reason, modify the Bidding Documents by intimation to the Bidders and such amendment shall be binding on all the Bidders.
- 5.2. In order to afford reasonable time to the Bidders to take the amendment into account in preparing their Bid, JIL may at its discretion, but without being bound to, extend the deadline for the submission of Bids, and intimate the Bidders accordingly.
- 5.3. JIL further reserves the right to change the scope and other terms and conditions before the opening of Technical Bids. In such event, JIL shall release a corrigendum/clarification and ask the Bidders to resubmit their Bids.

C. Preparation of Bids

1. Language of Bid

- 1.1. The Bid should be in the English language only. If any supporting documents submitted are in any language other than English, such document shall be translated into English and duly attested by the bidder. For purposes of interpretation of documents, the English translation shall govern.

2. Bid Prices

- 2.1. Unless otherwise specified in the Technical Specifications, bidders shall quote for the entire work / BOQ etc., such that the total bid price covers all the Bidder's obligations mentioned in or to be reasonably inferred from the Bidding Documents in respect of the Works. This includes all requirements under the Bidder's responsibilities for the acquisition of all permits, approvals and licenses, etc. and such other items and services as may be specified in the Bidding Documents, all in accordance with the requirements of the Contract. Items against which no price is entered by the Bidder will not be paid for by JIL when executed and shall be deemed to be covered by the prices for other items.
- 2.2. Bidders shall give a breakdown of the prices in the manner and detail called for in the Price Schedules.
- 2.3. It shall be the responsibility of the Bidders to pay all statutory taxes, duties and levies to the concerned authorities, which would otherwise have been lawfully payable. The Bidders shall submit an indemnity bond to keep JIL harmless from any such liabilities in this regard.
- 2.4. The Bidder shall include in the Price Bid, all taxes (save and except for GST), levies, octroi, Labour Cess, surcharge/other cess etc. applicable to itself, and JIL will not bear any liability whatsoever on this account. JIL shall, however, deduct such tax at source as per Applicable Law and issue requisite certificates to the Bidder.
- 2.5. The Bidder shall include insurance charges in its Price Bid as per the insurance requirement mentioned in the GCC and insurance requirements contained in the Bidding Documents.

3. Bid Currency

- 3.1. Prices shall be quoted in Indian Rupees Only.

4. Earnest Money Deposit (EMD)

- 4.1. Each Bidder shall deposit earnest money ("EMD") of INR 6,50,000/- (Rupees Six Lakh Fifty Thousand only) in the form of a Demand Draft/Bank Guarantee submitted in the prescribed format along with the Bid in favor of Jaypee Infratech Limited, payable at Noida.

- 4.2. EMD, which is required to protect JIL against the risk of Bidders' conduct which would warrant the EMD forfeiture of requisite amount, shall be paid in accordance with the Factsheet. The EMD shall be paid by way of a Demand Draft or a Bank Guarantee from a nationalized / scheduled bank, submitted along with the Bid.
- 4.3. There shall be no exemption granted to any Bidder for submitting the EMD. Bids that are not accompanied by an EMD or where the EMD has any error (whether relating to the amount, validity period or otherwise), such EMD shall be summarily rejected.
- 4.4. The EMD of all unsuccessful bidders will be refunded by JIL after completion of the Bidding Process and award of the contract to the successful bidder.
- 4.5. The EMD of the successful bidder will be adjusted against the retention money of the successful bidder. The EMD amount is interest-free and shall be refundable without any accrued interest payable on it by JIL.
- 4.6. In the event that Jaypee Infratech Limited is not satisfied with any of the bids, or cancels the Bidding Process for any reason, whatsoever, the Earnest Money Deposit of all bidders shall be returned to such bidder within a week from the cancellation.
- 4.7. The EMD may be forfeited at the option of JIL, if:
 - 4.7.1. a Bidder withdraws its bid during the period of bid validity and extended bid validity period; or
 - 4.7.2. a successful bidder fails to sign the subsequent contract in accordance with this RFP within the stipulated time mentioned in the Letter of Intent ("LoI") issued; or
 - 4.7.3. a Bidder is found to have indulged in any suppression of facts, furnishing of a fraudulent statement, misconduct, or other dishonest or other ethically improper activity, to this RFP and the Bidding Process; or
 - 4.7.4. a Bid contains conditional offers or partial offers.
- 4.8. No interest shall be payable by JIL on the above EMD.

5. Single Bid

- 5.1. If a Bidder, submits or participates in more than one Bid for this said Tender, such Bidder shall be disqualified.

6. Code of Integrity

- 6.1. No official of JIL or a bidder shall act in contravention of the code of integrity. Each relevant person is prohibited from:
 - 6.1.1. Making an offer, solicitation or acceptance of a bribe, reward or gift or any material benefit, either directly or indirectly, in exchange for an unfair advantage in the Bidding Process or to otherwise influence the Bidding Process.
 - 6.1.2. Any omission, or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained, or an obligation avoided.

- 6.1.3. Any collusion bid rigging or anticompetitive behavior that may impair the transparency, fairness and progress of the Bidding Process.
 - 6.1.4. Improper use of information provided by the procuring entity to the bidder with an intent to gain an unfair advantage in the Bidding Process or for personal gain.
 - 6.1.5. Any financial or business transactions between the bidder and any official of JIL related to the Bidding Documents or execution process of the contract.
 - 6.1.6. Which can affect the decision of JIL directly or indirectly.
 - 6.1.7. Any coercion or any threat to impair or harm, directly or indirectly, any party or its property to influence the Bidding Process.
 - 6.1.8. Obstruction of any investigation or auditing of the Bidding Process.
 - 6.1.9. Making false declarations or providing false information for participation in the Bidding Process or to secure a contract.
 - 6.1.10. Canvassing and Cartelization in connection with these Bidding Documents.
- 6.2. If there is any conflict of interest, such conflict shall be disclosed forthwith to JIL.

7. Compliance with Laws

- 7.1. Each Bidder shall ensure that the Bid is in compliance with all Applicable Laws, including the Contract Labor (Regulation and Abolition) Act, 1970 and the Apprentices Act, 1961, and the rules and order issued there from time to time. The successful bidder will be required to provide satisfactory evidence of a valid and concurrent license issued in its favor under the Contract Labor (Regulation and Abolition) Act, 1970, prior to commencement of the Works. Failure to do so may result in the rejection of the Bid and forfeiture of the Earnest Money Deposit.
- 7.2. Execution of work by contract labor is prohibited vide Notification issued by Govt of India under Section 10(1) of the Contract Labor (Regulation and Abolition) Act,1970 bearing S.O. No. 2063 dated 21.06.1988. The contractor shall execute the work by using machines as specified with his regular employees/workmen only.
- 7.3. If a Bid is not in compliance with Applicable Laws, JIL may, at its sole discretion, reject the Bid outright and the Bidder will forfeit the EMD.
- 7.4. The Bidder at all times during the term of the contract shall observe, duly compliant with all the applicable laws and regulations, related compliances including those related to child labor, migratory laborers POSH and immune / indemnify JIL/its /Management/Board/Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc.

8. Local Conditions

- 8.1. It shall be incumbent upon each Bidder to fully acquaint himself with the local conditions and other relevant factors, which would have any effect on the performance of the contract and/or the cost. All decisions taken by the bidders is solely based on their own due diligence without being influenced by the representations made by JIL.
- 8.2. The Bidders are expected to obtain for themselves on their responsibility all information that may be necessary for preparing the Bid and entering into the Contract. Obtaining such information shall be at the Bidder's own cost.

- 8.3. Failure to obtain the information necessary for preparing the bid and/or failure to perform activities that may be necessary for the providing services before entering the contract shall in no way relieve the successful bidders from performing any work in accordance with the Bidding Documents.
- 8.4. It shall be imperative for each Bidder to fully inform themselves of all legal conditions and factors which may have any effect on the execution of the contract as described in the Bidding Documents. JIL shall not entertain any request for clarification from the Bidders regarding such conditions.
- 8.5. It is the responsibility of the Bidders that such factors have properly been investigated and considered while submitting the bid proposals and that no claim whatsoever including those for financial adjustment to the contract awarded under the Bidding Documents shall be entertained by JIL and that neither any change in the schedule of the contract nor any financial adjustments arising thereof shall be permitted by JIL on account of the failure of the Bidders to appraise themselves of local laws and site conditions.
- 8.6. Prior to submitting its Bid, each Bidder is required to visit and inspect the Site to fully acquaint itself with inter alia the condition of the Site, access to the Site, assess the Scope of Works and working conditions on the Site, including space for stacking of materials, conditions affecting accommodation and movement of labor and other information required for satisfactory execution of the Contract.
- 8.7. This RFP does not, however, give unconditional or unrestricted right to access the Site. The Site visit must be in compliance with the applicable laws and the rights of JIL over the site. In the event, the bidder undertakes site visit, then such bidder shall be liable towards any loss or damage caused to the site and/or JIL and/or its Board and/or its members or its Authorized Representative/ employees on account of any act or omission by the bidder or its employees, authorized representatives, agents, advisors etc. The site visit shall be conducted with prior notice to JIL through the following e-mail address tendering@jilindia.in. The email should clearly bear the following subject line "Site Visit for Wish Town Project".
- 8.8. No claims whatsoever from the Bidder, on account of anything in the Bidding Documents, and in particular, this Clause C.8, shall be entertained by any of JIL and/or its Board and/or its members or its Authorized Representative/ employees, under any circumstances. None of JIL and/or its Board and/or its members or its Authorized Representative/ employees shall be liable to reimburse any costs, claims or expenses incurred by any Bidder for the Site visit.

9. Bid Validity Period

- 9.1. The Bid shall remain valid 3 (three) months from the Bid submission date. A bid that is valid for a shorter period shall be rejected by JIL as being non-responsive.

- 9.2. In exceptional circumstances, at its discretion, JIL may solicit the Bidder's consent for an extension of the validity period. The request and the response shall be made in writing. If a Bidder accepts to prolong the period of validity, the EMD shall also be suitably extended. A Bidder may refuse the request without forfeiting its EMD. A Bidder granting the request will not be required or permitted to modify its bid.

D. Submission of Bid

1. Bid Submission

- 1.1. Bidders shall submit their Bids as per the procedure specified herein. The Bid proposal shall be submitted in accordance with the format contained in Annexure 3 of this ITB. The Bid must be accompanied with all statutory authorizations / compliances given by the board to participate in the tendering process (for the specific project) including the board resolutions/power of attorney authorizing the representative to participate, sign and execute all the necessary documents on behalf of the Bidder/and Bidder Company.
- 1.2. Each of the above documents must be uploaded in the format specified for this purpose. One complete set of these documents, as listed herein, including the Instructions to Bidders, the General Conditions of Contract, Special Conditions of Contract, and the Specifications, the Bill of Quantities fully priced, and all tender drawings (if any), duly signed and stamped. The bidder must ensure that the bid is signed by the Authorized Signatory of the bidder. All the pages of the Bid document must be sequentially numbered and must contain the list of contents with page numbers. Any deficiency in the documentation may result in the rejection of the Bid.
- 1.3. JIL may, at its discretion, extend this deadline for submission of bids by amending the Bidding Documents for the reasons specified therein at any time prior to opening of bids by JIL, in which case all rights and obligations of JIL and bidders will thereafter be subject to the deadline as extended.
- 1.4. The Bidder shall ensure that the Bid has been duly submitted within the submission timelines. JIL shall in no case be responsible if the Bid is not submitted within the specified timelines. If a Bid is received after the prescribed time period for submission, the Bid shall be rejected by JIL.
- 1.5. JIL shall not be responsible for any sort of delay or difficulty faced during the submission of Bids online by the Bidders due to any issues, including local issues. If a Bidder fails to submit the Bid in accordance with the timeline prescribed in the Bidding Documents, and the Bid is rejected by JIL; none of JIL and/or its Board and/or its members or its Authorized Representative/ employees, will in any way be liable to the rejected Bidder for any costs, interest or other amounts.
- 1.6. The bidder shall ensure that any change in the management during the entire term of the contract/work order shall be subject to the written approval of JIL and all the terms and conditions of the entire contract shall be binding on the new management.

2. Compliant Bids / Completeness of Response

- 2.1. Submission of the bid shall be deemed to have been done after careful study and examination of the Bidding Documents by the Bidder, with a full understanding of its implications.
- 2.2. Failure to comply with the requirements of this paragraph may render the bid non-compliant and the Bid may be rejected. Bidders must:
 - 2.2.1. Include all documentation in their Bid, specified in the RFP.
 - 2.2.2. Follow the format specified in the RFP while developing the Bid and respond to each element in the order; and
 - 2.2.3. Comply with all requirements as set out within this RFP.

3. Schedule of the Bidding Process

- 3.1. Bids, in their complete form in all respects as specified in the Bidding Documents and the corrigendum issued, if any, must be submitted online before the last date and time of submission, to JIL as specified in this section.
- 3.2. The schedule of the Bidding Process shall be as set out in the RFP.

4. Description of the Bidding Process

- 4.1. JIL has adopted a two-step process (referred to as the "**Bidding Process**") for selecting a Bidder for the award of the Project. The Bidding Process shall comprise two steps:
 - 4.1.1. The first relating to the Technical Bid in which Bidders would be required to furnish requisite Earnest Money Deposit of INR 6,50,000/- (Rupees Six Lakh Fifty Thousand only) (in the form of Demand Draft or Bank Guarantee in the prescribed format) pursuant to Clause C.4 of ITB and confirmation of compliance to the provisions of the Bidding Documents; and
 - 4.1.2. The second relates to the Price Bid.
- 4.2. As part of the Bidding Process, the Bidders are being called upon to submit their Bids separately, by physical delivery in accordance with the terms specified in the Bidding Documents.

5. Technical Bid

- 5.1. Bidder is required to prepare a Technical Bid in accordance with the prescribed format for submission of Technical Bid. The bidder should enclose all necessary and relevant documents for the technical evaluation, along with the Technical Bid. The bidder should submit all the supporting documents as per prescribed formats for submission of the Technical Bid of this RFP & NIT.

6. Price Bid

- 6.1. All Price Bids must be drafted and submitted separately from the Technical Bids. No Bidder should quote its commercial offer anywhere directly or indirectly in the Technical Bid. In the event that a Bidder gives an indication of its commercial offer in the Technical Bid, the Price Bid of such Bidder shall not be opened, and the entire Bid shall stand rejected.

7. Eligible Bidder:

- 7.1. The invitation to Bids is open to all Bidders eligible to participate if they meet the Eligibility Criteria set out in this Clause 8 of NIT.
- 7.2. All Bidders shall provide in their bid, Forms of Bid and Qualification information.
- 7.3. The Bidder should have not abandoned or left work incomplete in the last 3 Years. During course of Bidding Process or at any stage before or after awarding of the work, if it is found that the Bidder has abandoned or left work incomplete in last 3 Years, the bidder shall deem to be automatically disqualified from the Bidding Process and any communication/ documents executed between the parties shall become ineffective or invalid/void. In case the Bidder is found to have abandoned or left work incomplete in the last 3 years the EMD shall be forfeited.

8. Eligibility Criteria:

- 8.1. The interested bidders should meet the Criteria set out in this Clause no 8 of NIT to participate in the Bidding Process:

9. Genuineness of Credentials:

- i. The Bidder must submit an affidavit as per Clause 9 of NIT

10. Bids submitted after the designated time of submission.

- i. Bids submitted after the due date shall not be accepted and shall be automatically rejected. JIL shall not in any way be responsible for any delay in the submission of a bid. JIL shall not be responsible for any delay or non-receipt/ non-delivery of the documents. No further correspondence on the subject shall be entertained.
- ii. Bids submitted in any manner other than as prescribed in the RFP shall not be considered. No correspondence shall be entertained on this matter.
- iii. JIL reserves the right to modify and amend any of the above-stipulated conditions/criteria depending upon Project priorities.

11. Clarification on Bids

- i. During the bid evaluation, JIL may at its discretion, ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the price or substance of the bid shall be sought, offered or permitted. JIL is entitled to ask for clarifications as many times as necessary at no cost to JIL. In case of erroneous/non submission of documents, required to be submitted by the Bidder as per the provisions of the Bidding Documents, JIL may give the Bidder not more than 7 (seven) working days' notice to rectify/furnish such documents, failing which the bid shall be rejected.

12. Deviations

- i. Bids shall be submitted strictly in accordance with the requirements and terms & conditions of the RFP and the corrigendum, issued if any. The Bidder shall submit a No Deviation Certificate as per the format provided at Annexure 6 to this ITB. Bids containing deviation(s) are liable for rejection.

13. Modification and Withdrawal of Bids

- i. No bid may be altered or modified after submission to JIL. Unsolicited correspondence in this regard from Bidders shall not be considered.
- ii. No bid may be withdrawn after submission to JIL. Withdrawal of a bid after submission will result in the Bidder's forfeiture of its EMD.
- iii. If any Bidder withdraws its Bid after submission or makes any modifications to the Bid, JIL shall without prejudice to any other right or remedy, at its sole discretion, be at liberty to encash the EMD, immediately.

14. Bidder Authorization

- i. The signatory on the Bid may be either the Principal Officer or a duly authorized representative of the Bidder. The Bid should be accompanied by a Power of Attorney authorizing the signatory of the Bid. The Bid must be accompanied with all statutory authorizations / compliances given by the board to participate in the tendering process (for the specific project) including the board resolutions/power of attorney authorizing the representative to participate, sign and execute all the necessary documents on behalf of the Bidder/and Bidder Company.
- ii. All certificates and documents (including any clarifications sought and any subsequent correspondence), shall be furnished and signed by the Power of Attorney holder. The format of the requisite Power of Attorney is attached as Annexure 1 of this ITB.

E. Opening of Bids and Evaluation

1. Bid Opening

- 1.1. Documents submitted by the Bidder shall be closely scrutinized and the Bidders shall provide all the original documents whenever requested.
- 1.2. Bids shall be opened either in the presence of Bidders or their duly authorized representatives. The Bidder representatives who are present shall sign a register evidencing their attendance. Two representatives per bidder shall be permitted to be present at the time of opening the Bids.
- 1.3. The representatives of the Bidders should be advised to carry the below documents for attending the opening of the bid.
 - 1.3.1. the identity card of the authorized signatory of the bidder; and
 - 1.3.2. Copy of receipt or confirmation of EMD payment.

- 1.4. The venue, date and time for opening the Pre-qualification & Technical bid are mentioned in the Fact sheet & Bidding Schedule (refer clause no 2 of NIT).
- 1.5. The Bidders' representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of Bid opening being declared a holiday for JIL, the bids shall be opened at the same time and location on the next working day. In addition to that, if the representative of the Bidder remains absent, JIL shall continue the process and open the bids of all Bidders.
- 1.6. Total transparency shall be observed and ensured while opening the Bids.
- 1.7. JIL always reserves the right to postpone or cancel a scheduled Bid opening.

2. Preliminary Examination of Technical Bids

- 2.1. The Technical Bid of the bidder shall be opened to verify its contents as per requirements. JIL will examine the bids to determine whether they are complete, whether the documents have been properly signed, and whether the bids are generally in order.
- 2.2. Bids shall be treated as non-responsive if they are found to have been:
 - 2.2.1. Submitted in a manner not conforming with the manner specified in the Bidding Documents; or
 - 2.2.2. Submitted without appropriate EMD as prescribed herein; or
 - 2.2.3. Received without the appropriate power of attorney; or
 - 2.2.4. Containing subjective/incomplete information; or
 - 2.2.5. Submitted without the documents requested as per NIT & ITB; or
 - 2.2.6. Non-compliant with any of the clauses stipulated in the Bidding Documents; or
 - 2.2.7. Having less than the prescribed validity period.
- 2.3. The EMD of all non-responsive bids shall be returned to the bidders.
- 2.4. JIL may waive any minor informality, nonconformity or irregularity in a bid that does not constitute a material deviation and that does not prejudice or affect the relative ranking of any Bidder as a result of the technical evaluation, pursuant to Clause E.2 of ITB.

3. Evaluation of Technical Bids

- 3.1. JIL through its Consultant will carry out a detailed evaluation of the bids of the responsive bidders in order to determine whether the requisite sureties have been furnished and Bidder has confirmed compliance to the provisions of the Bidding Documents.
- 3.2. The entire bidding process documents will be processed/verified through the consultants appointed by JIL. The Consultants shall conduct scrutiny of all

documents submitted by the bidders and give their further recommendation for rejection or selection of the bids for the next step. On receiving the said recommendations, JIL shall take necessary actions.

- 3.3. If the Technical Bid is not in conformity with and does not meet the requirements of the Bidding Documents, a note shall be recorded accordingly by JIL, and the bidder's Price Bid shall not be considered for further action and the same shall not be opened.
- 3.4. The decision of JIL shall be final in this regard.
- 3.5. The Price Bids shall not be opened until the completion of the evaluation of all the Technical Bids that have been received by JIL. Upon completion of evaluation of the Technical Bids, the Price Bids of only those Bidders whose Technical Bids have met the technical criteria specified in the RFP, i.e. technically qualified Bidders, shall be opened.

4. Evaluation of Price Bids

- 4.1. JIL through its Consultant, will examine the Price Bids to determine whether they are complete, whether any computational errors have been made, whether the documents have been properly signed, and whether the bids are generally in order.
- 4.2. The prices of all such item(s) against which the Bidder has not quoted rates/amount (i.e., items left blank or against which '-' is indicated) in the Price Schedules will be deemed to have been included in other item(s).
- 4.3. The entire bidding process documents will be processed/verified through the consultants appointed by JIL. The Consultants shall conduct scrutiny of all documents submitted by the bidders and give their further recommendation for rejection or selection of the bids for the next step. On receiving the said recommendations, JIL shall take necessary actions.

5. Rates

- 5.1. The Bid should contain not only the rates but also the value of each item of work entered in the prescribed column of the schedule of quantities and all the items should be totaled up in order to show the aggregate value of the entire work. When the rates quoted by the bidder and the amount is not worked out correctly, the rate quoted by the bidder will be taken as correct and not the amount.
- 5.2. Rates quoted shall cover the provision of waterproof store of 1600 cement bag storage capacity with suitable lock and key arrangement.
- 5.3. Rates quoted shall cover the provision of site laboratory for routine test, for this purpose successful bidder shall provide compression testing machine, sieve sets, weighing machine with suitable weight, measuring jar, slump cone etc. and all other necessary apparatus permanently, as required by Engineer-in-Charge.

- 5.4. Rates quoted shall include that successful bidder shall remove all stores, working yards, labor hutments after completion of work/instructed by JIL from time to time or before final payment. The successful bidder will also clean all rubbish, debris, leveling filling if any so as to leave site in clean and tidy conditions for other works/contractors as directed by Engineer-in-charge.
- 5.5. Rates quoted shall include provision of all scaffolding, Concrete Pumps including piping, Tower Crane, hoists, tackles and other planks, shuttering materials and all other equipment generally required for proper execution of the work.
- 5.6. In addition:
 - 5.6.1. GST shall be paid over and above the accepted quoted rates.
 - 5.6.2. Rates shall be inclusive of Labor cess @ 1% of the Contract Price.
 - 5.6.3. All other taxes, levies, octroi, if any, in respect of this Tender shall be payable by the successful bidder and JIL will not entertain any claim whatsoever in this respect. In the event of non-payment/defaulting in payment of any octroi, royalty, Labour cess, or any other levy/tax including labour wages and provident fund dues etc. by the successful Bidder, JIL reserves the right to withhold the dues / payment and make payments to the Local /State /Central Govt. Authorities or to labourers, as may be applicable, and same shall be adjusted from the amounts due to successful bidder.
- 5.7. The rates for all items of work shall, unless clearly specified otherwise, include the cost of all labour, materials, machines, equipments and other inputs involved in the execution of the items.
- 5.8. JIL reserves the right to order any item or group of work or split the work between 2 or more bidders, if necessary. Such a step shall not constitute a breach of contract.
- 5.9. The subtotal, total price or the total bid price to be identified in Bid Form for this purpose, irrespective of the discrepancy between the amount for the same indicated in words or figures shall be rectified in line with the procedure explained above. If the Bidder does not accept the correction of errors as per this clause, its Bid will be rejected and the amount of the EMD will be forfeited. The Bidder should ensure that the prices furnished in various Price Schedules are consistent with each other. In case of any inconsistency in the prices furnished in the specified price schedules to be identified in Bid Form for this purpose, JIL shall be entitled to consider the highest price for the purpose of evaluation and for the purpose of award of the Contract use the lowest of the prices in these schedules.

6. Confidentiality and Contacting JIL

- 6.1. After the opening of the Technical Bid and/ or the Price Bid, information relating to the examination, clarification, and evaluation of Bids and recommendations concerning awards shall not be disclosed to Bidders or

other persons not officially concerned with this process until the issue of the Letter of Intent. From the time of submission of the Bid until such time as the Letter of Intent has been issued to the successful bidder, any Bidder who wishes to contact JIL on any matter related to its Bid, shall do so in writing.

- 6.2. Any effort by a Bidder to influence JIL in its evaluation process, Bid comparison, award or other decisions, may result in rejection of the Bidder's Bid. JIL shall be the sole judge in this regard.

F. Award of Contract

1. Award Criteria

- 1.1. Subject to Clause E and prior to the expiration of the period of Bid validity, JIL will notify the successful Bidder in writing, that its Bid has been accepted and will issue the Letter of Intent to the successful Bidder whose bid has been determined to be substantially responsive and to be the lowest evaluated bid, further provided that the Bidder is determined to have the requisite capacity and capability to perform the contract satisfactorily. The format of the Letter of Intent is as set out at Section 3 of this RFP.
- 1.2. The successful Bidder shall furnish unconditional acceptance of the terms and conditions of LOI along with relevant authorization within the timeline prescribed in the LOI. JIL reserves the right to reject the Bid and forfeit the EMD upon failure of the successful Bidder to furnish the unconditional acceptance of the terms and conditions of LoI within the timeline prescribed in the LOI.

2. Letter of Intent

- 2.1. Prior to the expiration of the period of Bid validity, JIL will notify the successful Bidder in writing, that its Bid has been accepted. The notification of award and issue of the Letter of Intent will constitute the formation of the contract. Further in case the resolution plan under challenge is not approved or rejected for any reason whatsoever, the whole tendering process shall be stand null and void and no action/ claims shall lie against JIL and/or its Board and/or its members or its Authorized Representative/ employees.

3. Signing the Contract Agreement

- 3.1. At the same time as JIL notifies the successful Bidder that its Bid has been accepted, JIL in consultation with the Bidder shall execute all the contract agreements including GCC/SCC.
- 3.2. The Contract Agreement shall be executed within fifteen (15) days of the signing of the Letter of Intent and the successful Bidder and JIL shall sign and date the Contract Agreement immediately thereafter.

- 3.3. On acceptance of the Letter of Intent, the name of the accredited representatives of the successful Bidder who would be responsible for taking instructions from the Engineer-in-charge shall be communicated to the Engineer-in-charge within 7 days after the date of written order to commence work.

4. Performance Security

- 4.1. Within Fifteen (15) days of signing the Contract Agreement, the successful Bidder shall furnish the performance Bank Guarantee for 3% (Three percent) of the Contract Price in the form provided in Schedule-6 of GCC (Vol-II).
- 4.2. Failure of the successful Bidder to comply with the requirements of Clause F.3 and F.4 shall constitute sufficient grounds for the termination of the Letter of Intent and forfeiture of the EMD, in which event JIL may make the award to the next lowest evaluated Bidder or call for new bids.

5. JIL's Right to Accept any Bid and to Reject any or all Bids.

- 5.1. JIL reserves the right to accept or reject any Bid, and to annul the tender process and reject all Bids at any time prior to issue of the Letter of Intent, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for JIL's action.

6. Fraud and Corruption

- 6.1. The Bidders, suppliers and contractors and their subcontractors under the contracts are required to observe the highest standard of ethics during the procurement and execution of such contracts.
- 6.2. The following definitions shall apply for determination of fraud and corruption under this Clause:
 - i. "Corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - ii. "Fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
 - iii. "Collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party.
 - iv. "Coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party.
 - v. "Obstructive practice" is

- a. deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede JIL's investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - b. acts intended to materially impede the exercise of JIL's inspection and audit rights.
- 6.3. JIL at any point of time during the bidding process or later during the contract period:
- 6.3.1. will reject a Bid if it determines that the successful Bidder has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question.
 - 6.3.2. will suspend a firm or individual, including declaring ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, a contract; and
 - 6.3.3. will have the right to require that the provision be included in the Bidding Documents and in contracts, requiring Bidders, suppliers, and contractors and their sub-contractors to permit JIL to inspect their accounts and records and other documents relating to bid submission and contract performance and to have them audited by auditors appointed by JIL.

ANNEXURE 1
POWER OF ATTORNEY
IRREVOCABLE POWER OF ATTORNEY

Know all men by these presents, We, [*Name of the Bidder*] having its registered office at [*Address*], do hereby irrevocably constitute, nominate, appoint and authorize [*Name*], son/daughter of [*Name*], and presently residing at [*Address*], who is presently employed with us and holding the position of [*Designation*], as our true and lawful attorney (“Attorney”) 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 in response to the RFP dated [●] bearing tender ref. no. [●] issued by Jaypee Infratech Limited including but not limited to signing and submission of all applications, undertaking, affidavits, bids and other documents and writings, participate in Bidders’ and other conferences and providing information / responses to the Jaypee Infratech Limited in all matters in connection with or relating to or arising out of the bid submission as part of the Bid Process.

We hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our aforesaid Attorney in exercise of the powers hereby conferred shall always be binding on us and shall always be deemed to have been done by us. This Power of Attorney is irrevocable.

All the capitalized terms used herein but not defined shall have the meaning ascribed to such terms under the RFP.

In witness whereof we, [*Name of the Bidder*], the above-named principal has executed this power of attorney on this [*month*] [*day*], 2024.

For Name of the Bidder

Name: [●]
Designation: [●],
Office Address: [●]

Common Seal of Bidder

Specimen Signature of the Attorney
Accepted

Name:
Designation:

Witnesses:

1. Name: [●]
Designation: [●]

2. Name: [●]
Designation: [●]

Signature and stamp of Notary

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 executant(s) and the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.*
2. *To be executed on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.*
3. *Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).*

ANNEXURE 2 - PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

Ref: Bank Guarantee No. _____
Date: _____

To:
Jaypee Infratech Limited,
Contract Division, J Block,
Sector-128, Noida, UP
201304

THIS deed of Guarantee ("Bank Guarantee") is made this [●] day of [●] by [Bank Name], having its branch office at [Address], and registered office at [●] (hereinafter referred to as the "Guarantor or Bank" which expression shall unless repugnant to the context or meaning thereof include its legal representatives, executors, administrators, successors-in-interest and permitted assigns) through its authorized signatory/representative, [●], duly authorized *vide* bank resolution/circular dated [●]

IN FAVOUR OF

M/s. Jaypee Infratech Limited, a company registered under the Companies Act, 1956, having its registered office at Sector-128, Noida – 201304, Uttar Pradesh (hereinafter referred to as the "Company" which expression shall unless repugnant to the context or meaning thereof include its successors in interest and assigns).

WHEREAS [●], a company registered under the Companies Act, 1956, having its registered office at [●] [Insert registered office address] (hereinafter called the "Bidder") has submitted a technical bid and a price bid (hereinafter referred to collectively as, the "Bid") in response to the Request for Proposal issued by the Company under Tender No. [●] (hereinafter referred to as the "RFP").

AND WHEREAS as per the provisions of the RFP dated [●] bearing tender ref. no. [●] and other required documents issued by Jaypee Infratech Limited, the Bidder has agreed to provide an unequivocally, irrevocably, and unconditionally bank guarantee as security against the Bidder's commitment to Tender process for INR 6,50,000/- (Rupees Six Lakh Fifty Thousand only) towards an Earnest Money Deposit Bank Guarantee valid till the execution of the Contract Agreement.

AND WHEREAS the Bank at the request of the Bidder has agreed to give this unequivocally, irrevocably and unconditionally Bank Guarantee.

NOW THEREFORE this deed of Bank Guarantee covenants as follows:

1. In consideration of the aforesaid premises and in consideration of the faithful performance by the Bidder of the terms and conditions of the RFP which has to be guaranteed by a bank, we, the Guarantor, hereby guarantee that the Bidder will duly comply and faithfully perform all its obligations and responsibilities under the said RFP failing which we, the Guarantor, do hereby unequivocally, unconditionally and irrevocably undertake to pay to the Company forthwith on first demand from the Bank including from any officer authorised by it in this behalf not later than 48 (forty eight) hours from receipt of such demand, and without protest or demur or proof or satisfaction and without reference to the Bidder such amount or amounts as the

Guarantor may be called upon to pay not exceeding in the aggregate a sum of INR [●] (Indian Rupees[●] only).

2. We, [Insert name of bank] do hereby agree, guarantee and undertake that it shall forthwith, immediately upon receipt of written intimation/ demand/letter/claim from the Company addressed to the Bank, pay to the Company without any deduction, demur, protest, delay or reference to the Bidder, the aforesaid sum of Rs. [●]/- [Indian Rupees only]. Any such demand made on the Guarantor Bank, shall be conclusive as regards the amount due and payable by the Guarantor Bank under this Bank Guarantee. However, our liability under this Bank Guarantee shall be restricted to an amount not exceeding Rs. [●]/-[Indian Rupees only].
3. We undertake to pay to Jaypee Infratech Limited any money so demanded notwithstanding any dispute or disputes raised by the Bidder and without requiring the Company to invoke any legal remedy to compel the Guarantor to pay the same even if Bidder considers such demand of the Company, unjustified whether in any suit or proceeding pending before any Court or Tribunal or otherwise; our liability under this present being absolute and unequivocal. Notwithstanding anything to the contrary, the Company's decision as to whether the Bidder has made any default or defaults will be binding on us and we shall not be entitled to ask the Company to establish his claims under this Bank Guarantee but we, the Guarantor, will pay the sum on demand without any objection.
4. The Bank agrees that the Company shall be the sole judge of as to whether the said Bidder has committed any breach or breaches of any of the terms and conditions of the said RFP and the same shall be final, absolute and unequivocal and further agrees that the liability of the Bank to the Company under this Bank Guarantee shall remain in full force and effect notwithstanding the existence of any difference or dispute between the Bidder and the Company, the Bidder and the Bank and/or the Bank and the Company or otherwise howsoever affecting these presents or the liability of the Bidder to the Company, and notwithstanding the existence of any instructions or purported instructions by the Bidder or any other person to the Bank not to pay or for any cause withhold or defer payment to the Company under these presents. Notwithstanding the existence of such difference, dispute or instruction, the Bank shall be and remain liable to make payment to the Company in terms hereof.
5. The Guarantor Bank shall make payment hereunder on first demand without any restriction or conditions and notwithstanding any objection by the Bidder _____ [Insert name of the Bidder] and / or any other person. The Guarantor Bank shall not require Jaypee Infratech Limited to justify the invocation of this Bank Guarantee, nor shall the Guarantor Bank have any recourse against the payee in respect of any payment made hereunder. The Bank further undertakes and agrees that it shall make payment to you of the aforesaid amount of Rs. [●]/- [Indian Rupees only] immediately upon demand being made, as aforesaid, without in any manner referring to, or seeking consent of or instructions from the Bidder and without in any manner, explicitly or by conduct, issuing notice of our intent to honour our commitment under this Bank Guarantee or on the issue of any instructions to the contrary issued by the Bidder.
6. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment thereunder and the Bidder shall have no claim against us for making such payment.
7. We, the Guarantor Bank further agree that the Bank Guarantee herein contained shall remain in full force and effect for a period of 3 (three) months from the date hereof. Jaypee Infratech Limited shall be entitled to invoke this Bank Guarantee up to 30 days from the last date of the validity of this Bank Guarantee by issuance of a written demand to invoke this Bank Guarantee.

8. We, the Guarantor Bank, further agree that Jaypee Infratech Limited and/or its authorised representatives shall have the fullest liberty without our consent to vary any of the terms and conditions of the RFP and other Tender Document or to extend time of performance by the said Bidder from time to time. We shall not be relieved from our liability by any reason of any such variation or extension being granted to the said Bidder or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.
9. This Bank Guarantee shall be valid and binding on the Guarantor Bank and shall in no event be terminable by notice or any change in the constitution of the Guarantor Bank or that of the Bidder or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between the parties. This Bank Guarantee shall not be affected in any manner by reason of merger, amalgamation, restructuring, liquidation, winding up, dissolution or any other change in the constitution of the Guarantor Bank.
10. We, the Guarantor, also agree that we shall not during the currency of this Bank Guarantee herein given or during the period of its extension revoke the same even by giving notices to the Company.
11. The Bank further agree that for the purpose of this Bank Guarantee any notice issued to us by the Company and the amount claimed in such notice as being payable by the Contractor to the Company shall be deemed to be correct and shall not be disputed or questioned by us but shall be paid in the manner herein before stated forthwith and without delay.
12. This Bank Guarantee shall not be determined affected or discharged by the liquidation or winding up, dissolution or due to the change in the constitution or insolvency of the Bank or the Bidder but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to the Company in terms hereof.
13. The Bank further agrees that the Company, at its option, shall be entitled to enforce this Bank Guarantee against the Bank, without in the first instance proceeding against the Bidder or making any demand upon the Bidder to pay and notwithstanding any security or other Guarantee that the Company may be possessed of in relation to the Bidder's obligation and liabilities, either in relation to RFP or otherwise and our liability to make unconditional payment on demand by the Company shall not be affected or diluted and shall remain valid, enforceable and unaltered.
14. In order to give full effect to the Bank Guarantee herein contained the Company shall be entitled to act as if we were your Principal debtors in respect of all your claims against Bidder hereby Guaranteed by us as aforesaid and we hereby expressly waive all our rights of suretyship and other rights if any which are in any way inconsistent with the above or any other provision of the Bank Guarantee.
15. Any notice signed by the representative of the Company by way of request, demand or otherwise hereunder may be sent to by telex, fax or by post to the Bank addressed as aforesaid and, if sent by post, it shall be deemed to have been given at the time when it would be delivered in due course of post and in proving such notice it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an authorized officer of the Company that the envelope was so posted shall be conclusive.
16. The Bidder shall bear the stamp duty in respect of this instrument.
17. This Bank Guarantee shall be interpreted in accordance with the laws of India the Courts in [●] shall have the exclusive jurisdiction.
18. The Guarantor Bank represents that this Bank Guarantee has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

19. This Bank Guarantee shall be a primary obligation of the Guarantor Bank and accordingly Jaypee Infratech Limited shall not be obliged before enforcing this Bank Guarantee to take any action in any court/tribunal or arbitral proceedings against the Bidder, to make any claim against or any demand on the Bidder or to give any notice to the Bidder or to exercise, levy or enforce any distress, diligence or other process against the Bidder.
20. Jaypee Infratech Limited shall have the right to invoke this Bank Guarantee or any part thereof on or before the _____(3 months plus 30 days claim validity period).
21. The Company shall have a right to invoke this Bank Guarantee, as many times as it deems fit, either in part or in full, as it may deem fit.
22. The Bank shall not be relieved from its liability by reason of any such act or omission on the part of the Company or any indulgence by the Company to the Bidder or other thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of relieving us of our obligations under this Bank Guarantee, including the following:
 - a) any defense based on any legal disability or other defense of the Bidder, by reason of the cessation or limitation of the liability of the from any cause other than full payment of all sums payable under the Bank Guarantee.
 - b) any defense based on any statute or rule of law that provides that the obligation of a surety must be neither larger in amount nor in any other respect more burdensome than that of a principal.
 - c) the benefit of any statute of limitations affecting the liability of the Bank or the enforcement of the Bank Guarantee.

NOTWITHSTANDING anything contained herein:

1. This Bank Guarantee shall be valid till 3 months from the date of submission of the Bid; and
2. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if written claim or demand is served upon us by the authorized representative Jaypee Infratech Limited on or before the [•] [3 months' from the date of validity plus 30 days claim validity period]
3. This Bank Guarantee shall be extended from time to time for such period, as may be desired by Jaypee Infratech Limited.

All claims under this Bank Guarantee shall be payable at _____

This Bank Guarantee will be returned to us as soon as the purpose for which it is issued is fulfilled.

In witness whereof the Guarantor Bank, through its authorized officer, has set its hand and stamp on this.....day ofat

.....

Witness:

1

Signature Name and Address.

Name:

2

Designation with Bank

Stamp Name and Address

Attorney as per power of attorney No

For:

..... [Insert name of the Bank]

Banker's Stamp and Full Address:

Dated this day of 2024.

ANNEXURE 3 - BID PROPOSAL
[On the Letterhead of the Bidder]

To,

Jaypee Infratech Limited,
Contract Division, J Block,
Sector-128, Noida, UP
201304

Subject: Bid Proposal in response to the Tender Number [●] dated [●] issued by Jaypee Infratech Limited.

Dear Sir,

1. We, the undersigned Bidder having read, examined have fully understood and are satisfied with the information provided in detail in the Bidding Documents. We hereby unconditionally and irrevocably accept the tender conditions and Bidding Documents in its entirety for the Works.
2. I/We hereby enclose herewith our Bid with duly signed and/or certified forms/documents/authorizations listed below for your consideration. I/We have viewed and read the terms and conditions of the Bidding Documents carefully. I/We have submitted the following documents:
 - a) **NIT, ITB (Sections I, II and III of VOL-I)**
 - b) **GCC, SCC and Technical Specifications (Sections I, II, III and IV of VOL-II)**
 - c) **Price Bid, duly quoted rates for all items as per Bill of Quantities (VOL-III), in a separate sealed envelope.**
 - d) **Demand Draft/Bank Guarantee issued by any nationalised or Commercial Scheduled Bank against Earnest Money Deposit in the format prescribed at Annexure 2 of ITB.**
 - e) **Power of Attorney of the person authorised for signing/submitting the bid. (Annexure 1 of ITB)**
 - f) **This Bid Proposal (Annexure 3 of ITB along with other supporting documents Appendix- A to Appendix-G)**
 - i. **Details of Experience for similar works (Appendix-A)**
 - ii. **Work Experience Certificates (Appendix-B)**
 - iii. **TDS details for Private Sector Projects - (Appendix-C)**
 - iv. **Financial Details- (Appendix-D)**
 - v. **General Information - (Appendix-E)**
 - vi. **Registration Details of the contractor in the GST Act (Appendix-F)**
 - vii. **Details of Ongoing Litigation (Appendix-G)**
 - viii. **Affidavit duly notarized by Notary Public on Non-Judicial Stamp Paper of Rs. 100 for correctness of Documents/Information (Appendix-H)**
 - ix. **Copies of EPF registration/PAN Card**
 - g) **Undertaking (Annexure 4 of the ITB)**
 - h) **Confidential Undertaking (Annexure 5 of the ITB)**
 - i) **No Deviation Certificate (Annexure 6 of the ITB)**
 - j) **All pages of Bidding Documents including addendum/Corrigendum, if any- Duly signed by authorized person**
 - k) **All pages of Pre-Bid clarifications, if any.**

3. We have submitted all the requisite documents as per the prescribed formats set out in the Bidding Documents without any deviations, conditions and without any assumptions or notes.

4. We further represent and confirm as follows:

a) Acceptance

We hereby unconditionally and irrevocably agree and accept the terms of the RFP and that the decision made by Jaypee Infratech Limited in respect of any matter with respect to, or arising out of, the Bidding Documents and the Bid Process shall be binding on us. We hereby expressly waive any and all claims against any and all of JIL and/or its Board and/or its members or its Authorised Representative/ employees (as defined in the Bidding Documents), in respect of the Bid Process and its cancellation.

b) Litigation/Proceedings

[We confirm that there are no litigation/disputes/proceedings pending or threatened by or against us, which materially affects our ability to fulfil our obligations under the RFP.] OR [We confirm that we have listed out all the litigation/disputes/proceedings pending or threatened by or against us in the format provided at Appendix G. There are no other litigation/disputes/proceedings pending or threatened against us.]

We confirm and declare that no pending criminal investigation whether at ED/SFIO/EOW/CBI /or any other authority including Courts are currently pending or sub-judice in relation to its past awarded works by any company/entity/corporation.

We further declare that we are solvent and financially sound to complete the project and no proceedings are pending / continuing or commenced under the aegis of Insolvency and Bankruptcy Code, 2016 and none of our bank accounts were declared NPA by any financial institution. Further, no winding up notice has been served upon us by any creditors and no resolution of voluntarily winding up has ever been passed by its Board.

c) Familiarity with Applicable Laws

We confirm that we have studied the provisions of relevant laws and regulations to enable us to submit our Bid along with required documents and execute the other required documents in the event of our selection as the Successful Bidder. We have obtained the necessary corporate and regulatory approvals required to participate in the Bid Process and submit the Bid.

We further confirm that we are eligible as per Applicable Law to submit this Bid and that our Bid is not in contravention of the provisions of the Applicable Laws for the time being in force.

We further always confirm that during the term of the contract, we shall observe, duly compliant with all the applicable laws and regulations, related compliances including those related to child labour, POSH and immune / indemnify JIL/its Board /Management/ Board/Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc.

d) Contact person

The details of the contact person for the purposes of this Bid are provided below:

Name: [●]

Designation: [●]

Company Address: [●]

Phone Nos.: [●]

Fax Nos.: [●]

E-mail address: [●]

5. We are enclosing herewith the Bid containing duly signed forms/documents/authorizations, with [●] original copy as mandated in the Bidding Documents, for your consideration.
6. We confirm that the Bid submitted by us is consistent with all the requirements of submission as stated in the Bidding Documents and Applicable Laws.
7. The information submitted by us is complete, strictly as per the requirements stipulated in the Bidding Documents and is true and correct to the best of our knowledge and understanding. We acknowledge that we shall be solely responsible for any errors or omissions in our Bid.
8. We confirm that all the terms and conditions of our Bid are valid for acceptance till the successful implementation of the Bid. We further confirm that in the event that we are declared a Successful Bidder, then our Bid shall continue to remain valid and binding for 3 (three) months from the Bid proposal.
9. I/We hereby agree and undertake that If I/we fail to commence the work within 10 days of the date of issue of Letter of Intent and/or I/we fail to sign the agreement as per relevant Clause of Contract, I/we agree that JIL shall, without prejudice to any other right or remedy, be at liberty to cancel the Letter of Intent and to forfeit the said Earnest Money Deposit as specified above.
10. We confirm and declare that we are eligible as per all Applicable Laws, including conditions mentioned in the Bidding Documents, without the requirement to obtain any additional approvals, and have provided all the relevant Eligibility Criteria to evidence the same.
11. We and our representatives will comply with all the terms and conditions of the Bidding Documents and will execute the prescribed Undertaking in the format provided at Annexure 5 to this ITB; as well as the Confidentiality Undertaking in the format provided at Annexure 6 to this ITB.
12. Should this Bid be accepted, I/We agree to abide by and fulfil all terms and conditions referred to above and as contained in Bidding Documents elsewhere and in default thereof, to forfeit and pay JIL, or its successors or its authorized nominees such sums of money as are stipulated in the NIT and Bidding Documents.
13. Capitalized terms shall have the meaning given to them in the Bidding Documents.

Thanking you,

Yours faithfully,

Name and Address of Authorised Signatory:

(Not below the designation of a director)

Company rubber stamp/seal

Appendix-A - DETAILS OF SIMILAR WORK

Tender for:

MANDATORY INFORMATION DOCUMENTS:

DETAILS OF SIMILAR WORK

(Details to be filled online also)

S. No	Name of work and its location	Name of Client	Date and No. of Completion Certificate	Date of Start	Date of Completion	Cost of Work on completion	Value of TDS in case of Private Work
1.							
2.							
3.							

1. We hereby Certify that the Completion Certificates of above works are enclosed with the Bidding Documents.
2. Details mentioned in the above Form are as per Completion Certificates and have not been presumed.
3. If any detail is not mentioned in the Work Completion Certificate, documentary proof of the details like drawings, LOA, BOQ, completion certificate/occupation certificate, copy of final bill, etc. is to be submitted and uploaded on Tender Website along with the Completion Certificate.

Signature of Bidder with Seal

Appendix-B - WORK EXPERIENCE CERTIFICATE

Name of the Client with Address, email & phone no.

Dispatch No.....

Date:

WORK EXPERIENCE CERTIFICATE

Name of Contractor _____

1	Name of work / project & Location				
2	Name and Address of the Clients				
3	Agreement Amount				
4	Cost of work on completion				
5	Date of start				
6	Stipulated date of completion				
7	Actual date of completion				
8	Amount of compensation levied for delayed completion if any				
9	Type of Work				
13	Performance report	Outstanding	Very Good	Good	Poor
(a)	Quality of work				
(b)	Resourcefulness				
(c)	Financial soundness				
(d)	Technical proficiency				
(e)	General behaviour				

Date

Name &
Designation

Signature with Seal of issuing Authority

Appendix-C - TDS DETAILS FOR PRIVATE SECTOR PROJECTS

(Details to be filled online also)

S. No.	Name of Work	Name of Clients	Project Cost in Lakh (Rs)	No. And Date of Completion Certificate	Cost of the work on completion in Lakh (Rs)	Payments Received as per TDS In Lakh (Rs)	TDS Corresponding to the Payments	Year wise TDS as per Form-26AS/Form 16A relating to the work
1.								
2.								
3.								

Note:

- i) Value of Work done will be considered commensurate with value of TDS Certificates.
- ii) In case of multiple contracts undertaken from a client, details of TDS/Form- 26AS for each work mentioned above need to be segregated and given separately.
- iii) This form needs to be supported with Form-26AS taken in HTML format or Form -16A.

Signature of Bidder with Seal

Signature of Chartered Accountant
With Stamp and Membership Number

Appendix-D - FINANCIAL DETAILS(Details to be filled online also)

Tender For:

MANDATORY INFORMATION DOCUMENTS:

S.No.	Description	1 st FY Rs. (In Lacs)	2 nd FY Rs. (In Lacs)	3 rd FY (& last) FY Rs. (In Lacs)	4th FY (& last) FY Rs. (In Lacs)	5th FY (& last) FY Rs. (In Lacs)
		a	b	c	d	E
i.)	Profit/Loss					
ii.)	Gross Annual Turnover of Previous 5 financial years ending as on last day of the preceding Financial Year.					
iii.)	Average Annual Turnover during the 3 best out of last 5 financial years (Rs. In Lacs) = (sum of best three)/3					
iv.)	Net Worth (paid up capital + reserves) as on last day of the preceding Financial Year.					

Note:

1. Summarised page of Audited Profit & Loss Account of previous three Financial Years duly certified by the chartered account, is to be submitted.
2. Summarized page of Audited Balance Sheet of last Financial Year (ending on last day of the preceding Financial Year) duly certified by the chartered account, is to be submitted.
3. This Form is to be submitted in original.

Signature of Chartered
Accountant with SealSeal and Signature
of bidder

Appendix-E - GENERAL INFORMATION

1.	Name of Applicant/Company	
2.	Address for correspondence	
3.	Official e-mail for communication	
4.	Contact Person: Telephone Nos. Fax Nos. Mobile	
5.	Type of Organization: a) An individual b) A proprietary firm c) A firm in partnership (Attach copy of Partnership) d) A Limited Company (Attach copy of Article of Association) e) Any other (mention the type)	
6.	Place and Year of Incorporation	
7.	Name of Directors/Partners in the organization	
8.	Name(s) and Designation of the persons , who is authorized to deal with JIL (Attach copy of power of Attorney)	
9.	Bank Details : Name of Bank, Address of Bank Branch, Account No., RTGS, IFS Code	

Signature of Bidder with Seal

Appendix-F - GST REGISTRATION

GST Registration Details of Contractor/Vendor	
Name	
Address (As per registration with GST)	
City	
Postal Code	
Region/State (Complete State Name)	
Permanent Account Number	
GSTIN ID/Provisional ID No.: (copy of Acknowledgement required)	
Type of Business (As per registration with GST)	
Service Accounting Code/HSN Code:	
Contact Person	
Phone Number and Mobile Number	
Email ID	
Compliance Rating (if updated by GSTN)	

**APPENDIX G - DETAILS OF ONGOING LITIGATION/INVESTIGATION BY ANY
CENTRAL AND STATE AGENCIES**

A. CLAIMS INITIATED BY THE BIDDER

S.No.	Case Name/FIR/CC	Forum	Relief Claimed	Description of litigation/claim	Date of last hearing	Date of next hearing

B. CLAIMS INITIATED AGAINST THE BIDDER

S.No.	Case Name/FIR/CC/ECIR.	Forum	Relief Claimed	Description of litigation/claim	Date of last hearing	Date of next hearing

*** All order sheets to be provided separately.**

APPENDIX -H - AFFIDAVIT

AFFIDAVIT

(To be submitted by bidder on non-judicial stamp paper of Rs.100/ (Rupees Hundred only) duly attested by Notary Public)

I, _____, aged _____, resident of _____, working as _____, _____, an authorized signatory on behalf of _____ Limited ("Bidder") hereby solemnly affirm and declare as under:

1. That I am the Authorized signatory of M/s Having its Head Office/Regd. Office at I am conversant with the facts and circumstances surrounding the subject of this affidavit and have been authorized to depose to the same pursuant to the power of attorney dated [●] issued pursuant to the board resolution passed at the meeting of the board of directors of the Bidder held on [●]. I am filing this affidavit to place on record verification of facts and documents in connection with the Bidding Process for Wishtown Noida Project.
2. That the information/documents/Experience certificates submitted by M/s..... along with the Bid for (Name of work)..... To JIL are genuine and true and nothing has been concealed.
3. I shall have no objection in case JIL verifies them from issuing authority(ies). I shall also have no objection in providing the original copy of the document(s), in case JIL demands so for verification.
4. That _____ (Name of the bidder) shall fully comply with the DIPP's PPP-MII order no P-45021/2/2017/E II dated 15.06.17 or any further revision at any later date during the entire tenancy of the contract.

Note: In case of procurement for a value in excess of Rs 10 crore, above undertaking shall be provided from a statutory auditor or cost auditor of the company(in the case of companies) or from a practicing-chartered accountant (in case of Bidder other than companies)

5. I hereby confirm that in case, any document, information & / or certificate submitted by me found to be incorrect / false / fabricated, JIL at its discretion may disqualify / reject / terminate the bid/contract and also forfeit the EMD / All dues.
6. I shall have no objection in case JIL verifies any or all Bank Guarantee(s) under any of the clause(s) of Contract including those issued towards EMD and Performance Guarantee from the Zonal / Branch office of issuing Bank and I/We shall have no right or claim on my submitted EMD before JIL receives said verification.
7. That the Bank Guarantee issued against the EMD issued by (name and address of the Bank) is genuine and if found at any stage to be incorrect / false / fabricated, JIL shall reject my bid, cancel pre-qualification and debar me from participating in any future bid for three years.
8. I hereby confirm that our firm /company is not blacklisted/ barred /banned from bidding by JIL. If this information is found incorrect, JIL at its discretion may disqualify / reject / terminate the bid/contract.

9. The person who has signed the Bidding Documents is our authorized representative. The Company is responsible for all of his acts and omissions in the Bid.

10. That nothing has been concealed in the information submitted as mentioned above.

Solemnly affirmed and verified on this [●] day of [●], 2024 at [●].

(Signature)
Name: [●]
Designation: [●]
Office Address: [●]

VERIFICATION

I,, the Authorised signatory of M/s..... do hereby solemnly declare that what is stated above in paragraphs 1 to 10 are on the basis of the books and records of the Bidder and confirm that the contents of the above Affidavit are true and correct, no part of it is false and nothing has been concealed there from.....

Verified at [●] day of [●], 2024 at [●].

Deponent

(Signature)
Name: [●]
Designation: [●]
Office Address: [●]

Signature and Stamp of Notary

ANNEXURE 4 - UNDERTAKING BY BIDDERS
[On a non-judicial stamp paper of appropriate value]

To,
Jaypee Infratech Limited,
Contract Division, J Block,
Sector-128, Noida, 201304- UP.

Dear Sir,

Subject: Bidder's undertaking in relation to the bidding process for project namely The **KASA** ("Project") in accordance with the terms of the Applicable Law) and the terms and conditions of the Bid Document dated [●].

1. I / We, [name of the chairman/managing director/director/authorized person of bidder], son of [●], aged about [●] years, currently residing at [Address to be inserted] and having Aadhaar / Passport number [●], on behalf of [name of the bidder] having registered office at [●] ("Bidder"), pursuant to board resolution / authorisation letter / power of attorney dated [●] (enclosed herewith), refer to the RFP dated [●] bearing tender ref. no. [●], as amended from time to time ("RFP"/"Tender Document"), inviting binding offers for submission of Bids.
2. I/We, hereby state and confirm that I/ We have read and understood the terms of the Bidding Documents and undertake that I/ We provide our unconditional acceptance of the terms and conditions of the Bidding Documents as amended from time to time in accordance with the procedure set out under the RFP.
3. I/We hereby undertake and confirm that I/we shall provide the relevant information and records to inter alia enable an assessment of the Bidder in terms of the Bidding Documents and any other applicable law and shall intimate the Jaypee Infratech Limited forthwith in the event I/we become ineligible at any time during the Bid Process.
4. I/ We acknowledge and agree that the Jaypee Infratech Limited reserve the right to issue clarifications, amendments and modification to the Tender Document or to waive or relax any term or condition or its application in any particular case, in each case as they may deem fit in their sole discretion. Jaypee Infratech Limited reserve the right to reject any and all applications in their sole discretion without assigning any reasons.
5. I/ We acknowledge and confirm that Jaypee Infratech Limited reserve the right to conduct due diligence on us and/or request for additional information/ documents/clarifications from us, including for the purposes of determining our eligibility, at any stage of the Bid Process, and we shall promptly comply with such requirements. We understand that failure to satisfy the queries of Jaypee Infratech Limited may lead to rejection of our Bid.
6. I/We hereby state and confirm that we have provided all relevant information / documents in the prescribed format and as mentioned in the Tender Document, and that every information and records provided by us is/are true and correct and discovery of any false information or record at any time will render us ineligible to submit the Bid and may attract consequences under the Tender Document. We, however, understand that Jaypee Infratech Limited reserves the right to disqualify us without assigning any reason whatsoever and without any liability.
7. I/ We hereby authorise Jaypee Infratech Limited to disclose any and all information submitted or to be submitted by us, to such persons and advisors that they may deem appropriate, for the purposes of assessing, analysing, verifying and evaluating us, and subsequently our Bid.
8. I/We confirm that this undertaking has been duly signed by an authorized representative and a copy of the authorization is annexed to this undertaking.
9. I/We undertake that I/we shall maintain confidentiality of the information and shall not use such information to cause an undue gain or undue loss to itself or any other person.

10. I/ We further acknowledge and agree with the terms as are set out in the Tender Document as uploaded on the website of Jaypee Infratech Limited may be updated or modified from time to time.
11. This undertaking forms an integral part of the Tender Document, and any breach hereof would be considered as a breach of the Tender Document.
12. I / We further declare/re-confirm that for all purposes in respect of and in relation to the Tender Document I will not challenge the tendering process, even in case I was not selected as a successful bidder due to any reasons whatsoever. I/We further undertake to abide by the decisions made by JIL and/or its Board and/or its members/Consultant or its Authorised Representative/ employees and they shall be final and binding upon me. Further I / We left with no cause to litigate such decisions at any forum.
13. This Undertaking shall be governed by and construed in accordance with the laws of India. Any action, suit or proceeding relating to this Undertaking shall be submitted to the exclusive jurisdiction of the courts of Gautam Budh Nagar, Uttar Pradesh [].

We agree that we will comply with all the terms and conditions aforesaid of this Undertaking.
On behalf of [Insert Name]
Name:
Title:

ANNEXURE 5 - CONFIDENTIALITY UNDERTAKING

[To be printed on the stamp paper of appropriate amount as per the stamp act applicable to the state of execution]

This confidentiality undertaking has been signed on this [●] day of [●], 2024 by [Insert name of the Bidder], having its office at [●] acting through Mr./Ms. [●], the authorized signatory / authorized representative ("Recipient", which expression shall, unless repugnant to the context, include its successors in business, administrators in business, administrators, insolvency professional, liquidator and assigns or legal representatives) in favour of Jaypee Infratech Limited, a company having its registered office at J Block, Sector-128, Noida, UP.

THEREFORE, the Recipient hereby unconditionally and irrevocably declares and undertakes as follows:

1. The Recipient undertakes and declares that it will not divulge any part or whole of any information relating to the Bid Process, including without limitation, any information contained in the Bidding Documents, in each case, through oral or written communication or through any mode, and same shall constitute "Confidential Information". Additionally, any information or documents generated or derived by the Recipient that contains, reflects or is derived from any Confidential Information shall also be deemed as "Confidential Information".
2. The Recipient further unconditionally and irrevocably undertakes and declares that:
 - a) the Confidential Information shall be kept confidential by the Recipient and shall be used solely in accordance with the terms of the Bidding Documents;
 - b) the Recipient shall not use the Confidential Information to cause any undue gain or undue loss to itself, Jaypee Infratech Limited and/or its Board and/or its members or its Authorized Representative/ employees or any other person;
 - c) the Recipient shall comply with the requirements under Tender Document, and other provisions of law for the time being in force relating to confidentiality and insider trading;
 - d) the Recipient shall protect any intellectual property of Jaypee Infratech Limited which it may have access to;
 - e) the Recipient shall ensure that all Confidential Information is kept safe and secured at all times and is protected from unauthorized access, use, dissemination, copying, theft or leakage;
 - f) the Recipient shall take all necessary steps to safeguard the privacy and confidentiality of the Confidential Information and shall use its best endeavors to secure that no person acting on its behalf divulges or discloses or uses any part of the Confidential Information in breach of this confidentiality undertaking;
 - g) the Recipient shall be responsible for any breach of obligations under this confidentiality undertaking (including any breach of confidentiality obligations by any employee or advisor of the Recipient) and shall indemnify Jaypee Infratech Limited against any loss, damages and costs incurred by Jaypee Infratech Limited due to such breach; and
3. The Recipient agrees, acknowledges, and undertakes that the Confidential Information may only be disclosed to and shared with any employees or advisors of the Recipient, in accordance with applicable laws in relation to confidentiality and insider trading, Tender Document and the terms of this confidentiality undertaking, on a strict need-to-know

basis and only to the extent necessary, provided that the Recipient shall bind such employees or advisors by way of an undertakings/ agreements, to terms at least as restrictive as those stated in this confidentiality undertaking.

4. Notwithstanding anything to the contrary contained herein, it is clarified that the obligation to maintain confidentiality of Confidential Information shall not apply to:
 - a) information which, at the time of disclosure to the Recipient was already in the public domain without violation of any provisions of applicable laws;
 - b) information which, after disclosure to the Recipient becomes publicly available without any breach of this confidentiality undertaking or violation of applicable laws;
 - c) information which was, lawfully and without any breach of this confidentiality undertaking, in the possession of the Recipient prior to its disclosure, as evidenced by the records of the Recipient;
 - d) information that is mandatorily required to be disclosed by the Recipient (and to the extent required to be disclosed) pursuant to the requirements of applicable laws, or order of a judicial, regulatory or administrative authority or the guidelines of the regulatory/administrative authority or the stock exchange.
5. The Recipient agrees that no representation, warranty or inducement, whether express or implied, is being made as to the accuracy, completeness, authenticity or adequacy of the information (including but not limited to the Confidential Information) provided or to be provided to the Recipient. The Recipient further agrees that, Jaypee Infratech Limited shall not be liable to the Recipient for any damage arising in any way out of the use of the Confidential Information and the Recipient shall not have any claim against the Jaypee Infratech Limited in relation to any information provided to the Recipient.
6. Nothing in this confidentiality undertaking shall have the effect of limiting or restricting any liability of the Recipient arising as a result of its fraud or willful default.
7. **Damages may not be an adequate remedy for a breach of this confidentiality undertaking and Jaypee Infratech Limited shall be entitled to the remedies of injunction, specific performance, other equitable relief for a threatened or actual breach of this confidentiality undertaking. The remedies herein provided shall be cumulative and not exclusive of any remedies provided by law available to Jaypee Infratech Limited.**
8. The Recipient hereby represents and warrants that it has the requisite power and authority to execute, deliver and perform its obligations under this confidentiality undertaking.
9. This confidentiality undertaking and any dispute, claim or obligation arising out of or in connection with it shall be governed by and construed in accordance with Indian laws and the courts and tribunals at Gautam Buddha Nagar, UP, shall have exclusive jurisdiction over matters arising out of or relating to this confidentiality undertaking;
10. This confidentiality undertaking shall become binding on the Recipient from the date hereinabove written.
11. The confidentiality undertaking shall be in addition to any other undertakings provided by the Recipient to Jaypee Infratech Limited.

Signed on behalf of

[Insert name]

by Mr/Ms _____

**(Name and Designation)
Authorised Signatory**

ANNEXURE 6 - NO DEVIATION CERTIFICATE

(To be provided by the bidder on its letterhead)

To,

**Jaypee Infratech Limited,
Contract Division, J Block,
Sector-128, Noida, UP
201304**

Reference: Request for Proposal dated [] bearing tender ref. no. [●] issued by Jaypee Infratech Limited

Subject: No Deviation Certificate

Dear Sir,

We [*name*] having our registered office at [*registered address*] do hereby certify and confirm that:

We have read and understood all the requirements including the Terms and Conditions of the RFP.

We certify that our offer is exactly in line with the RFP (including amendments) No. [●] dated [●].

We accept and undertake to comply with all the requirements including terms and conditions specified in the RFP under reference, unconditionally.

We certify that our Bid contains no deviation either Technical (including but not limited to Scope of Work, Specifications, etc) or Financial in either direct or indirect form. We hereby provide full and unconditional compliance to all clauses, sub-clauses, annexures and subsequent Corrigenda including but not limited to General Conditions of the Contract, Special Conditions of the Contract and Technical Specifications stated in the TFP.

We undertake to supply any additional component that may be required to fulfil the requirements and compliance with the RFP, in totality, and such additional components shall have no incremental impact on any commercial terms, time, Price & Cost to JIL.

This No Deviation Undertaking supersedes all deviations/observations/remarks/comments, if any, in our Bid, without any prejudice to JIL.

If any deviation is later observed in our Bid, the same shall stand withdrawn at no additional implication and impact.

(Authorized Signatory)

Signature:

Name:

Designation:

Seal & Date:

SECTION - III LETTER OF INTENT

Reference No.: [●]

Date: [●]

To,
Name: [●]

(as the "Successful Bidder", "You", "Your")

Address: [●]

Kind Attention: [●]

Sub: Declaration of the Successful Bidder

Ref:

1. Request for Proposal dated [●] bearing tender ref. no. [●] issued by Jaypee Infratech Limited

Dear Sir,

This is with reference to the bid submitted by [●] ("Successful Bidder") for inter alia construction works for the "Electrical Works for Multistoried Group Housing Project, "KASA ISLES", for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25) of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP)

in terms of the Tender Document.

We would like to inform you that the Bid submitted by You on [●] has been accepted and you have been selected as the Successful Bidder. Please see herein below the key acceptance terms:

1. You must unconditionally accept this Letter of Intent forthwith, and in any event within [●] days from the date of this Letter of Intent and record such acceptance by providing Jaypee Infratech Limited with 1 (one) copy of the Letter of Intent with an endorsement stating that "Accepted Unconditionally", under the signature of your authorized representative.
2. Along with the acceptance of this Letter of Intent, you shall provide us with all relevant information/ documents required by Jaypee Infratech Limited.
3. You shall execute the Contract comprising the Contract Agreement, General Conditions of Contract and Special Conditions of Contract, in the form and manner required by Jaypee Infratech Limited and shall obtain requisite statutory and regulatory and other corporate approvals within 30 (thirty) days from the date of acceptance of this Letter of Intent or such timelines as may be prescribed by Jaypee Infratech Limited.
4. You shall pay the entire payment as payable in terms of the Bidding Documents simultaneously with the execution of the Contract Agreement, and in any case within 30 (thirty) days of acceptance of this Letter of Intent or within such timelines as may be prescribed by Jaypee Infratech Limited.
5. All supporting documents submitted together with or in connection with the Bid shall be signed (including initials on each page), dated and adequately stamped (if the nature of the document requires it to be stamped under Indian law) by the representative/authorized

signatory of the Successful Bidder. Strict adherence to forms, documents, or authorizations wherever specified in the Letter of Intent, is required. Wherever information has been sought in specified forms/ documents / authorizations, the Successful Bidder shall not be permitted to submit any brochures, pamphlets or separate documentation.

6. Except with the prior written approval of Jaypee Infratech Limited, the Bid submitted by a Successful Bidder shall be final and binding, i.e. no changes shall be permitted to be made to the Bid submitted by the successful Bidder without the prior written approval of Jaypee Infratech Limited.
7. In case of any contravention or breach of the terms of this Letter of Intent and/or the Bid for any reason whatsoever, Jaypee Infratech Limited shall be entitled to exercise such remedies as it may deem fit under Applicable Law including but not limited to revoking this Letter of Intent, forfeiting all paid amounts, including the EMD, and reinitiating the bid process, at its sole discretion.
8. The interest-free earnest money deposit of INR 6,50,000/- (Rupees Six Lakh fifty Thousand only) ("**Earnest Money Deposit**") that has been deposited by you shall stand adjusted against the retention money payable under the Contract. Notwithstanding anything contained herein Jaypee Infratech Limited shall at its sole discretion, have a right to forfeit the Earnest Money Deposit, at any time, without making any reference to the Successful Bidder, and irrespective of any ongoing dispute or litigation, in case of any of the following conditions:
 - i. Any of the terms or conditions of the RFP, Bid Documents are breached or defaulted, in any manner, by the Successful Bidder; or
 - ii. Any wrongful / false disclosure or misrepresentation is made by Successful Bidder in any of the documents or undertakings submitted to Jaypee Infratech Limited; or
 - iii. Any information provided by Successful Bidder is incomplete, inaccurate or incorrect; or
 - iv. Non-receipt of any of the approvals as may be required within the timelines specified in the Bid Document and/or RFP; or
 - v. In case Successful Bidder for any reason whatsoever seeks to withdraw the Bid.
9. In case of any such forfeiture of the Earnest Money Deposit by Jaypee Infratech Limited the same shall not be adjusted against the amounts due and payable to Jaypee Infratech Limited by: (a) Successful Bidder in terms of the Bid; or (b) other amounts payable in relation thereto, in any manner, and Jaypee Infratech Limited shall be free to appropriate the same in a manner as may be decided by Jaypee Infratech Limited in its absolute discretion.
10. Any such forfeiture will not in any manner reduce the amounts payable or the actions/obligations of Successful Bidder under the Bid Document in the event the Bid is accepted by Jaypee Infratech Limited and upon such forfeiture additional amounts, if any, as may be required under the Bid shall be brought in by Successful Bidder.
11. Notwithstanding anything contained herein, any forfeiture of the Earnest Money Deposit by Jaypee Infratech Limited in terms of this Letter of Intent shall not limit and is in addition to any rights or remedies that Jaypee Infratech Limited may have under Applicable Law or otherwise, against Successful Bidder, and Jaypee Infratech Limited shall have an absolute and unqualified right to reject the Bid of Successful Bidder.
12. Notwithstanding anything contained herein, the issuance of this Letter of Intent shall not be deemed to grant any right against Jaypee Infratech Limited or its representative or any advisor, and no obligation or cost or risk shall be undertaken by Jaypee Infratech Limited or

their representative or advisor.

13. Notwithstanding anything contained herein, the issuance of this Letter of Intent shall not be deemed to grant any right, title or claim to the Successful Bidder in Jaypee Infratech Limited and this Letter of Intent shall not by itself grant you any right whatsoever against Jaypee Infratech Limited. Nothing contained in this Letter of Intent, shall affect the rights of the Jaypee Infratech Limited to reject the Bid submitted by You and in case the Bid is rejected, Jaypee Infratech Limited may at their absolute discretion call for submission of new bids from new bidders.
14. You shall keep the contents of this Letter of Intent, confidential, save and except where any disclosure is required under Applicable Laws to your shareholders, courts, tribunals, stock exchange, your advisors and your representatives (on a need-to-know basis), provided that any such disclosure shall be as per the Confidentiality Undertaking signed by you as part of Bid Process.
15. You shall be bound by all the terms and conditions specified under this Letter of Intent in and this Letter of Intent shall be read in conjunction with the Bid, RFP and other Bidding Documents and in case of any conflict provisions of this Letter of Intent shall prevail.
16. In case, any dispute, difference, or controversy of whatever nature howsoever arising under, out of or in relation to this LOI or any other documents executed among the Parties and so notified in writing by either Party to the other (the “**Dispute**”) in the first instance shall be attempted to be resolved amicably within a period of 30 days from the date the dispute arises.
17. In case the Dispute is not resolved amicably within the above said period, due to any reason whatsoever, it shall be decided by reference to arbitration by a sole arbitrator. The sole Arbitrator shall be appointed by JIL. The arbitration proceedings shall be held in accordance with the Arbitration and Conciliation Act, 2016 and amendments made thereto. The arbitration proceedings shall be conducted in the English language and under the Laws of India.
18. The arbitrator shall give a reasoned award. The award by the arbitrator, rendered in writing, shall be final and binding on the Parties. The fee and other expenses of the arbitrator and the arbitration expenses shall be shared equally among the Parties. The venue of such arbitration shall be Gautam Buddh Nagar, UP, India.
19. This Letter of Intent shall be governed by, and construed in accordance with, the laws of India and the courts of Gautam Buddh Nagar
20. , UP shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in

connection with this Letter of Intent.

Yours faithfully,

[*Signature of authorized representative*]
Jaypee Infratech Limited

[*Signature of authorized representative*]
Name of the Successful Bidder:
Date:
Place:

FORMAT FOR INDEMNITY BOND

(To be executed on a non-judicial stamp paper of Rs. 100/-)

Indemnity Bond

To,
Jaypee Infratech Limited,
Contract Division,
J Block, sector-128,
Noida- 201304 (UP)

THIS INDEMNITY executed this [●] day of [●], 2024 in favour of M/s Jaypee Infratech Limited, a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at Sector-128, Noida -201304, Uttar Pradesh (hereinafter referred to as the "JIL" or "Indemnified Party" which expression shall include its legal representatives, successors and assigns) of the one part; By M/s [●]. a company incorporated under the provisions of the Companies Act 1956/2013 and having its registered office at [●] (hereinafter referred to as the "Indemnifier" which expression shall include its legal representatives, successors and permitted assigns) of the other part.

WHEREAS JIL is desirous of constructing the Electrical Works for Multistoried Group Housing Project, "KASA ISLES", for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25) of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP)

AND WHEREAS the Indemnifier submitted a Bid for performance of the Works, pursuant to which JIL and the Indemnifier have entered into the Contract Agreement dated [●], along with various contracts and documentation for performance of the Works by the Indemnifier.

AND WHEREAS in consideration of being awarded the contract to carry out the Works, the Indemnifier has hereby agreed to indemnify JIL in the event the Indemnifier uses unfair means to obtain quality certification of work or materials.

NOW THEREFORE the Indemnifier provides the following indemnity in favour of JIL on terms hereunder stated:-

1. The Indemnifier hereby agrees to indemnify and keep indemnified and harmless JIL in the event that it has offered, or given or agreed to give to any government authority or to any manufacturer or to any supplier or to any affiliate, any person associated with, any person employed by JIL, or to any other person on behalf of any one of the aforesaid any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done any act in relation to the obtaining by unfair means, of the quality certification of any material or work executed or for getting excess measurements of work recorded with the objective of receiving more than due payment.
2. Further, in the event of occurrence of any incident as described in Clause 1, the Indemnifier agrees that it shall be in default and JIL shall have the absolute right to terminate the Contract Agreement and all related documents, without entitling the Indemnifier to any claim whatsoever. The termination notice, issued by JIL, under the hand of the Engineer-In-Charge, shall be conclusive evidence in this regard.
3. The Indemnifier hereby agrees to indemnify and keep indemnified and harmless JIL herein from time to time, and at all times hereafter against all losses, claims, demands, proceedings, expenses, costs and consequences whatsoever which JIL may sustain, incur

or suffer or be exposed to in connection with or in consequence of any act, deed, matter or thing whatsoever in any manner arising out of and/or relating to the Works.

4. The Indemnifier understands that it shall irrevocably and unconditionally fully indemnify and hold JIL (including its respective principal officers, directors, successors, assigns and employees) harmless on JIL's written demand for any and all claims, demands, liabilities, costs, interest, penalties, fines, cost relating to compounding, cost relating to prosecution.
5. The Indemnifier agrees, accepts and confirms in the premises aforesaid that:
 - a. That apart from the above, the Indemnifier shall indemnify the Indemnified party against all liabilities, costs, expenses, damages and losses (including but not limited to any interest, penalties and legal costs (calculate on a full indemnity basis) and all other professional costs and expenses) (collectively the 'Losses') suffered or incurred by the Indemnified party arising out of or in connection with:
 - i. Any breach of the representations, warranties, covenants and/or undertakings of the Indemnifier contained herein or in the contract documents;
 - ii. Any information or documentation submitted by the Indemnifier to JIL pursuant to this Indemnity Bond and/or the contract Documents, being untrue, incorrect or false;
 - iii. The Indemnifier's breach or negligent performance or non-performance of this Indemnity Bond;
 - iv. any claim made against the Indemnified Party for actual or alleged infringement of a Third Party's rights or damage caused to a third party arising out of or in connection the performance or non-performance of any of JIL's obligations under this Indemnity Bond to the extent that such claim arises out of the breach, negligent performance or failure or delay in performance of this Agreement by JIL, its employees, agents or contractors;
 - v. any Loss or Damages caused on account of breach of any Applicable Law by the Indemnifier, including without limitation any costs incurred by JIL in rectifying any damages caused by the Indemnifier on account of breach, negligent performance or failure or delay in performance of this Indemnity Bond or non-compliance with Applicable Law.
6. Any indemnifiable Claim under this Agreement must, be asserted by the Indemnified party by prompt delivery of written notice thereof to the Indemnifier, delivered within 60 (sixty) calendar days of discovery by the Indemnified party of the breach of the pertinent covenant or obligation of this Indemnity Bond, or of any misrepresentation or breach of any representation or warranty made by the Indemnifier. However, any delay on the part of an Indemnified Party in providing or failure to provide such notice will not relieve the Indemnifier of its indemnification obligations hereunder.
7. The remedies set forth herein shall be without prejudice to all the rights and remedies that the parties may have under the Applicable Law and shall not be the sole and exclusive remedies of the parties for any breach of this agreement or any matter relating to any representation, warranty, covenant or undertaking contained in this Indemnity Bond.

8. The Indemnity being these presents in favour of JIL shall remain valid and in full force and effect from the date hereof and shall accrue to JIL, its officials, employees and agents for all acts by the Indemnifier as set out in Clause 1.
9. This Indemnity Bond may be assigned by the Indemnifier only with the prior written approval of JIL.
10. Both the Parties shall keep this Indemnity Bond, its contents and its existence strictly confidential, and shall not disclose the same to any person, provided that they may disclose the same only in the following circumstances: (i) to their employees, directors, advisers and representatives on a need-to-know basis, and subject to such persons being bound by confidentiality obligations in this regard; or (ii) if required to be disclosed to a Governmental Authority pursuant to the provisions of Applicable Laws.
11. The Indemnity Bond is effective from the date of issuance of this Indemnity Bond by the Indemnifier and accepted by JIL. The indemnity obligations of the Indemnifier set out in this Indemnity Bond, shall remain valid till the completion of the Works.
12. This Indemnity Bond shall be governed under the laws of India, and any dispute arising out of or in connection with this Indemnity Bond shall be resolved through the dispute resolution mechanism set out in the General Conditions of Contract.
13. Any provisions of this Indemnity Bond which are prohibited or unenforceable by operation of Laws shall not invalidate the remaining provisions of this Indemnity Bond.

IN WITNESS WHEREOF the Indemnifier herein has set his/their/its hands and seal on the date, month and year above first written.

Delivered to JIL/ Indemnified Party at [●]

INDEMNIFIER

Date:

**Name:
Address:**

Witness

1. Name:

Address:

2. Name:

Address:

VOLUME II

(GCC, SCC, TECHNICAL SPECIFICATION)

Name of Work: Electrical work for the KASA ISLES", for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25) of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP)

Jaypee Infratech Limited

J Block, Sector 128, Noida - 201304



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SECTION -I

CONTRACT AGREEMENT

[TO BE EXECUTED ON STAMP PAPER OF APPROPRIATE VALUE]

CONTRACT AGREEMENT

This Contract Agreement is made at [●] on this [●] day of [●] 2024 (“**Execution Date**”) between **Jaypee Infratech Limited**, a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at Sector-128, Noida -201304, Uttar Pradesh (hereinafter referred to as the “**JIL**” which expression shall include its legal representatives, successors-in-interest and assigns) of the one part;

AND

M/s [●], a company incorporated under the provisions of the Companies Act 1956/2013 and having its registered office at [●] (hereinafter referred to as the “**Contractor**” which expression shall include its legal representatives, successors-in-interest and permitted assigns) of the other part.

WHEREAS JIL, is desirous of awarding the “Electrical work for the “KASA” for Towers KUB-1 to KUB-8 (2B+G+31) of Cluster B-29 at Jaypee Wish-Town, Sector-128, Noida (UP).” *inter alia*, in the interest of home buyers and with an objective to complete the construction of the Project to achieve the object of its approved resolution plan. Accordingly, JIL (under its new management control post approval of the Resolution Plan by the National Company Law Tribunal on 07.03.2023 and same was further confirmed and ratified/upheld by the National Company Law Appellate Tribunal vide its judgment dated 24.05.2024 which uphold the resolution plan and now there is no impediment in implementation of the Plan by the Successful Resolution Applicant) had floated Request for Proposal dated [●] (hereinafter “**RFP**” or “**Tender Documents**”) through its consultant namely Currie and Brown (India) Pvt. Ltd (appointed as Procurement Assistance Consultant).

AND WHEREAS JIL has floated the advertisement in various newspapers for the open tendering process and pursuant to which various Bids were received from various parties and the successful Bidder selected from among them to be the Contractor and carry out the Works in accordance with the Contract.

AND WHEREAS the Contractor has represented to JIL that it possesses the necessary skills, resources, manpower, labour, equipments, machines and experience to carry out the Works and had submitted its technical and financial offer to JIL to execute the Works.

AND WHEREAS, pursuant to discussion and negotiations, JIL has accepted the final offer of the Contractor (“**Bid**”) to execute the Works on mutually agreed terms and conditions, mentioned herein and in the Contract documents attached herewith.

NOW, THEREFORE, in consideration of the premises, and mutual covenants, hereinafter contained, this deed witnessed as under:

ARTICLE 1 - CONTRACT DOCUMENTS:

1.1. The Contract shall be performed strictly as per the terms and conditions stipulated herein and in the following documents which shall be deemed to form and be read and construed as part of this Contract:

Volume I- RFP Documents

Section I : Notice Inviting Tender (hereinafter “NIT”)

Section II : Instructions to Bidders (hereinafter “ITB”)

Section III : Letter of Intent along with the Earnest Money Deposit and Indemnity Bond

Volume II- Contract

Section I : Contract Agreement

Section II: General Conditions of Contract (hereinafter “GCC”) along with all Schedules, including the Performance Bank Guarantee and Advance Bank Guarantee

Section III : Special Conditions of Contract (hereinafter “SCC”)

Section IV: Technical Specifications

Volume III

Bill of Quantities (hereinafter “BOQ”)

- 1.2. The Contract (comprising Notice Inviting Tenders, Instructions to Bidders, this Contract Agreement, the General Conditions of Contract, the Schedules, technical specifications and the Special Conditions of Contract) constitute the full and complete understanding between the Parties about the terms of these presents. The Parties declare that in entering into the Contract they do not rely upon any previous correspondence and representations whether express or implied and whether written or oral or any inducement, understanding or agreement of any kind not included within the Contract and that all prior negotiations, discussions, representations and understandings, not included herein, stand annulled.
- 1.3. Any modifications or amendments to the Contract shall be affected only by a written instrument signed by the authorized representatives of both the Parties.

ARTICLE 2 - SCOPE OF WORK

- 2.1. The Scope of Work for the “Electrical work for the KASA ISLES”, for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25) of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP).”
- 2.2. and said Scope shall be complete in all respects as per BOQ and also all such items which are not specifically mentioned in the BOQ, but which are necessary for the satisfactory completion of the Work envisaged under this Contract unless otherwise specifically excluded.
- 2.3. The Contractor hereby covenants to perform faithfully all actions required to be performed and shall provide and furnish all the labour, materials, plants and equipment, required to perform and complete, in a workman like manner, all the work covered under the Contract in strict accordance with the drawings, Technical Specifications and conditions specified in the Contract documents in the stipulated time frame as mentioned in this Agreement. The Contractor shall take all necessary permissions/approvals including grants, consents, clearances, required to be obtained or maintained in connection to start/carry out the Contractor’s obligations of construction at site, as may be required from time to time, either in its own name or

in the name of JIL (as the case may be) under Applicable Laws or as per the specific / clear instructions given to the Contractor by JIL. The Contractor also covenants the timely remedying of the defects therein in conformity with the provisions of the Contract.

- 2.4. The Contractor shall adhere to all the requirements stipulated in Technical Specifications, approved by JIL.

ARTICLE 3 - TIME FOR COMPLETION

- 3.1. Time is the essence of this Contract.
- 3.2. This Contract shall come into full force and effect on the date on which the last of the following conditions are satisfied to the satisfaction of JIL (the “**Effective Date**”):
- (i) The Letter of Intent (“**LoI**”) has been signed by the Contractor and submitted to JIL;
 - (ii) The Contractor shall have furnished to JIL the performance bank guarantee of **3% (Three percent)** of the Contract Price in the format prescribed at Schedule 6 of the General Conditions of Contract (“**Performance Bank Guarantee**”); and
 - (iii) The Contractor shall have furnished to JIL the advance bank guarantee of **[●]%** (**[●]percent**) of the Contract Price in the format prescribed at Schedule - 7 of the General Conditions of Contract (“**Advance Payment Bank Guarantee**”).
- 3.3. JIL shall promptly confirm to the Contractor the date on which all the conditions set out at Article 3.2 have been satisfied. If any of the conditions have not been satisfied within 3 (three) days of the Execution Date, this Contract shall be void and ineffective and any amount paid, or any securities issued in relation to the Works, shall be returned to the Contractor, save and except for the Earnest Money Deposit which shall be retained by JIL and forfeited by the Contractor.

ARTICLE 3.1 - CONDITIONS PRECEDENTS AND MANDATORY OBLIGATIONS TO BE COMPLY, OBSERVE BY THE CONTRACTOR.

- 3.1.1 That at all times during the term / validity / existence of this Agreement, the Contractor shall maintain minimum of active / working labour of _____ in number at Project site. This strength of labour deployment may increase as per the instructions given to Contractor by JIL to achieve the timelines as agreed between the parties and as per the schedule for completing the development of the Project _____. The Contractor shall maintain its financial resources appropriately to meet the targets set by JIL without depending on payment clearance or any assistance from Company. The Contractor shall also ensure that adequate staff/labour including its site engineers etc. as agreed and stated in schedule shall be fully deputed at site. Further the Contract shall always keep the plant and machinery required for construction of the project at site. In no event the minimum labour, staff, engineer,

plant and machinery be less than the minimum schedule as agreed between the parties.

- 3.1.2 The Contractor shall maintain the quality of construction throughout the term of this Agreement for each and every work assigned as per the tender documents or as per the requirements of JIL.
- 3.1.3 As time is the essence of this agreement/contract and the project need to completed on or before the timelines as agreed between the parties herein, the Contractor undertake and agree to complete the work as per agreed timelines or monthly progress report. Further the amount of work to be done shall be as per the agreed schedule between the parties and the contract Running account bill shall also be as per the projected timelines and schedule agreed between the parties.
- 3.1.4 That performance of the Services / Discharging the duties by the Contractor is the essence of this Agreement, in case of any instance of non-performance, negligence of the Contractor/or its Personnel either due to shortage of minimum labour on site, shortage of staff, equipment, plant and machinery etc or due to slow work at site or not as per the agreed schedule of the amount of the work to be done, then, in all such or any event, the same will be considered as an event of default on part of the contractor, giving a right to JIL to terminate this Agreement forthwith or impose any monetary penalty / performance penalty/ liquidated damages upto 10 percent of the contracted value as per general or special condition of contract. In case of continuous default of non - compliance of any obligations for more than 3 occasions / or for 3 continuous / consecutive months, JIL have all rights to terminate the Agreement without taking any obligation to give notice and full and final payment will be processed only after taking the consideration of all events of non -performance by the Contractor during the period prior to the termination. The effects / consequences of such termination and rights and obligations of parties will be as per the tender documents or General or Special Conditions. Further the termination of the contract does not bar JIL to recover penalty or liquidated damages as per the contract.
- 3.1.5 That following documents also to be considered as part of the Contract, to be submitted by the Contractor from time to time and same to be approved by the JIL/EIC.
- a. Detailed Project completion schedule.
 - b. Detailed Equipment/Infrastructure/Resource Planning.
 - c. Manning Schedule (Skilled/Unskilled)
 - d. Cash Flow Diagram.
 - e. Organization Structure (Manager, Engineering and Support team for site)
 - f. Escalation Matrix with Contract Details
 - g. List of Makes along with technical details

h. Sub-Contractors details for specialized work

i. Mock-up approval

ARTICLE 4 - NO WAIVER OF RIGHTS

- 4.1. Neither the inspection of the Works by JIL or the Engineer-in-Charge or any of their officials, employees or agents; nor any order by JIL or the Engineer-in-Charge for payment of money; nor any payment for; nor acceptance of, the whole or any part of the Works by JIL or the Engineer-in-Charge; nor any extension of time; nor any possession taken by the Engineer-in-Charge of the Works, shall operate as waiver of any provisions of the Contract, or any power herein reserved, nor shall any waiver of any breach in the Contract be held to be a waiver of any other or subsequent breach.
- 4.2. Non-enforcement by either Party (JIL or Contractor) of any of the provisions of this Contract shall not operate as or constitute a waiver of the provision itself or any subsequent breach thereof.
- 4.3. The validity of the Contract shall not be affected, should one or more of its stipulations be or become legally invalid so long as such stipulation is severable from and is not fundamental to the obligations of either Party to this Contract. In such a case, the Parties shall negotiate in good faith to replace the invalid Article by a stipulation which is in accordance with the Applicable Laws and which shall be as close as possible to the original intent of the Parties.

ARTICLE 5 - CONTRACT PRICE

- 5.1. The Contract Price amounts to **INR [●] (*Indian Rupees [●] only*)** as per the BOQ annexed as Volume III hereof. Price adjustment, if any, shall be in accordance with the Special Conditions of Contract.

ARTICLE 6 - SETTLEMENT OF DISPUTES

- 6.1. It is specifically agreed by and between the Parties that all the differences or disputes arising out of the Contract or touching the subject matter of the Contract shall be decided as per Clause 16 of the General Conditions of Contract.

ARTICLE 7 - GOVERNING LAWS AND JURISDICTION:

- 7.1. This Contract shall be construed and interpreted in accordance with and governed by the laws of India. Subject to the arbitration provisions herein, the Courts at Gautam Budh Nagar, Uttar Pradesh shall have exclusive jurisdiction over all matters arising out of or relating to this Contract.

ARTICLE 8 - COMMUNICATION

- 8.1. Any notice or other communication to be given under this Contract shall be made in writing and may be delivered or sent by registered /speed post or [by Facsimile Delivery] /by e-mail followed by confirmation through registered /speed post against receipt at the following address or any other address as may be communicated in writing by the concerned Party:

To JIL:	Address:
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	Email: Attention: Fax:
To the Contractor:	Address: Email: Attention: Fax:

ARTICLE 9 - ACKNOWLEDGEMENT:

- 9.1. The Parties also place on record and confirm that they have executed this Contract voluntarily, of their own free will and accord without any sort of undue influence, pressure or coercion of any kind or description whatsoever from any person and that they have authenticated the same pursuant to review of the contents thereof with full understanding of the meaning, interpretation and implications of the various terms and conditions and negotiations of the terms.
- 9.2. In consideration of the payment to be made by JIL to the Contractor as hereinafter mentioned, the Contractor hereby covenants with JIL to execute, complete, remedy defects therein and maintain the works in conformity in all respects with the provisions of this Contract.
- 9.3. JIL hereby covenants to pay to the Contractor in consideration of the execution, completion, remedying of any defects therein and maintenance of the works, the contract price or such other sum as may become payable under the provisions of the contract at the time and in the manner prescribed by the Contract.

ARTICLE 10 - TERMINATION:

- 10.1. If during the validity of the Contract, it comes to the knowledge of JIL that the information given by the Contractor prior to entering this Contract is wrong/forged/fictitious or any material facts have been concealed, JIL reserves the right to reject any or all of the items offered by the Contractor or to treat this Contract as cancelled or terminated. JIL also reserves the right to take any other action permissible under Applicable Law and as agreed under this Contract.
- 10.2. The JIL reserves the right to terminate/foreclose the contract in full or part at any point of time before the expiry of this Contract by giving the Contractor 30 (thirty) days advance notice in writing, without assigning any reason, whatsoever.
- 10.3. If during the validity of the Contract, the tendering process is challenged before any court of law/ tribunal or any proceeding/investigation is initiated against the tendering process, in such circumstances JIL and/or its Board members/Directors or its Authorised Representative/ employees reserve the right to terminate the contract with immediate effect. Upon termination, the Contractor shall promptly but in any event not later than 15 (Fifteen) days suspend progress of part or all of the Works and

get the settlement of the account pro rata to the amount of work undertaken by the Contractor. The decision of JIL and/or its board members/Directors or its Authorised Representative/ employees shall be final and binding in this regard.

- 10.4. No claims of any nature whatsoever, made by any of the bidder, against any or all of JIL and/or its Board members/Directors or its Authorised Representative/ employees pursuant to actions taken by JIL shall be entertained.
- 10.5. JIL's right of termination under this Contract shall be in addition to the right of termination granted to JIL under the other Contract documents listed in Article 1.1. After termination of this Contract, first there shall be accounts reconciliation between the parties in sync with the performance / milestones achieved by the Contractor on date of termination intimation, the Contractor shall be under the contractual obligations to pay all damages and all other monies to JIL to its complete satisfaction. In addition, to this, Contractor also burdened to pay for all loss of business, additional costing and goodwill losses caused to JIL. JIL After termination, JIL is vested with all rights to appoint new Contractor on such terms and conditions as it deems fit and appropriate in its sole discretion. Further JIL shall also have a right to claim damages, penalty/ liquidated damages and initiate litigation and enforce other terms / claims on Contractor regarding its non and poor performance etc.

ARTICLE 11 - CONTRACTOR'S DECLARATIONS

- 11.1 It is made clear and agreed / consented by the Contractor, that notwithstanding anything contrary contained herein or in any contract / tender documents, or any other documents in no condition or under any circumstances after the execution of Tender Documents Contractor shall not claim any payments or any other monetary entitlements like damages, interest, compensation etc. on account of any idle charges. JIL shall always have the right to give the instruction/ direction to Contractor stop the work at site and same shall be binding on the Contractor. Further the said decision shall include all circumstances, which are unanticipated like any change in law or any judicial / administrative order for that prevalent time. The circumstances further include but not limited to any standing instructions/ direction given by JIL (without assigning any specific reasons to that effect) and same shall be binding on the Contractor debarring the Contractor from claiming any payments/idle charges/ delay/ penalty/ liquidated damages during which no construction activity is possible or to be carried out by the Contractor on account of instructions given to it.
- 11.2 That also, in circumstances and force majeure events like Pandemic, Lockdown, Natural Disaster, NGT restrictions, construction ban or any delay caused by the government authorities in granting necessary approvals/sanctions/permits affecting the regular construction activities and overall development of the real estate project, no payment shall be made to the Contractor and the Contractor undertakes not to claim any such idle charges/ damages/penalty etc. for the same period.
- 11.3 That consequent to above, the Contractor further agrees that on receiving any such instructions/ directions from the Company, Contractor shall stop the work and further agrees idle time period during which no construction activity was carryout at Project site shall be excluded from agreed completion time period and same shall be extended on same terms and conditions as contained in this document without any additional payments.

11.4 Further, under no circumstances whatsoever, the Contractor is vested with any legal rights to challenge or dispute the above conditions in any court of law. The Contractor undertakes to abide by these declarations as made herein above which is binding for the specific relevant time / under general or special circumstances as per instructions given by the Company or account of external factors including force majeure conditions.

INTERPRETATION

In this Contract Agreement words and expressions shall have the same meaning as are respectively assigned to them in the RFP, GCC and SCC and for any interpretation and superseding effect of documents for any inconsistencies, the SCC shall prevail over others

IN WITNESS WHEREOF, the Parties through their duly authorized representatives have executed these presents (execution whereof has been approved by the competent authorities of both the Parties) on the day, month and year first above mentioned.

For and on behalf of JIL

For and on behalf of the Contractor

Place:

Witnesses

1. Signature :

Name :

Address :

2. Signature :

Name :

Address :

SECTION - II

GENERAL CONDITIONS OF CONTRACT (GCC)

1 THE CONTRACT

1.1 Definitions

In the Contract (as defined below) the words and expressions defined below shall have the meanings assigned to them.

1.1.1. Documents

“Contract” means the documents forming the tender and acceptance thereof and the formal agreement executed between JIL and the Contractor with the documents referred to therein including NIT, the present General Conditions of Contract, the Special Conditions of Contract, the Contract Agreement, the Schedules, the Technical Specifications, the designs, the drawings and the instructions issued from time to time by the Engineer -in-Charge and all these documents / instructions taken together along with all such further documents as may be expressly incorporated in the Contract Agreement or these Conditions of Contract, shall deemed to form one contract and shall be complementary to one another.

“Contract Agreement” means the document entitled ‘Contract Agreement’ between Jaypee Infratech Limited and [●] dated [●].

“Contractor’s Documents” shall mean all documents issued by the Contractor to the Subcontractors, or documents submitted by those Subcontractors to the Contractor, or Project documents, which pertain to the execution of the Works under the Project.

“Contractor’s Organizational Chart” means the organizational chart included in the Technical Specifications.

“JIL’s Documents” shall mean all documents issued by JIL to other contractors, or documents submitted by those contractors to JIL, or Project documents, which pertain to the execution of the Works under the Project.

“Programme” means Contractor’s detailed schedule for performing the Works pursuant to Clause 3.15 Contractor’s preliminary Programme (Summary level) is set forth in Schedule 3.

“Progress Reports” means the monthly progress reports to be delivered by Contractor as set forth in Clause 3.16.

“Punch List” means the list submitted by Contractor and approved by Engineer-in-charge of items that are not completed as of the Taking Over Date. The items on such list shall be limited to completion of insulation, painting, final cleanup, final grading and any other portion of the Works which do not constitute Defects or Deficiencies, and which do not affect the operability, safety or mechanical integrity of the Works.

“Schedules” means the information and data identified as Schedules 1 to 8 of the General Conditions of Contract.

“Schedule of Payments” means the Schedule designated as such (if any)

referred to in Clause 11.5.

“Technical Specifications” means the description of the scope, standard, design criteria (if any) and programme of work as included in the Contract, and any Variations thereto.

1.1.2. **Persons**

“Affiliate” means a Person that directly or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, another Person. A Person “controls” any Person in which it has the power to vote, directly or indirectly, or holds five percent (5%) of the voting interest in such Person or, in the case of a partnership, if it is a general partner.

“Contractor” means the individual, firm, company, corporation, who enters into the Contract with JIL and shall include his heirs, his executors, administrators, legal successors in title or legal representative to such Person as the case may be.

“Contractor’s Representative” means the Person (if any) named as such in the Contract or other Person appointed from time to time by the Contractor. . It also mean and includes a person in supervisory capacity who shall be so declared by the Contractor and who shall be authorized under a duly executed power of attorney or authorization to comply the instructions and to receive the materials (if any) issued by the Engineer -in-Charge to the Contractor for works. He shall be capable of taking responsibility for proper execution of works.

“Engineer -in- Charge” or “EIC” shall mean any person(s) appointed as such from time to time by JIL to act on his behalf for the operation of Contract.

“Engineer-in-charge’s Representative” shall mean any person(s) nominated from time to time by the Engineer-in-charge to perform such duties as may be assigned to him /them.

“JIL” means Jaypee Infratech Limited and the legal successors in title to such Person, including any assignee of such Person.

“Engineer-in-charge” means such other Person appointed from time to time by JIL under Clause 2 and notified in writing as such to the Contractor.

“Party” means JIL or Contractor.

“Parties” means JIL and Contractor.

“Person” means any individual, corporation, company, partnership, joint venture, association, trust, unincorporated organization or Government Authority.

“Subcontractor” means any subcontractor of the Contractor, manufacturer or supplier for a part of the Works or any Person to whom a part of the Works has been subcontracted in accordance with Clause 3.7, and the legal successors in title to such Person, but not any assignee of such Person.

1.1.3. Dates, Times and Periods

“Final Acceptance Date” means the date after the Taking-Over Date when the Contractor has (a) delivered to JIL all final Construction Drawings, as-built drawings and manuals required under the Contract; (b) successfully completed the criteria specified in the Technical Specifications; (c) fully completed all of the Works, including any Punch List items in strict accordance with the Contract and free of Defects or Deficiencies; and (d) paid any liquidated damages for delay, as well as any other obligations then owed by Contractor to JIL, which date shall be the date acknowledged and stated by Engineer-in-charge in the Final Acceptance Certificate.

“Business Days” means any Day on which commercial banks are open for the conduct of business in India.

“Commencement Date” means the date on the Contractor proceeds to commence the Works.

“Completion Date” means the date of completion of Work as certified by JIL or by the Engineer-in-Charge or by Engineer-in-charge after the completion of Scheduled Taking Over Date.

“Contract Period” means the period from the date of receipt of the Advance Payment to the Taking-Over Date. The obligations of the Parties will extend beyond the Contract Period as further specified in this Contract.

“Day” means a calendar day and “year” means three hundred sixty-five (365) Days.

“Defect Liability Period (DLP)” shall mean a period of 12 months reckoned from the Taking Over Date for the Works.

“Effective Date” means the date, being not later than three days after the Execution Date, on which the conditions specified in Article 3.2 of the Contract Agreement have been satisfied.

“Execution Date” means the date of the Contract Agreement.

“Month” shall mean an English Calendar Month. The period from the beginning of a given date of a calendar month to the end of the preceding date of the next calendar month shall be taken as a ‘Month’.

“Scheduled Taking-Over Date” means the date which is ___ months after the date of receipt of the [advance payment/ acceptance of LOI].

“Taking-Over Date” means the date Contractor has successfully completed the criteria specified in the Technical Specifications up to parameters, which date shall be the date acknowledged and stated by Engineer-in-charge in the Taking-Over Certificate.

“Time for Completion” means the time permitted herein for achieving the Taking-Over Date and the Final Acceptance Date in accordance with Clause 6.2.

“Warranty Period” shall mean a period which will extend for [●] Days from the Taking-Over Date for the whole of the Works and for such extended period for the part of the Works that was replaced / repaired during the Warranty Period.

“Week” shall mean seven consecutive calendar days.

1.1.4. Tests and Completion

“Final Acceptance Certificate” means the Certificate issued by Engineer-in-charge under Clause 7.5.1 in the form set forth Schedule 4.

“Taking-Over Certificate” means a certificate issued under Clause 8.

“Tests on Completion” means the tests specified in the Contract and designated as such, and any other such tests as may be agreed by the Engineer-in-charge and the Contractor or instructed as a Variation, which are to be carried out before the Works are taken over by JIL. The Tests on Completion include, without limitation Performance Tests.

1.1.5. Money and Payments

“Contract Price” means the price stated in the Contract Agreement as payable to the Contractor for the execution and completion of the Works and it also includes the work undertaken by the Contractor in Defect Liability Period or in any extended period for remedying of any Defects or Deficiencies

“Cost” means all expenditure properly incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

“GST” shall mean Goods and Services Tax.

“Item Rate” shall mean the rate mentioned in the BOQ for each item.

“Indirect Taxes” means all forms of taxation, duties, fees, cess, deductions, levies and charges including (but without limitation) tax on sale or supply of goods, service tax, and which includes but not limited to goods and service tax, octroi, entry tax, residential and property tax, , excise duties or other similar imposts or amounts (but not including income tax, corporation profits tax, capital gains tax and other amounts corresponding thereto and interest, penalty or any other levy applicable on the income, profits, fringe benefits, personal taxes on salaries earned by employees) and shall include interest, surcharge, penalty or fine in connection therewith which may be payable on such transaction, property, matter mentioned above, in India;

“Provisional Sum” means a sum (if any) specified in the Contract and designated as such for the execution of any part of the Works or for the supply of machinery, Materials or services.

“Retention Money” means the accumulated retention monies retained by JIL under Clause 11.9.

“Taxes” means any tax, fee, levy, impost, interest, penalty or other sum levied under applicable Laws, customs duties and local taxes and any impost of like nature whatsoever and whenever charged, levied or imposed on the goods, materials, equipment and services incorporated in and forming part of the Works and on the transfer thereof.

“TDS” shall mean Tax Deducted at source.

1.1.6. Other Definitions

“Applicable Laws” means all laws, statutes, orders, treaties, ordinances, judgments, decrees, injunctions, writs and orders of any court, arbitrator or governmental agency or authority, in effect from time to time, which are applicable to; and rules, regulations, orders and interpretations of any governmental instrumentality or agency, court or other body having jurisdiction over; Contractor’s and Subcontractor’s obligations to be performed hereunder.

“Applicable Permits” means all authorizations, licenses, grants, consents, clearances, decrees, permits, waivers, privileges, approvals, leases, exemptions, filings, agreements, clearances, variances, orders, publications, notices, declarations or regulations (issued by any Government), required to be obtained or maintained in connection to start construction and carry out during the term of this Agreement as under Contractor’s obligations to be performed hereunder, as may be in effect from time to time, either in its own name or in the name of JIL (as the case may be) under Applicable Laws in accordance with this Contract and their maintenance, which time would include the Warranty Period as appropriate.

“Base Rate” of the material shall mean, landed price of material at Site excluding GST but including all transportation, freight / octroi and loading - unloading charges.

“BOQ” shall mean the “Bill of Quantities” included in the Contract and annexed hereto as Volume 3.

“Construction Documents” means all Construction Drawings, calculations, computer software (programs), samples, patterns, models, operation and maintenance manuals, and other manuals and information of a similar nature, to be submitted by the Contractor as required by the Technical Specifications.

“Construction Drawings” means all drawings provided by JIL through Design Consultant / Architect.

“Contractor’s Equipment” means all machinery, apparatus and other things (other than Temporary Works) required for the execution and completion of the Works and the remedying of any Defects or Deficiencies, but does not include Materials, or other things intended to form or forming part of the Permanent Works.

“Dangerous Substance” means any natural or artificial substance (whether in the form of solid, liquid or gas, alone or in combination with each other or any other substance) or radiation capable of causing harm to man or any other

living organism, or capable of damaging the environment or public health or welfare, including but not limited to, controlled, special, hazardous, toxic or dangerous waste, and whether or not subject to regulation, licensing or permitting under any Environmental Law, any Applicable Law or otherwise.

“Defects or Deficiencies” means, unless otherwise specifically stated and without limitation, any designs, engineering, Materials, Major Equipment, tools, supplies or installations which fail to conform to the Technical Specifications, the Construction Drawings or the warranties given hereunder or are of improper or inferior workmanship.

“Environmental Law” means statutes, laws, by-laws, regulations, directives, codes of practice, notifications, administrative and judicial orders or directives, codes of conduct, circulars, guidance notes and the like in effect.

“Government” shall mean the Government of Uttar Pradesh or Government of India, as the case may be.

“Governmental Authority” means a national, state, municipal, local, territorial, or other governmental department, commission, board, bureau, agency, regulatory authority, instrumentality, judicial or administrative body of the Government. Such Governmental Authority shall only include authorities that have jurisdiction over the Project / part of the Project.

“Intellectual Property Rights” shall mean any and all patents, utility models, design rights, author’s rights or copyright (including any rights in computer Software and program), database rights or topography rights (whether or not any of these are registered and including applications for registrations of any such thing) and any rights or forms of protection of a similar nature or having equivalent or similar effect to any of those which may subsist anywhere in the world.

“Material Adverse Effect” shall mean material adverse effect of any act or event on the ability of either Party to perform any of its obligations under the Contract.

“Materials” means things of all kinds (other than plant) to be provided and incorporated in the Permanent Works by the Contractor, including the supply-only items (if any), which are to be supplied by the Contractor as specified in the Contract.

“Plant and Equipment” shall mean all or any part of the machinery, equipment, vehicles, spares, tools, tackles, articles, construction- aids, and things of all kinds to be deployed by the Contractor for executing the Work and in connection with the performance of the Contract but does not include plant, material or other things intended to form or forming part of the Work.

“Permanent Works” means all those components defined in the Technical Specifications for the Project, including all related facilities located on, under or around the Site, taken as an integrated whole. Precisely, all the works which needs to be executed/completed /maintained in accordance with the Contract.

“Project” means the the “Electrical work for the ‘KASA ISLES”, for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25) of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP)

“Prudent Practices” means those practices, methods, techniques and standards, as updated from time to time and the exercise of that degree of skill, diligence and prudence that are generally accepted for use in construction industry in India, which would reasonably and ordinarily be expected from a skilled and experienced contractor.

“Site” means the places provided by JIL where the Works are to be executed, and any other places as may be specifically designated in the Contract as forming part of the Site. A plan of the Site is contained in the Technical Specifications.

“Temporary Work” means all temporary and enabling works of every kind required for the execution and completion of the works and the remedying of any defects therein.

“Variation” means any alteration and/or modification to the Technical Specifications, or any other work that is necessary for the fulfillment and/or completion of the Project, which is instructed by the Engineer-in-charge or approved as a Variation by the Engineer-in-charge, in accordance with Clause 10.

“Works” means the Permanent Works and the Temporary Works for all phases of the Contract, including engineering and design, procurement, manufacture, delivery, site clearance, civil works, construction and erection, civil structures, finishing, MEP, civil construction activities and services, cable trenches installation, overhead cable passage, poles, all construction of other civil structures, installation, demonstration and testing with respect to the Permanent Works and Temporary Works to be performed by the Contractor pursuant to the Contract. The term ‘Works’ includes all or partial portions of the Project, including labor, materials, equipment, machinery, tools, transportation, utilities, administration, and any other services or items to be used by the Contractor or its Subcontractors in the prosecution of the Contract, wherever the same are being performed, including any Variations under Clause 10.

1.2 Headings and Marginal Notes

The headings and marginal notes are not part of these Conditions and shall not be taken into consideration in their interpretation.

1.3 Interpretation

In this Contract, except where the context requires otherwise:

Words importing the singular also include the plural and vice versa where the context requires.

Words importing one gender also includes other genders.

Words importing persons or parties shall include firms and corporations and any organization having legal capacity.

Words have their normal usage under the language of the Contract, unless specifically defined. The language of the Contract and all correspondence, communications and submitted documents shall, except to the extent otherwise required under this Contract, be English. If this Contract or any other related documents are translated into another language, the English version shall prevail.

Reference to any statutory provision (including any secondary legislation) shall include such provision as modified, re-enacted or consolidated from time to time.

The words "hereof", "herein", "hereunder" and words of similar import when used shall refer to the Contract as a whole and not to any particular provision of the Contract.

Provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing; references to 'including', 'included', or "include" will be read as if followed by the words "without limitation".

If a period of time is specified from a given day or from the day of an act of event, it is to be calculated exclusive of that day.

A reference to an annexure, attachment or schedule is a reference to an annexure, attachment or schedule to this Contract, and a reference to this Contract includes an annexure, attachment or schedule; a reference to a clause or section is a reference to a clause or section of this Contract; a reference to a third person or a third party is a reference to a person who is not a party to this Contract; and any reference to a document is to that document as amended, varied or novated from time to time otherwise than in breach of this Contract or that document.

The *ejusdem generis* rule does not apply to this Contract. Accordingly, specific words indicating a type, class or category of thing do not restrict the meaning of general words following such specific words, such as general words introduced by the word **other** or a similar expression. Similarly, general words followed by specific words shall not be restricted in meaning to the type, class or category of thing indicated by such specific words.

No provision shall be interpreted in favour of, or against, any Party by reason of the extent to which such Party or its counsel participated in drafting hereof or by reason of the extent to which such provision is inconsistent with any prior draft hereof.

1.4 Law

The Contract shall be governed by and construed in accordance with the laws of India.

1.5 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. If there is an ambiguity or discrepancy in the documents, the Engineer-in-charge shall issue any necessary clarification or instruction to the Contractor, and the priority of the documents shall be as follows:

- i) The Contract Agreement including any Amendments thereto.
- ii) Letter of Intent (LOI)
- iii) Bill of Quantities (BOQ)
- iv) The Special Conditions of Contract
- v) The General Conditions of Contract, including any Variations thereto.
- vi) The Technical Specifications
- vii) The Construction Drawings
- viii) Relevant IS Code, CPWD Specifications.
- ix) Any other document / instructions forming part of the Contract as issued by JIL in contract period.
- x) For any interpretation and superseding effect of documents for any inconsistencies, the SCC shall prevail over others

1.6 Care and supply of documents

Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by JIL. Unless otherwise stated in the Contract, the Contractor shall supply to JIL six (6) copies of each of the Contractor's Documents, as requested by JIL.

The Contractor shall keep on the Site a copy of the Contract, publications named in JIL's Requirements, Contractor's Documents, Variations and other communications given under the Contract. JIL's Personnel shall have the right of access to all these documents at any reasonable time.

If a Party becomes aware of an error or defect of a technical nature in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.

Notwithstanding anything mentioned above, the Contractor shall hand over and deliver to JIL the Contractor's Documents with regard to the Works (including, in particular, developments, Standard IP's), which may include among other things all plans and documentation related to safety and environmental protection, engineering, Tests, exploitation, operation, inspection, maintenance and repair of the Works, studies, drawings, diagrams, plans, notices, technical documents, safety certificates and calculation notes related to the Works, as well as the exhaustive lists of spare parts or any other documents required by JIL.

1.7 Documents on Site

The Contractor shall keep on the Site one complete set of the documents forming the Contract, the Construction Documents, Variations, other communications given or issued. JIL, the Engineer-in-charge and assistants shall have the right to use such documents at all reasonable times. The JILship in such documents shall vested with JIL.

1.8 Construction Documents

The Construction Documents shall be in the custody and care of the Contractor. The Contractor shall provide a sufficient number / copies of Documents for the use of the Engineer-in-charge, or as specified in the Technical Specifications. The JILship in such documents shall be vested with JIL.

1.9 JIL's Use of Contractor's Documents

Copyright in the Construction Documents and other design documents made by or on behalf of the Contractor shall (as between the parties) remain the property of the Contractor. JIL may, at his cost, copy, use and communicate any such documents (including making and using modifications) for the purposes of completing, operating, maintaining, altering, adjusting, financing and repairing the Works.. JIL shall have the right to access the Contractor's Documents at all times. Contractor shall have no objection in case, JIL share/provide the Contractor's Documents with any other person, agency, authority as required or contractorincluding those who may come to replace and supersede the Contractor in case of its termination.

1.10 Contractor's Use of JIL's Documents

Copyright of the Technical Specifications and other documents issued by JIL or the Engineer-in-charge to the Contractor shall (as between the Parties) remain the property of JIL. The Contractor may, at his cost, copy, use and communicate any such documents for the purposes of the Contract. These shall not, without JIL's consent, be used, copied or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract. The Contractor shall have the right to access JIL's Documents at all times at JIL's office.

1.11 Confidentiality

Each Party undertakes to the other Party to keep confidential all information, howsoever provided, concerning the business and affairs of the other Party which it has obtained or received as a result of discussions leading up to entry into this Contract, or which it has obtained during the course of this Contract, except any information that is:

- i) subject to an obligation to disclose under applicable Laws, or that is required to be disclosed by any competent Government Instrumentality, by notice or otherwise; or
- ii) already in its possession, other than as a result of a breach of this Clause 1.11; or
- iii) in the public domain, other than as a result of a breach of this Clause 1.11 ,

Each Party undertakes to the other Party to take all steps that are necessary from time to time to ensure compliance with the provisions of this Clause 1.11 by its employees, agents, vendors and subcontractors. Prior to disclosing any information referred to in this Clause 1.11 in accordance with the exception granted in Clause 1.11 above, the disclosing Party shall notify and provide the other Party an opportunity to comment on the information in and manner of such disclosure. Neither Party may disclose any information referred to in but not subject to any exception under this Clause 1.11

without the prior written approval of the other Party.

Notwithstanding anything stated in this Clause 1.11, the Contractor shall at all times remain liable with respect to its obligations under this Clause 1.11 and any information/notification by the Contractor to JIL shall not in any manner affect, reduce or waive the obligation of the Contractor under this Clause 1.11.

1.12 Intellectual Property Rights

The Intellectual Property Rights in all the documents and the Designs & Drawings and other documents provided by JIL to the Contractor shall belong to JIL. The Contractor hereby assigns, transfers and passes-on all such Intellectual Property Rights to JIL and agrees to undertake all such steps as may be required under the Applicable Laws to complete such assignment and/ or transfer, at its own costs.

1.13 Compliance with Laws

The Contractor shall (and cause its employees, representative, agents and Subcontractors to) comply with all Applicable Laws, including those relating to labour, health and safety, and the environment, and shall give all notices, pay all taxes, cess, duties and fees and obtain and maintain all approvals, in each case as required by the Laws in relation to initiate construction, during the execution and completion of the Works and the remedying of any defects, and the Contractor shall indemnify and hold JIL harmless against and from the consequences of any failure to do so. The Contractor shall at all times during the term of the contract shall observe, duly compliant with all the applicable laws and regulations, related compliances including but not limited to environment, child labour, POSH and immune / indemnify JIL /Management/Board/Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc. All liabilities/ actions /prosecutions shall solely be attributed upon the Contractor. That whether, it has been specifically contained in the Tender Documents/Contract/in this GCC / SCC or not, the onus and consequences for breach of non - compliance/violation of any law, regulation, govt. order, authority, promulgation, legislative or judicial decision is solely meted out or attributable on the Contractor only. The Contractor shall remain keep JIL or its members/Board of JIL/EIC/Management of JIL/Employees harm-free from any claims, liabilities, criminal action or prosecution and all related consequences for any mishap, accidents, fire, mishappening etc. that occurred on project site resulting in the loss of man and property.

1.14 Severability

The provisions contained in each Clause of this Contract shall be enforceable independently of each of the others and their validity shall not be affected if any of the others are invalid.

1.15 Non-waiver

Any rights and remedies provided for in the Contract, in favour of JIL are cumulative and in addition to any further rights or remedies which may otherwise be available to JIL. Unless specifically stated in the Contract, any failure by JIL to enforce such rights

or remedies shall not be a waiver of such rights or remedies.

Any approval given by JIL shall not in any way either reduce, or relieve the Contractor of, its obligations under this Contract.

1.16 Notices

Wherever provision is made for the giving or issue of any notice, instruction, consent, approval, certificate or determination by any person, unless otherwise specified such communication shall be in writing and shall not be unreasonably withheld or delayed.

All certificates, notices or written orders to be given to the Contractor by JIL or the Engineer-in-charge, and all notices to be given to JIL or to the Engineer-in-charge by the Contractor, shall either be delivered by hand against written acknowledgment of receipt or be sent by registered mail, fax or e-mail, followed by registered mail. The addresses for the receipt of such communications shall be as follows:

to JIL at:	to Contractor at:
Address: [■]	Address: [■]
E-mail: [■]	Email: [■]
Attention: [■]	Attention: [■]

or at such other address or email address as such Party may have notified to the other Party in accordance with this Clause 1.16. Any notice or other document sent by post shall be sent by courier or prepaid first class recorded delivery post (if within India) or by prepaid airmail (if elsewhere).

Any notice or other formal communication shall be deemed to have been given:

- i) if delivered, at the time of actual delivery; or
- ii) if posted, at 10.00 a.m. on the second Business Day after it was put into post; or
- iii) if sent by email, on the date of transmission, if transmitted before 3.00 p.m. on any Business Day, and in any other case on the Business Day following the date of transmission.

In proving service of a notice or other formal communication, it shall be sufficient to prove:

- i) if delivered by post, that the envelope containing the communication was properly addressed and posted either by courier or prepaid first class recorded delivery post or by prepaid airmail; and
- ii) if sent by e-mail, when the sender receives an automated message confirming delivery (all electronic mail shall be followed by registered post or hand delivery).

This Clause shall not apply in relation to the service of any claim form, notice, order, judgment or other document relating to or in connection with any proceedings, suit or action arising out of or in connection with this Contract.

1.17 Counterparts

This Contract may be executed in any number of counterparts, whether signed originally or reproduced by facsimile, each of which shall be deemed to be an original, and all of which shall constitute one and the same instrument.

1.18 Joint Ventures and Consortiums

The Contractor shall at all times during the term of this Contract shall not enter into any agreement with any third party or incorporate any other company with any third party to form JV or Consortium for carrying out the awarded work under this present arrangement with JIL.

1.19 Rights of Assignment

Neither the Contract nor any right, privilege or delegation thereunder may be assigned or transferred in whole or in part by the Contractor without the prior written consent of JIL, and any attempted assignment or transfer without such written consent shall be void.

1.20 Documentation and Right of Audit

Where Contractor performs any work on a unit price, cost plus or time and material basis, Contractor shall prove the prices, expenses, costs etc. for the purpose of JIL's auditing and verifying.

The contractor shall provide JIL with the above-mentioned documents in computer readable format, if available, as well as an original hard copy. Engineer-in-charge shall have the right to reproduce any of the aforesaid documents, shall be allowed to interview any of the Contractor's employees and shall be provided adequate and appropriate workspace in order to conduct audits in compliance with this audit provision. Any adjustments and/or payments which must be made as a result of any such audit or inspection of the Contractor's invoices and/or records shall be made within a reasonable amount of time (not to exceed thirty (30) Days) from presentation of JIL's findings to Contractor. The contractor will not charge for its costs incurred with the audit.

2 JIL'S RIGHTS AND ENGINEER-IN-CHARGE**2.1 Engineer-in-charge's Duties and Authority**

2.1.1 The Engineer-in-charge shall carry out the duties specified in the Contract. The Engineer-in-charge shall have no authority to amend the Contract. The Engineer-in-charge may exercise the authority specified in or necessarily to be implied from the Contract.

2.1.2 Except as expressly stated in the Contract, the Engineer-in-charge shall have no authority to relieve the Contractor of any of his duties, obligations or responsibilities under the Contract. Any proposal, inspection, examination, testing, consent, approval or similar act by the Engineer-in-charge (including absence of disapproval) shall not relieve the Contractor from any duty, responsibility or obligation, including responsibility for his errors, omissions, discrepancies, and non-compliance with Clauses 3.32 and 3.33.

2.1.3 The Engineer-in-charge shall copy to JIL all communications given or received by him in accordance with the Contract.

2.2 Engineer-in-charges Authority to Delegate

2.2.1 The Engineer-in-charge may from time-to-time delegate any of his duties to assistants and may at any time revoke any such delegation. Any such delegation or revocation shall be in writing and shall not take effect until a copy has been delivered to JIL and the Contractor.

2.2.2 Any determination, instruction, inspection, examination, testing, consent, approval or similar act by any such assistant of the Engineer-in-charge in accordance with the delegation shall have the same effect as though it had been an act of the Engineer-in-charge. However:

- i) any failure to disapprove any machinery, Materials, design or workmanship shall not prejudice the right of the Engineer-in-charge to reject such machinery, Materials, design or workmanship.
- ii) if the Contractor questions any determination or instruction of an assistant of the Engineer-in-charge, the Contractor may refer the matter to the Engineer-in-charge who shall confirm, reverse or vary such determination or instruction.

2.3 Engineer-in-charge's Instructions

2.3.1 The Contractor shall comply with instructions given by the Engineer-in-charge in accordance with the Contract.

2.3.2 JIL may, from time to time, issue to the Contractor written instructions which may be necessary for the Contractor to perform its obligations under the Contract. Each instruction shall state the obligations to which it relates and the Clause (or other term of the Contract) in which the obligations are specified.

2.4 Engineer-in-charge to Attempt Agreement

2.4.1 When the Engineer-in-charge is required to determine value, Cost or extension of time, he shall consult with the Contractor in an endeavor to reach agreement. If agreement is not achieved, the Engineer-in-charge shall determine the matter subject to the right of either Party to seek recourse pursuant to Clause 16.

2.5 JIL's discretion

2.5.1 Whenever, under the Contract, the Engineer-in-charge is required to exercise discretion by: (a) giving a decision, opinion or consent; (b) expressing a satisfaction or approval; (c) determining value; or (d) otherwise taking action which may affect the rights and obligations of the Contractor or JIL, the Engineer-in-charge shall exercise such discretion fairly and reasonably within the terms of the Contract and having regard to all the circumstances.

2.6 Determinations

2.6.1 Whenever this Contract provides that JIL shall proceed in accordance with this Clause to agree or determine any matter, JIL shall consult with the Contractor in an endeavor

to reach agreement. If agreement is not achieved within a reasonable period of time, JIL shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances at its own sole discretion in overall best interest of the Project.

- 2.6.2 Without prejudice to the generality of sub-Clause 2.6.1 above, if JIL is required to make a fair determination of any adjustment of the Contract Price under this Clause 2.6, the increase or decrease in the Contract Price shall be valued at such value as JIL shall fix, in its opinion, as appropriate, and JIL shall notify the Contractor accordingly.
- 2.6.3 JIL shall give notice to the Contractor of each agreement or determination, with supporting particulars. Each Party shall give effect to each agreement or determination, unless the Contractor gives notice, to JIL, of his dissatisfaction with a determination within 7 (seven) days following receipt of the same, and in such situation either Party may then refer the Dispute for resolution in accordance with Clause 16.

2.7 JIL's Entitlement to Terminate

- 2.7.1 JIL shall be entitled to terminate the Contract at JIL's convenience at any time. In the event of such termination, the Contractor shall be paid by JIL in accordance with the cost provisions of Clause 15.4 and as per other provisions contained herein.
- 2.7.2 In the event that the tendering process is challenged at any Court (included Supreme Court of India) or any other forum, for any reason, whatsoever, and the whole tendering process is held null and void, JIL shall be entitled to terminate the Contract at any time without assigning any reasons whatsoever. The sole recourse available with the Contractor shall be settlement of account pro rata to the amount of work undertaken by the Contractor. The decision of JIL and/or its Board members or its Authorised Representative/ employees/Management/Director shall be final and binding in this regard.
- 2.7.3 No claims of any nature whatsoever, made by any of the bidder/Contractor, against any or all of JIL and/or its Board members / Directors/ Management or its Authorised Representative/ employees pursuant to actions taken by JIL, shall be entertained and in this regard and the successful bidder shall execute and furnish an undertaking in the JIL's format at the time of signing of the Contract.

2.8 JIL's Claims

- 2.8.1 If JIL considers itself to be entitled to any payment under any Clause of this Contract or otherwise in connection with the Contract, it shall give notice and particulars to the Contractor. However, notice is not required for payments due under Clause 3.2.1, or for other services requested by the Contractor. The notice shall be given as soon as practicable after JIL becomes aware of the event or circumstances giving rise to such claims.
- 2.8.2 The particulars shall specify the Clause or other basis of the claim and shall include substantiation of the amount to which JIL considers itself to be entitled in connection with the Contract. JIL shall then proceed in accordance with Clause 2.6 to agree or determine the amount (if any) which JIL is entitled to be paid by the Contractor.

- 2.8.3 JIL shall also have the right to deduct this amount from any moneys due, or to become due, to the Contractor under this Contract. JIL shall be entitled to set off against or make any deduction from any amount due to the Contractor, or to otherwise claim against the Contractor, in accordance with this Clause 2.7 or any other Contractor's obligations accruing in relation to provisions set out under this Contract as mutually agreed between the Parties.

3 CONTRACTOR

3.1 General Obligations

- 3.1.1 The Contractor shall perform or cause to be performed the Permanent Works and the Temporary Works for all phases of the Contract, including engineering and design, procurement, delivery, approvals, site clearance, civil works, construction and erection, installation, and testing of the Works and during the Contract period, and provide all labor, materials, equipment, machinery, tools, transportation, utilities, administration and other services or items required to complete the Works, all on a lump sum, fixed price, item rate basis, turnkey basis and otherwise in accordance with this Contract, including without limitation the Technical Specifications, and in compliance with all Applicable Laws and obtaining all approvals/Applicable Permits and generally recognized professional and industry standards (including Prudent Practices). JIL is relying upon the expertise and assurances of Contractor to complete the Project in accordance with the terms of this Contract. Contractor acknowledges JIL's reliance upon the expertise and assurances of Contractor as set forth in this Clause.
- 3.1.2 The Works as completed by the Contractor shall be wholly in accordance with the Contract and generally recognized professional and industry standards (including Prudent Practices) and fit for the purposes for which they are intended, as defined in the Contract. The Work shall include any work which is necessary to satisfy the Technical Specifications and Schedules, or is implied by the Contract, or arises from any obligation of the Contractor, and all works not mentioned in the Contract, but which may be inferred from the Contract to be necessary for stability or completion or the safe, reliable and efficient operation of the Works.
- 3.1.3 The Contractor shall execute and complete the Works, including providing Construction Documents, within the Time for Completion, and shall remedy any Defects or Deficiencies that may arise within the Warranty/Defect Liability Period or in any extended period.. However, save and except for warranty claims, in no event the time for remedying such Defects and Deficiencies extend beyond the time of handing over the Final Acceptance Certificate. The Contractor shall provide all superintendence, labor, machinery, Materials, Contractor's Equipment, Temporary Works and all other things, whether of a temporary or permanent nature, required in and for such design, execution, completion and remedying of Defects or Deficiencies. The Contractor shall prosecute the Works continuously and diligently and shall achieve the Taking-Over Date on or before the Scheduled Taking-Over Date, and thereafter achieve the final Acceptance Date as expeditiously as possible, but not later than 180 (one hundred and eighty) Days after the Taking-Over Date.
- 3.1.4 The contractor shall satisfy itself prior to the Execution Date regarding the design criteria (if any) included in the Technical Specifications and the accuracy of any setting-out points, lines and levels of reference specified in JIL's Requirements. The contractor

shall make no claim for additional compensation, extension of the Time for Completion, Variation or otherwise for any alleged error, fault or defect in the Technical Specifications.

- 3.1.5 If the Contractor discovers any errors, omission or discrepancy in the Contract or drawings or technical provisions or in the Work undertaken and performed by him, he shall immediately notify the EIC and the latter shall promptly verify and set right the same. The Contractor shall not take advantage of such errors or omissions or discrepancies. If even after detection of such errors or omissions and prior to the correction thereof, the Contractor proceeds with any Work affected thereby, he shall do so at his own risk and Work so done shall not be considered as Work done under the Contract and in performance thereof unless and until approved by the EIC.
- 3.1.6 The drawings and technical specifications are to be considered as explanatory to each other and should anything appear in the former but is not described in the latter, no advantage shall be taken by the Contractor of any such omissions. In case of disagreement between technical specifications and drawings, the drawings shall govern the Contract. Should any discrepancies, however, appear or should any misunderstandings as to the meaning and interpretation of the technical specifications or drawings or dimensions or the quality of the materials for the proper execution of the Work or as to the measurements of quantity and valuation of the Work executed arise under this Contract or in respect of extra item, the same shall be clarified by EIC/JIL. The decision of the EIC/JIL regarding the true intent and meaning of the drawings and specifications shall be final and binding.
- 3.1.7 Except where otherwise specified in the Contract, the decision of the Engineer-in-Charge as to the quality of workmanship or materials used on the Work, or as to any other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the Contract documents, designs, drawings, specifications, estimates, instructions, or conditions, or otherwise concerning the Work or the execution or failure to execute the same whether arising during the progress of the Work or after the completion or abandonment of the Contract by the Contractor shall be final conclusive and binding on the Contractor.
- 3.1.8 Any error in description, quantity or price in the BOQ or any omission there from shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of Work comprised therein according to drawings and specifications or from any of his obligations under the Contract.
- 3.1.9 It shall be the Contractor's responsibility to satisfy himself before signing the Contract that the unit rates mentioned in the BOQ have been correctly recorded and the amount of each item as obtained by multiplying the quantity thereof with its rates and also the Contract Price have been correctly worked out. In any case, the Contractor shall, at no stage, be entitled to draw any advantage from such an error occurring in the BOQ.
- 3.1.10 Base Rate shall include the basic cost of material (excluding GST, Contractor's profit, overheads), transportation, octroy, royalties and any other related expenses. This shall be the rate used for making deductions from Contractor's bills in case JIL decides to procure / supply the material. Base rate does not include wastage. Increase or decrease in specified base rate of materials as mentioned in BOQ for incorporation in a quoted rate of an item of work with wastage shall be accounted for in the payment of the item of the related work only to the extent of the increase/decrease in the base rate

(excluding GST but including all other taxes duties, freight etc.) without any other additional cost. Wastage shall be included in Item rate. Further in case any material is not available at the base price, the same shall be informed in writing to JIL and only after written permission from JIL, the Contractor shall procure / purchase such material. To ascertain the current Base Rates of the items procured, a proper GST invoice shall be submitted by the Contractor. The difference (in + / -) of basic rate and actual procurement rate will be reimbursed / recovered to / from the contractor on producing the bill of such item purchased by the Contractor. Wherever vendors and rates negotiated and finalized by JIL for Base Rate items covered in the BOQ, such items shall be purchased by the Contractor from vendors only at finalized rates unless otherwise approved by JIL.

Failure by the Contractor to have done all the things which in accordance with this condition he is deemed to have done shall not relieve the Contractor of the responsibility for satisfactorily completing the Work, as required, at the rates quoted by him.

The Contractor shall take full responsibility for the adequacy, stability and safety of all Site operations, of all means and methods of construction and of all the Works, irrespective of any approval or consent or the lack thereof by the Engineer-in-charge. This also includes safety, security and conduct of the laborers, manpower along with the safety and security of Equipment, Plant & Machinery at Project site. The Contractor further indemnifies JIL and its representative, Board, employees etc from all such liability.

The Contractor undertakes in the work stops for any reasons whatsoever it shall raise no claim for idle labour or charges for plant, machinery and equipments at any point of time nor shall raise any claim or dispute on account of delay in the completion of the work except extension of time which may be granted to the Contractor on request to be submitted to the EIC without any extra cost. The said provisions shall be squarely applicable on account of any judicial/ administrative or legislative order like construction ban imposed by NGT etc.

3.2 Representations and Warranties of the Contractor

3.2.1 The Contractor makes the following representations and warranties to JIL on the Execution Date, which representations and warranties are true and complete and not misleading in any respects, and, which representations and warranties shall continue to be true and complete and not misleading in any respects at all times during the validity of this Contract:

- i) it has the full power and authority to enter into, execute and deliver this Contract to which it is a party and to perform its obligations hereunder.
- ii) it is duly incorporated or organised with limited liability and existing under the laws of India.
- iii) the execution and of this Contract and the performance by the Contractor has been duly authorised by all necessary corporate or other action and shall not contravene or breach any provision of its constitutional documents or Applicable Law;

- iv) the Contract constitutes a legal, valid and binding obligation of the Contractor, enforceable against the Contractor in accordance with its terms; and
- v) it is solvent and no winding up proceedings, corporate insolvency resolution process or liquidation proceedings have been filed or commenced against it, and no order has been made, petition admitted, resolution passed, or meeting convened for its winding up, corporate insolvency resolution process or liquidation.
- vi) It is not in contravention of any Applicable Laws, which contravention would have an adverse effect on the Works or any Applicable Permits held by it in relation to the Works. Further, it has not violated any intellectual property right related laws, rules and regulations, nor has it infringed intellectual property rights of any third party.
- vii) It is not blacklisted by any public limited company or has not abandoned the previously awarded work by any company or concerns.
- viii) That during the term and validity of the contract or thereafter, it will not claim any right, interest, possession on the Project Site or on any structures thereon and on the assets lying there which are owned and provided by JIL.
- ix) It has all adequate / sufficient resources (financial etc.), skills, laborers/manpower to complete the awarded work in an agreed time

3.3 Performance Security

- 3.3.1 As a performance security for Contractor's obligations under the Contract, Contractor shall have provided JIL with a Performance Bank Guarantee from a nationalized or scheduled bank.
- 3.3.2 The Contractor shall deliver the Performance Bank Guarantee to JIL in accordance with Article 3.2 of the Contract. The Contractor shall ensure that the aforementioned Performance Bank Guarantee remains valid and enforceable until the Final Acceptance Certificate has been granted by JIL to the Contractor.
- 3.3.3 The Performance Bank Guarantee shall be in the form annexed hereto as Schedule 6 of GCC.
- 3.3.4 JIL shall not make any claim under the Performance Bank Guarantee, except in cases which are set out below:
 - i) failure by the Contractor to keep the Performance Bank Guarantee valid for the period until the Final Acceptance Certificate is not obtained by the Contractor, in which event JIL may claim the full amount (or, in case of previous reduction, the full remaining amount) of the Performance Bank Guarantee.
 - ii) failure by the Contractor to pay JIL an amount due as agreed or determined or, if such amounts are disputed, as agreed or decided under Clause 16, within 30 (thirty) days after the date of the agreement or determination or decision or arbitral award (as the case may be); or
 - iii) failure by the Contractor to remedy a default stated in Notice given under

Clause 12.1 within 30 (thirty) days or the other time (if any) stated in the Notice

- iv) failure by contractor to comply with standing instructions given by EIC/JIL regarding improving its performance by deploying more labourers, manpower, quality of work or achieve the work as per programme or time schedule etc.

3.3.5 JIL shall return the Performance Bank Guarantee to the Contractor, on the earlier of the following:

- i) At the time of issuing the Final Acceptance Certificate after adjusting the dues, if any;
- ii) Promptly after and no later than 30 (thirty) days from the date of termination of Contract, where the Contract is terminated in accordance with Sub-Clause 12.4.1); or Sub-Clause 15.4; and
- iii) Promptly after and no later than 30 (thirty) days from the date of payment made to JIL in accordance with Sub-Clause 12.3 in case the Contract is terminated as per Clause 12.4 (*Termination*).

For avoidance of doubt, the cost of design, execution, completion and remedying of any Defects or Deficiencies, liquidated damages for delay in competition (if any) and all other costs incurred by JIL shall have been established and paid in full in accordance with Sub-Clause 12.3.

3.4 Contractor's Representative

3.4.1 Unless the Contractor's Representative is named in the Contract, the Contractor shall, within fourteen (14) Days of the Execution Date, submit to the Engineer-in-charge for consent the name and particulars of the Person the Contractor proposes to appoint. The Contractor shall not revoke the appointment of the Contractor's Representative without the prior consent of the Engineer-in-charge.

3.4.2 The Contractor's Representative shall be a full-time employee of the Contractor dedicated to directing the preparation of the Construction Documents and the execution of the Works. Except as otherwise stated in the Contract, the Contractor's Representative shall receive (on behalf of the Contractor) all notices, instructions, consents, approvals, certificates, determinations and other communications under the Contract. Whenever the Contractor's Representative is to be absent, a suitable replacement person shall be appointed, and the Engineer-in-charge shall be notified accordingly. JIL will have the right to approve those individuals who will hold key project positions such as Project Manager, Construction Manager, Project Engineer and project discipline heads, quality assurance and safety coordinator, and any other key Project personnel employed by Contractor. JIL shall have the right at all times to require that any personnel (whether or not previously approved by JIL) be removed and replaced by personnel acceptable to JIL for reasons to be stated in writing.

3.4.3 Subject to the written consent of Engineer-in-charge, the Contractor's Representative

may delegate any of his powers, functions and authorities to any competent person, and may at any time revoke any such delegation. Any such delegation or revocation shall be in writing and shall not take effect until the Engineer-in-charge has received prior notice signed by the Contractor's Representative, specifying the powers, functions and authorities being delegated or revoked. The Contractor's Representative and such persons shall be fluent in the language, written and verbal, for day-to-day communications.

3.5 Coordination of the Works

3.5.1 The Contractor shall be responsible for the coordination and proper execution of the Works, including coordination with other contractors to the extent specified in the Technical Specifications. The Contractor shall, as specified in the Technical Specifications, afford all reasonable opportunities for carrying out their work to:

- i) any other contractors employed by JIL and their workmen;
- ii) the workmen of JIL; and
- iii) the workmen of any legally constituted public authorities who may be employed in the execution on or near the Site of any work not included in the Contract, which JIL may require.

3.5.2 The Contractor shall obtain, coordinate and submit to the Engineer-in-charge for his information all details (including details of work to be carried out off the Site) from Subcontractors and suppliers, including unpriced copies of subcontracts for Major Equipment. The Contractor shall be responsible for the locations of their work or materials, in order to ensure that there is no conflict with the work of other Subcontractors, the Contractor or other contractors.

3.6 Compliance with Statutes, Regulations and Applicable Laws

3.6.1 The Contractor shall, in all matters arising in the performance of the Contract, comply with all the provisions of any national or local statute, ordinance, decree or other law, or any regulation, decree or decision of any legally constituted public authority having jurisdiction over the Works, including all Applicable Laws including but not limited to environmental, labour laws etc. and Applicable Permits. All permits, licenses, or approvals required to be obtained by the Contractor for starting the construction and carrying out the work till completion of project shall be obtained by the Contractor at its own cost and in its own account. Contractor shall obtain all the permits, licenses, authorizations, consents, decrees, waivers, privileges or approvals required for any part of the Works, in a reasonable time for completion of the Works. In the event it is subsequently discovered that additional permits or consents are required to be obtained, Contractor assumes full responsibility for any additional cost that is incurred as a result of the requirement to obtain such additional permits or consents. The Contractor shall comply with the laws of India. Neither Contractor nor any of its Affiliates or their respective directors, officers, shareholders, employees or agents shall make or offer, in respect of the performance of the Works, any loan, gift or other payment, directly or indirectly, whether in cash or in kind. JIL is harmless from any and all liabilities, costs, penalties, fines, and attorney's fees, costs associated with any such violations. Contractor shall cause each of its Subcontractors to comply with the provisions of this Clause. All variations/works suggested by JIL/corrections shall be

done by the Contractor at no additional cost.

3.6.2 The Contractor shall comply with the latest version of, inter alia, the following labour and industrial laws, rules, regulations, orders etc. of various authorities duly updated and any new and existing laws, rules, regulations, orders etc. not listed below but relevant to the execution of works under this contract:

- i) Payment of Wages Act 1936
- ii) Minimum Wages Act 1948
- iii) Employees Liabilities Act 1938
- iv) Industrial Disputes Act 1947
- v) Maternity Benefits Act 1961
- vi) Contract Labour(R&A) Act 1970
- vii) Workmen's Compensation Act 1923
- viii) Contract Labour(R&A) Central Rule 1971
- ix) Child Labour (Prohibition & Regulation) Act 1986
- x) Environmental Laws
- xi) Building and other construction workers (Regulation of Employment & Condition of Service Act 1996
- xii) Building & Other Construction Welfare Cess Act 1996
- xiii) Industrial Employment Act 1946.
- xiv) Personal Injuries (Compensation Insurance Act)
- xv) Payment of Bonus Act 1965.
- xvi) UP Contract Labour (R&A) Rules 1975.
- xvii) Provident Fund Act.
- xviii) C.P.W.D Safety Code
- xix) National Building Code as applicable from time to time
- xx) Regulations and byelaws of the New Okhla Industrial Development Authority/Greater Noida Industrial Development Authority/ Yamuna Expressway Industrial Development Authority as the case may / or as applicable on the project.

3.6.3 The Contractor shall furnish to JIL promptly upon request such information which JIL is required in compliance with Applicable Laws, to any relevant Governmental Authority with regard to Contractor's employees, servants and agents.

- 3.6.4 If the Contractor at any time becomes aware, whether as a result of notice from JIL or otherwise, of any Applicable Permit not obtained by it, the Contractor shall promptly obtain such Applicable Permit at its cost and expense and provide the same, to JIL.
- 3.6.5 **In case of any non-compliance of any applicable law / statute/ rule/ regulations/promulgations/ ordinances/govt. orders etc. all liabilities/ actions /prosecutions shall solely be attributed upon the Contractor. The Contractor shall indemnify JIL/Management/Board/Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc. The same is also applicable in case of any accident, mishappening and untoward event occurred at the Project Site.**
- 3.6.6 The Contractor will act and make all filings, submissions, reporting, etc., at all times in accordance with Applicable Laws, Applicable Permits and Prudent Practices and in such a manner that JIL remains in compliance of the Applicable Laws. The Contractor will not engage in any act, commission or omission, which may impact on the JIL's rights, interests or remedies, under the Applicable Laws, Applicable Permits or otherwise. The Contractor will indemnify JIL in defending all the notices, claims, demands, suits, etc. as may be raised by any Government or any third party against JIL, which may be in deviation of the above representation made by the Contractor, solely at its own cost and risk.

3.7 Subcontractors

- 3.7.1 The Contractor shall not assign or subcontract the whole of the Works or any part thereof, or any benefit or interest therein or thereunder without first taking a prior written consent from JIL. Unless otherwise stated in this Contract:
- i) the Contractor shall not be required to obtain consent for purchases of Materials or for subcontracts for which the Subcontractor is named in the Contract or identified in the Subcontractor List or as agreed between the parties. ;
 - ii) the prior consent of the Engineer-in-charge shall be obtained to other proposed Subcontractors not set forth in subparagraph (i) above, which consent shall not be unreasonably withheld and shall be given by the Engineer-in-charge to the Contractor within 10 (ten) days of the suggestion of the name of such proposed Subcontractor; and
 - iii) However, in any of the situations cited above, the decision of JIL shall be the final.
- 3.7.2 The Contractor shall be responsible for observance by all Subcontractors of all the provisions of the Contract. The Contractor shall be responsible for the acts or defaults of any Subcontractor, his agents or employees, as fully as if they were the acts or defaults of the Contractor, his agents or employees. Any subcontracting by Contractor of any portion of the Works shall not release or discharge Contractor of any of its responsibilities or obligations under the Contract. Any Subcontractor warranties extending beyond the Warranty Period (or any longer applicable period agreed to by the Contractor) shall automatically be assigned to JIL.
- 3.7.3 The Contractor shall also be held responsible for the due/noncompliance by its subcontractors with all Applicable Laws and Applicable Permits.

- 3.7.4 Contractor agrees to incorporate into each subcontract agreement terms and conditions substantially equivalent to those in this Contract. All subcontract agreements and purchase orders shall contain a provision, in a form satisfactory to JIL, providing for assignment of such subcontracts or purchase orders to JIL in the event of termination of the Contractor's employment pursuant to the terms of Clause 12.2 hereof. Such assignment will be at the discretion of JIL, in accordance with the terms of Clause 3.8, and at no cost to JIL.
- 3.7.5 Any failure to comply with these obligations may result in the non-payment of the part(s) of the Works and/or machinery and Equipment achieved in such conditions, without prejudice of any claim for the damages suffered by JIL in connection therewith. All relevant registration, business license certificates or any other legal or statutory requirement shall be obtained and evidenced by the Contractor and all subcontractors throughout the performance of each Contract.
- 3.7.6 The Contractor's liability under the concerned Contract cannot be altered by the fact that goods, materials, services and/or tools provided by JIL or JIL's subcontractors have been lent, performed, provided and/or installed by JIL or such subcontractors. The Contractor shall supervise the appropriate implementation and/or incorporation of said materials, services or tools and check that applicable requirements have been duly and properly met. The Contractor shall notify without undue delay to JIL and as the case may be the concerned subcontractor(s), all defects or problems relating to such supplies. In any case, JIL shall not be liable for any mistake, omission or incorrect performance resulting from insufficient, wrong and/or inappropriate Contractor's supervision, check and/or instructions.
- 3.7.7 Any consent for sub-contracting shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any Sub-Contractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents, servants, workmen.

3.8 Assignment of Subcontractor's Obligations

- 3.8.1 If a Subcontractor has undertaken a continuing and assignable obligation to the Contractor for work designed or executed, or machinery, Materials or services supplied, by such Subcontractor, and if such obligation extends beyond the expiry of the Warranty Period, the Contractor shall, upon the expiry of the Warranty Period, assign the benefit of such obligation to JIL for its unexpired duration at the request of JIL. The Contractor, in entering into any subcontracts, shall ensure that all such obligations are capable of being assigned to JIL.

3.9 Setting Out

- 3.9.1 The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Technical Specifications or, if not specified, given by the Engineer-in-charge in writing. The Contractor shall correct, at his cost, any error in the positions, levels, dimensions or alignment of the Works.

3.10 Quality Assurance/Quality Control (QA/QC)

- 3.10.1 Unless otherwise stated in this Contract, the Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract.

Such system shall be in accordance with the details stated in the Contract including, without limitation, in the Technical Specifications. Compliance with the quality assurance system shall not relieve the Contractor of his duties, obligations or responsibilities.

- 3.10.2 Subject to the more particular requirements of the Technical Specifications, details of all QA/QC procedures and compliance documents shall be submitted to the Engineer-in-charge for his information before each design and execution stage is commenced. When any QA/QC document is issued to the Engineer-in-charge, it shall be accompanied by the signed quality statements for such document, in accordance with the details stated in the Contract. The Engineer-in-charge shall be entitled to audit any aspect of the system and require corrective action to be taken.

3.11 Site Data

- 3.11.1 JIL shall have made available to the Contractor prior to the Execution Date, the data available to JIL on hydrological and sub-surface conditions at, under and around the Site, and studies on environmental impact which may have been obtained by or on behalf of JIL from investigations for the Works. The Contractor shall be solely responsible for interpreting all data, and JIL makes no warranty or representation that the information described is complete or exhaustive.

- 3.11.2 The Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have satisfied himself prior to the Execution Date as to:

- i) the form and nature of the Site, including all surface and sub-surface conditions.
- ii) all applicable the hydrological and climatic conditions, including those of the Site;
- iii) the extent and nature of the work, labor, manpower, services, construction equipment and Materials necessary for the execution and completion of the Works, and the remedying of any Defects or Deficiencies; and
- iv) the means of access to the Site and the accommodation he may require.

- 3.11.3 The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and all other circumstances, which may influence or affect the Contract Price or the Programme.

- 3.11.4 Contractor warrants that it has thoroughly investigated the Site, including any applicable easements, water sources, access to the Site, transportation, local labor conditions, all Applicable Laws and Applicable Permits, the Technical Specifications identified any and all above ground and below ground obstructions, and all other relevant matters or conditions that could affect execution of the Works, and warrants that Contractor shall not be entitled to and shall make no claim for additional compensation, extension of the Time for Completion, Variation or otherwise, for any reason relating to any of the foregoing matters or for any matter relating to conditions encountered above, below, on or at the Site or on the ground of any allegation or fact that incorrect or insufficient information was given to him by JIL or any other person, whether in the employ of JIL or otherwise.

3.12 Matters Affecting the Extension of the Work

3.12.1 The Contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the Contract Price. Unless otherwise stated in the Contract, the Contract Price shall cover all his obligations under the Contract and all things necessary for the proper design, execution and completion of the Works and the remedying of any Defects or Deficiencies as required by the Contract.

3.13 Access Route

3.13.1 The Contractor shall be deemed to have satisfied himself as to the suitability and availability of the access routes he chooses to use. The Contractor shall (as between the parties) be responsible for the repair of access routes damaged by Contractor or his Subcontractors. The Contractor shall provide any signs or directions, which he may consider necessary for the guidance of his staff, labor and others. The Contractor shall with the co-operation of JIL obtain any permission that may be required from any Governmental Authority for the use of such routes, signs and directions.

3.13.2 JIL will not be responsible for any claims which may arise from the use or otherwise of any access route. JIL does not guarantee the suitability or availability of any particular access route, and the Contractor shall not be entitled to claim any Variation for any non-suitability or non-availability for continuous use during construction of any such route.

3.14 Rights of Way and Facilities

3.14.1 The Contractor shall not be obligated for procuring or paying for those easements for Site access identified in the Technical Specifications. The Contractor shall provide, at his own cost, any additional facilities outside the Site required by him for the purposes of the Works and any easements or right-of-way required from the same. JIL shall cooperate in obtaining necessary permits and approvals for such Right-of-Way and /or Facilities.

3.15 Programme

3.15.1 The Contractor shall submit a final Programme to the Engineer-in-charge, for information, within [●] Days after the acceptance of LOI. The Programme shall be in a level of detail reasonably acceptable to Engineer-in-charge, shall not deviate from the durations and milestones established in the preliminary Programme set out in and shall be in accordance with the requirements of the Technical Specifications. The final Programme shall include the following:

- i) the order in which the Contractor proposes to carry out the Works (including each stage of design, procurement, manufacture, delivery to Site, construction, erection, and the Tests on Completion);
- ii) the times when submissions and approvals or consents by Engineer-in-charge are required, as indicated in the Technical Specifications; and
- iii) the sequence of Tests on Completion, including the submission of proposed procedures for the conduct of each activity.

3.15.2 The Programme shall include all major events and activities in the production of

Construction Documents and the periods for the pre-construction reviews. Unless otherwise stated in the Contract, the Programme shall be developed using Critical Path Method (CPM) and precedence networking techniques, showing early start, late start, early finish and late finish dates. The programme given by Contractor and duly accepted by JIL shall be annexed and marked as Schedule/Annexure _____.

- 3.15.3 The Contractor shall, whenever required by the Engineer-in-charge, provide in writing, for information, a general description of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to the Programme, or to such arrangements and methods, shall be made without informing the Engineer-in-charge/JIL and any alterations made shall reflect the requirement for coordination of the Works with the actions and obligations of JIL and the Works to be carried out by other contractors of JIL pertaining to the Project. If any alteration affects any such actions, obligations or Works, it shall not be made without the prior approval of the Engineer-in-charge/JIL. If the progress of the Works does not conform to the Programme, the Engineer-in-charge may instruct the Contractor to revise the Programme, showing the modifications necessary to achieve completion within the Time for Completion.
- 3.15.4 In case due to non -performance, negligence of the Contractor/or its Personnel either due to shortage of minimum labour on site, shortage of staff, equipment, plant and machinery etc or due to slow work at site or not or as per the agreed schedule/programme as per the Schedule ____, then, in all such or any event, the same will be considered as an event of default on part of the contractor, giving a right to JIL to terminate this Agreement forthwith or impose any monetary penalty / performance penalty/ liquidated damages as per General/Special conditions of contract. In case of continuous default of non - compliance of any obligations for more than 3 occasions / or for 3 continuous / consecutive months, JIL have all rights to terminate the Agreement without taking any obligation to give notice and full and final payment will be processed only after taking the consideration of all events of non -performance by the Contractor during the period prior to the termination. The effects / consequences of such termination and rights and obligations of parties will be as per the tender documents or General or Special Conditions. Further the termination of the contract does not bar JIL to recover penalty or liquidated damages as per the contract.

3.16 Monthly Progress Reports

- 3.16.1 Monthly progress reports shall be prepared by the Contractor and submitted to the Engineer-in-charge in six (6) copies on or before the (seven) 7 Business Day of each subsequent calendar month.
- 3.16.2 The first report shall cover the period up to the end of the calendar month after that month in which the Contractor received JIL's written approval of sample progress report. Contractor shall submit sample progress report for JIL's review and approval within 14 (fourteen) Days after the Commencement Day.
- 3.16.3 Reports shall be submitted monthly thereafter reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.
- 3.16.4 Monthly progress reports will contain information and data relating to the respective time period (calendar month) and cumulative data covering the time period up to the

last day of the respective month as well as main activities forecast for the subsequent month.

3.16.5 Monthly progress reports will reflect those items required by Technical Specifications, namely:

- i) Final situation, descriptions of progress, including photo documentation;
- ii) charts showing the status of main Construction Documents, purchase orders, manufacture and construction;
- iii) survey of Contractor's personnel and Equipment on Site;
- iv) survey of safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations;
- v) comparisons of actual and planned progress, with details of any aspects which may jeopardize the completion in accordance with the Programme and the Contract, and the measures being (or to be) adopted to overcome such aspects; and
- vi) survey of unresolved claims or disputes that involve requests for extension to the Time for Completion or adjustment to any other date or Milestone set forth in the Contract or increases in the Contract Price including but not limited to Variations.
- vii) Apart from above, monthly progress report also contains daily attendance sheet of labourers deployed at Project site and in case it is found that said attendance sheet is fabricated and is not reflecting the true attendance, JIL/EIC have all the rights to proceed against the Contractor by issuing appropriate notices.
- viii) JIL may have a right to monitor the project site and development activities carried out there by appointing the independent third party agency / project management consultant. The said monitoring include all construction activities and stocks related to plant and machinery, equipments, goods, labour deployment etc.

3.16.6 In case monthly progress report is not as per actual and planned progress/programme as mention in schedule ___ and there is a continuous default for more than 3 occasions / or for 3 continuous / consecutive months, JIL have all rights to terminate the Agreement without taking any obligation to give notice and full and final payment will be processed only after taking the consideration of all events of non -performance by the Contractor during the period prior to the termination. The effects / consequences of such termination and rights and obligations of parties will be as per the tender documents or General or Special Conditions. Further the termination of the contract does not bar JIL to recover penalty or liquidated damages as per the contract.

3.17 Contractor's Equipment

3.17.1 The Contractor shall provide all Contractor's Equipment necessary to complete the Works within the Time for Completion. All Contractor's Equipment shall, when brought onto the Site, be deemed to be exclusively intended for the execution of the

Works. The supervision of such equipment and their usage shall be done at JIL's end. In case, any equipment or plant and machinery bought by the Contractor at the costs, expenses of the JIL, the JILship/possession rights in such equipment or plant and machinery owned by JIL only.

3.18 Safety Precautions

3.18.1 The Contractor shall comply with all applicable safety laws including full compliance to applicable BOCW and Environmental laws/norms and regulations in his design, access arrangements and operations on Site, including, without limitation, Applicable Laws and Applicable Permits and the most recent revisions of standards published by the International Organization for Standardization for the protection of the environment and human health and safety. The Contractor shall, from the commencement of Works on Site until Taking-Over by JIL, provide:

- i) fencing, lighting, guarding, watching and protecting the Works;
- ii) temporary roadways, footways, flagmen, warning signs, guards and fences which may be necessary for the accommodation and protection of JILs and occupiers of adjacent land, the public and others;
- iii) reasonable measures for the prevention of fires;
- iv) the elimination of excessive dust or smoke;
- v) the protection of overhead utility lines, underground pipes, conduit or cables;
- vi) protection of adjacent properties from subsidence, collapse, discharge, and from dust, smoke, fire and chemical or other intrusion from the performance of the Works;
- vii) personnel protection equipment for Contractor's personnel and JIL's personnel; and
- viii) first aid facilities for Contractor's personnel and JIL's personnel along with safety equipment/gears/wearables as required under the applicable laws

3.18.2 The Contractor is under obligation to provide safeguards reasonably required for the protection of persons or property and in case, Contractor fail to comply with such request within a reasonable time and request JIL to provide help or apply such safe guards, or JIL itself on its sole discretion provide such safeguards , then in that event Contractor shall reimburse JIL for the reasonable costs thereof and debit all such costs from Contractor's bills/running account. However, all liability arising from any untoward incident or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.

3.19 Protection of the Environment

3.19.1 The Contractor shall comply with and shall cause each Subcontractor to comply with all Applicable Laws and Applicable Permits in the design, access arrangements and operations on Site, including those pertaining to protection of the environment. During construction, the Contractor shall take all necessary steps to protect the environment

(both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations. The Contractor shall ensure that air emissions, surface discharges and effluent from the Site during the Contract Period shall not exceed the values indicated in the Technical Specifications and shall not exceed the values prescribed by Applicable Laws and Applicable Permits. The Contractor shall cover the site, building material etc as per applicable norms/bye-laws.

- 3.19.2 The Contractor shall provide properly designed storage areas which are impermeable to leakage into the surrounding soil for storage of oils, lubricants or other hazardous wastes. Such storage will also be covered and protected from inundation and overflow by rainfall into the surrounding soil. Hazardous waste generated during completion of the Works will be properly disposed of by the Contractor on completion of the Works.
- 3.19.3 The Contractor at all times, shall fully comply with directions issued by the State Pollution Control Board, MOEF and NGT Norms for safeguarding the degradation of the environment in and around the construction site. The Contractor shall adopt good practices while carrying out the construction activities as prevalent from time to time or as instructed specifically by EIC/JIL. Any / all liability arising from on account of imposition of any fine, penalty, costs owing to the reasons of non-compliance and negligence on the part of Contractor in complying with directions of State Pollution Control Board, MOEF, environmental laws and NGT Norms shall be solely meted on Contractor.

3.20 Electricity and Water

- 3.20.1 The contractor shall procure and bear the costs of any and all water, power and any other utilities required to execute the Works. If any such amounts are legally required to be procured by JIL, the quantities consumed shall be determined by the Engineer-in-charge who shall include any amounts due to JIL in respect of such utilities as deductions. The Contractor shall, at his risk and cost, provide any apparatus necessary for such determination and for his use of these services.

3.21 Clearance of Site

- 3.21.1 During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.
- 3.21.2 Upon the issue of any Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which such Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish, and Temporary Works. The Contractor shall leave such a part of the Site and the Works in a clean and safe condition to the satisfaction of the Engineer-in-charge. Except that, the Contractor shall be entitled to retain on Site, until the expiry of the Warranty Period, such Contractor's Equipment, Materials and Temporary Works as required by him for the purpose of fulfilling his obligations under the Contract to the satisfaction of JIL.
- 3.21.3 If the Contractor fails to remove, by 28 (twenty-eight) Days after the issue of the Performance Certificate, any remaining Contractor's Equipment, surplus material,

wreckage, rubbish, and Temporary Works, JIL may sell or otherwise dispose of such items. JIL shall be entitled to retain, from the proceeds of such sale, a sum sufficient to meet the costs incurred in connection with the sale or disposal, and in restoring the Site. Any balance of the proceeds shall be paid to the Contractor. If the proceeds of the sale are insufficient to meet JIL's costs, the outstanding balance shall be recoverable from the Contractor by JIL.

3.22 Possession and Security of the Site

3.22.1 For removal of doubts, it is made clear to the Contractor, that physical and actual possession of the project site shall always with JIL for all purposes and intent. The Contractor shall have limited right to use the possession of the Project site to carry out the awarded work as stipulated in the tender documentation. Unless otherwise stated herein:

- i) the Contractor shall be solely responsible for keeping unauthorized encroachment and/or persons off the Site; and
- ii) authorized persons shall be limited to the employees of the Contractor, employees of its Subcontractors and persons authorized by JIL or the Engineer-in-charge.
- iii) The appointment of the Security Agency / CCTV Operations shall be under the sole and exclusive domain of JIL.

3.22.2 Facilities to inspect the Works shall at all times be afforded by the Contractor to JIL, the Engineer-in-charge and any other person notified to the Contractor by the Engineer-in-charge.

3.23 Contractor's Operations on Site

3.23.1 The Contractor shall confine its operations to the Site, and to any additional areas which may be provided by the Contractor and agreed by the Engineer-in-charge as working areas. The Contractor shall take all necessary precautions to keep its personnel, equipment and Subcontractors within the Site and such additional areas, and to keep and prohibit them from encroaching on adjacent land.

3.23.2 The Contractor shall not use any part of the Site for the purpose of any advertisement or promotion, except by way of notice boards approved (as to location, number and content) by JIL.

3.23.3 The Contractor shall be solely responsible for any disturbance of and damage to existing facilities, permanent or temporary, at or around the Site, which may be caused by its carrying out of the Works, remedying of defects therein, replacement/ substitution/ re-work of Works having a chronic defect thereto, or other activities under the Contract. Any repair works thereto, and any temporary facility required in order to avoid such disturbance or damage shall be the Contractor's responsibility and shall be carried out at the Contractor's cost. All operations necessary for the execution of the Works or any part thereof shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with the convenience of the public, or the access to, use and occupation of public or private roads or footpaths or any properties (adjoining the Site or otherwise).

- 3.23.4 If, by reason of any accident, failure or other event occurring to, in or in connection with the Works, or any part thereof, during the carrying out of such Works, any remedial or other works or repair shall, in the opinion of JIL, be urgently necessary for the safety of the Works and the Contractor is unable or unwilling to promptly do such work or repair, JIL on request of Contract or it may itself and/or may employ any other Contractor to carry out such work or repair (at the Contractor's risk and cost) as JIL may consider necessary.. However, all liability arising from any untoward incident or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.
- 3.23.5 All the Contractor's supervisory personnel and sufficient number of workers shall be trained for fire-fighting and shall be assigned specific fire protection duties at the Site. Sufficient number of such trained personnel must be available at the Site at all times. The Contractor shall provide sufficient fire protection equipment of the type and numbers for the warehouses, office, temporary appropriate structures, labour and work areas, residential and other facilities, etc. Access to such fire protection equipment, shall be easy and be kept open at all times.
- 3.23.6 The Security of Plant and Machinery, materials, equipment is on Contractor.
- 3.23.7 That in case of any unfortunate event of theft of materials, equipment, plants, machinery or damage caused to them on account of external factors whatsoever resulting the monetary losses, the Contractor shall solely be burdened with all such losses and any other cost /expenses. Further, Contractor shall solely make all good against such losses.

3.24 Fossils

- 3.24.1 All fossils, coins, articles of value or antiquity, and structures and other remains or things of geological or archaeological interest discovered on the Site shall (as between the parties) be the property of JIL. The Contractor shall take reasonable precautions to prevent his staff, labor or other Persons from removing or damaging any such article or thing. The Contractor shall, immediately upon discovery of such article or thing, advise the Engineer-in-charge, who may issue instructions for dealing with it.
- 3.24.2 If the Contractor suffers delay and/or incurs Cost in following these instructions of the Engineer-in-charge, and if such delay and/or Cost was not foreseeable, the Contractor shall give notice to the Engineer-in-charge, with a copy to JIL. After receipt of such notice, the Engineer-in-charge shall proceed in accordance with Clause 2.5 to agree or determine:
- i) any extension of time to which the Contractor is entitled under Clause 6.3; and
 - ii) the amount of such Cost, which shall be reimbursed on top of the Contract Price, and shall notify the Contractor accordingly.

3.25 Opportunities for Other Contractors

- 3.25.1 The Contractor shall, in accordance with the Engineer-in-charge's instructions, afford to other contractors engaged by JIL to work on the Site and Persons lawfully upon the Site all reasonable opportunities for carrying out their work. The Contractor shall also afford such opportunities to the employees of JIL.

3.26 Damage to Roads/Highways

- 3.26.1 The Contractor shall prevent any of the internal routes connecting with or on the route to the Site from being damaged or injured by any traffic belonging to the Contractor or any of his Subcontractors. The Contractor in particular shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic that will inevitably arise from the moving the machinery, Major Equipment and Material from and to the Site shall be limited as far as reasonably possible so that no unnecessary damage or injury may be occasioned to such internal routes.

3.27 Design of the Works

DELETED/N.A.

3.28 Construction Documents

- 3.28.1 The Contractor shall prepare Construction Documents in sufficient detail to satisfy all Applicable Laws and Applicable Permits, all regulatory approvals, to provide suppliers and construction personnel sufficient instruction to commence and execute the Works, and to describe the operation of the completed Works. The Engineer-in-charge shall have the right to review and inspect the preparation of Construction Documents, wherever they are being prepared.
- 3.28.2 Each of the Construction Documents shall, when considered ready for use, be submitted to the Engineer-in-charge for pre-construction review. All such documentation shall be prepared, submitted, reviewed and approved (where required) in compliance with the Technical Specifications.
- 3.28.3 In this Clause, review period means the period required by the Engineer-in-charge, which shall not exceed twenty-one (21) Days, calculated from the date on which the Engineer-in-charge receives a proposed Construction Document and the Contractor's notice that it is considered ready, both for a pre-construction review in accordance with this Section and for use. If the Engineer-in-charge, within such review period, notifies the Contractor that a proposed Construction Document fails (to the extent stated) to comply with JIL's Requirements, it shall be rectified, resubmitted and reviewed in accordance with this Section at the Contractor's Cost.
- 3.28.4 For each part of the Works, and except to the extent that the prior consent of the Engineer-in-charge shall have been obtained:
- i. construction shall not commence prior to the expiry of the review periods for the Construction Documents which are relevant to the design and construction of such part;
 - ii. construction shall be strictly in accordance with such Construction Documents; and
 - iii. if the Contractor wishes to modify any Approved Design / Drawings or document which has previously been submitted for such pre-construction review, the Contractor shall immediately notify the Engineer-in-charge and shall subsequently submit revised documents to the Engineer-in-charge for pre-construction review.

3.28.5 If the Engineer-in-charge instructs that further Construction Documents are necessary for carrying out the Works, the Contractor shall upon receiving the Engineer-in-charge's instructions prepare such Construction Documents.

3.28.6 Errors, omissions, ambiguities, inconsistencies, inadequacies and other defects in the Construction Documents or arising therefrom shall be rectified by the Contractor at his sole cost and risk.

3.29 No Relief from Liability

3.29.1 Neither:

- i. the examination of or the giving or withholding of consent to any Construction Documents under this section or the making of objections, representations, comments or suggestions, or failure to make the same in relation to the said Construction Documents or any other aspect of the Works unless changes in the Approved Design are imposed on the Contractor by JIL and/or Lender; nor
- ii. any other act or omission of JIL or the Engineer-in-charge or of any other Person acting or purporting to act on their behalf in relation to any aspect of the Works (including without limitation the issue of any payment certificate or Performance Certificate or the issue of any order or instruction pursuant to the Contract)

shall relieve the Contractor in whole or in part of any duty, obligation or liability undertaken by the Contractor in relation to the Works whether under this Contract or otherwise, or diminish or vary any such duty, obligation or liability, whether by way of contribution or under any applicable law, rules, bye-laws etc or otherwise. Neither JIL nor the Engineer-in-charge shall be under any duty or obligation to warn or notify the Contractor of the breach of any duty or obligation owed by the Contractor hereunder or otherwise in relation to the Works of which JIL or the Engineer-in-charge are or should be aware.

3.30 No Variation

3.30.1 Neither any consent to Construction Documents by the Engineer-in-charge under this Clause of any modification as a condition of such consent nor the consent to Construction Documents which does not comply with or is inconsistent with the Technical Specifications shall be capable of constituting a Variation pursuant to Clause 10 and no additional payment of any kind or extension of Time for Completion shall be awarded in respect of the time taken for, or other circumstances whatsoever surrounding, consent being given or withheld in relation to Construction Documents by the Engineer-in-charge or the subsequent carrying out of the Works, provided that any imposition pursuant to this Clause of any modification as a condition of such consent which also modified the Technical Specifications may be a Variation pursuant to Clause 10.

3.31 Extra Items

3.31.1 Extra items of Work shall not in any way vitiate the Contract. The Contractor shall be bound to execute extra items of Work as directed by the Engineer-in-Charge. The rate(s) of any additional, altered or substituted item(s) shall be determined by JIL as

follows: -

- i) If the rate of any additional, altered or substituted item(s) of Work is not specified in Bill of Quantities, the rate for such item(s) shall be derived from the rate of nearest similar item specified therein.
- ii) If it is not feasible to derive the rate of such extra item(s) from similar items in Bill of Quantities as per provisions of Sub clause (i) herein above, the Contractor shall submit the analysis of rates for extra item with supporting documents, the co-efficient of materials in such analysis of rates shall be as per manufacturers specifications or as mentioned in the CPWD analysis of rates whichever is applicable. The provision for the Contractor's profit and overheads (including all taxes, labour cess & duties except GST) shall be limited to 15% of the prime cost. The prime cost shall include all expenditure for materials, labour, and supplies furnished by the Contractor and all expenditure for use of Plant & Equipment where required but will in no case include any allowance for office expense, general superintendence or other general expenses. GST shall be paid extra as applicable. These rates shall be checked and decided by the Engineer-in-Charge in consultation with the Contractor and payment for such extra items shall be made at the rates as decided by Engineer-in-Charge.
- iii) Under no circumstances the Contractor shall at any stage suspend the Work on account of non-settlement of rates of such item(s)
- iv) Increase or decrease in specified basic rate of material, as mentioned in BOQ for incorporation in a quoted rate of an item of work shall be accounted for in the payment of the item of the related work only to the extent of the increase/decrease in the basic rate without any other additional cost.

3.32 Contractor's Undertaking

- 3.32.1 The Contractor represents and warrants that the design, the Construction Documents, the execution and the completed Works will be in accordance with the following, in order of priority:
 - i. the Applicable Laws, and
 - ii. the documents forming the Contract, as altered or modified by Variations.
- 3.32.2 The contractor shall not, under any circumstances, deviate from the requirements of (a) and (b) above without JIL's prior written approval. The contractor shall make no claim for any additional compensation, extension of the Time for Completion, Variation or otherwise for any such deviations due to legal or physical impossibility except and only to the extent provided in and permitted by herein.
- 3.32.3 In case of any sub-standard execution of work and poor performance/quality of workmanship, JIL without waiting for completion of time and work, shall forthwith call upon the Contractor to rectify all such defects at its own expense and cost. In case the Contractor fails to rectify the same, within the period as suggested by JIL or EIC, JIL shall have all the rights to deduct the amount of works from the pending bills and take appropriate legal recourse and recover the amount from Contractor. Even after the completion of Defect Liability Period, the Contractor is under the contract

obligation to rectify major structural defects and all consequences attached with such major structural defects shall be solely meted out on / attributable to the Contractor only. The period for applicability of this clause is in sync with the all the applicable laws/norms of the New Okhla Industrial Development Authority or GNIDA or YEIDA as the case may be.

3.33 Technical Standards and Regulations.

3.33.1 The Construction Documents, the execution and the completed Works shall comply with the national specifications, technical standards, building, construction and environmental regulations, regulations applicable to the Works and the product being produced from the Works, and the standards specified in the Technical Specifications and Schedules or as defined by Applicable Laws and Applicable Permits. List of the basic standards and codes applicable on the Works is given in Section III (2) of Schedule 2. References in the Contract to such specifications and other matters shall be understood to be references to the edition applicable on the Execution Date, unless explicitly stated otherwise herein. If substantially changed or new applicable national specifications, technical standards, or Applicable Laws or Applicable Permits that directly affect Contractor's lawful design, construction or execution of the Works are promulgated or enacted after the Execution Date, and such changes would not reasonably have been in the contemplation of an experienced contractor as of the Execution Date, the Contractor shall submit proposals for compliance to the Engineer-in-charge. In the event that the Engineer-in-charge determines that such proposals constitute a Variation, he shall then initiate a Variation in accordance with Clause 10.

3.34 Samples

3.34.1 The Construction Documents shall include the following samples and any relevant information, which the Contractor shall submit for pre-construction review by the Engineer-in-charge:

- i. manufacturer's standard samples of Materials and material mill test certificates.
- ii. samples (if any) specified in the Technical Specifications; and
- iii. additional samples instructed by the Engineer-in-charge.

Each sample shall be labeled as to origin and intended use in the Works.

3.35 As-Built Drawings

3.35.1 The Contractor shall prepare and keep up-to-date a complete set of "as-built" records of the execution of the Works, showing the exact as-built locations, sizes and details of the work as executed, with cross references to relevant specifications and data sheets. These records shall be kept on the Site and shall be used exclusively for the purposes of this Section.

3.35.2 Two (2) copies shall be submitted to the Engineer-in-charge prior to the commencement of the Tests on Completion.

3.35.3 In addition, the Contractor shall prepare and submit to the Engineer-in-charge "as-built drawings" of the Works, showing all Works as executed. The drawings shall be

prepared as the Works proceed and shall be submitted to the Engineer-in-charge for his inspection. The Contractor shall obtain the consent of the Engineer-in-charge as to their size, the referencing system, and other pertinent details.

- 3.35.4 Prior to the issue of any Taking-Over Certificate, the Contractor shall submit to the Engineer-in-charge a set of marked up drawings, and any further Construction Documents specified in the Technical Specifications. The Works shall not be considered to be completed for the purposes of Taking-Over under Clause 8 until such documents have been submitted to the Engineer-in-charge. Two (2) full-size original copies and six (6) printed copies of the relevant 'as-built drawings' and diskettes of such as-built drawings shall be available at the Site and provided to Engineer-in-charge within ninety (90) Days after the Taking-Over Date. As-built drawing requirements are as specified in relevant clause.

3.36 Operation and Maintenance Manuals

- 3.36.1 Not less than [●] Days prior to commencement of the Tests on Completion, the Contractor shall prepare and submit to the Engineer-in-charge operation and maintenance manuals in accordance with the Technical Specifications and in sufficient detail for JIL to operate, maintain, dismantle, reassemble, adjust and repair the Works. The Works shall not be considered to be completed for the purposes of Taking-Over under Clause 8 until such operation and maintenance manuals have been submitted to the Engineer-in-charge and Engineer-in-charge has accepted the same. Prior to final Acceptance Date, Contractor shall provide to JIL final versions of said operation and maintenance manuals reflecting any revisions necessitated by the testing, Start-Up and Performance Testing processes.

3.37 Error by Contractor

- 3.37.1 If errors are found in the Construction Documents during the Contract Period, the same shall be corrected at the Contractor's cost. If same are not rectified, EIC/JIL have a right to issue notice to Contractor seeking necessary reliefs.

3.38 Patent Rights

- 3.38.1 The Contractor shall indemnify JIL against all claims of infringement of any patent, registered design, copyright, trade mark or trade name, or other intellectual property right, if:

- i. the claim or proceedings arise out of the design, construction, or use of the Works;
- ii. the infringement (or allegation of infringement) was not the result of part (or all) of the Works being used for a purpose other than that indicated by, or reasonably to be inferred from, the Contract; and
- iii. the infringement (or allegation of infringement) was not the result of part (or all) of the Works being used in association or combination with any thing not supplied by the Contractor, unless such association or combination was disclosed to the Contractor prior to the Execution Date or is stated in the Contract.

- 3.38.2 The Contractor shall be promptly notified of any claim under this Clause made against

JIL. The Contractor may, at his cost, conduct negotiations for the settlement of such claim, and any litigation or arbitration that may arise from it. JIL or the Engineer-in-charge shall not make any admission which might be prejudicial to the Contractor, unless the Contractor has failed to take over the conduct of the negotiations, litigation or arbitration within a reasonable time after having been so requested.

- 3.38.3 Except to the extent that JIL agrees otherwise, the Contractor shall not make any admission which might be prejudicial to JIL, until the Contractor has given JIL such reasonable security as JIL may require. The security shall be for an amount, which is an assessment of the compensation, damages, charges and costs for which JIL may become liable, and to which the indemnity under this Section applies.
- 3.38.4 JIL shall, at the request and cost of the Contractor, assist him in contesting any such claim or action and shall be repaid all reasonable costs incurred.
- 3.38.5 Except where otherwise specified in the Contract, the decision of the Engineer-in-Charge as to the quality of workmanship or materials used on the Work, or as to any other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the Contract documents, designs, drawings, specifications, estimates, instructions, or conditions, or otherwise concerning the Work or the execution or failure to execute the same whether arising during the progress of the Work or after the completion or abandonment of the Contract by the Contractor shall be final conclusive and binding on the Contractor.

3.39 Cooperation with Other Contractors

- 3.39.1 Other activities like plumbing, firefighting, electric wiring and fittings, heating, ventilation & air conditioning if any which are outside the scope of this contract shall, by their nature, need to go on simultaneously with the construction activities envisaged in this Contract. The Contractor is expected to cooperate and co-ordinate with the agencies deployed by the Engineer-in-Charge to execute the work relating to the aforesaid extra contractual activities. There may be occasional hindrances to the work of the Contractor due to the ongoing activities of the other agencies, as aforesaid, but the Contractor shall not be entitled to any claim on this account.

4 STAFF AND LABOR

4.1 Engagement of Staff and Labor

- 4.1.1 The Contractor shall make its own arrangements for the engagement of all his staff and labor, local or otherwise, and for their payment, housing, feeding and transport. That at all times during the term / validity / existence of this Agreement, the Contractor shall maintain minimum of active / working labour of _____ in number at Project site. This strength of labour deployment may increase as per the instructions given to Contractor by JIL to achieve the timelines as agreed between the parties and as per the schedule ___ of this Agreement/contract. The Contractor shall also ensure that adequate staff including engineers etc as agreed and stated in schedule shall be fully deputed at site. Non-compliance of this very condition may disturb the construction cycle and it may also impact the business planning of JIL, therefore JIL have a right to monitor the daily labour deployment at Project site and in case, labour deployment decreases below the minimum requirement and/or less than the Schedule agreed, JIL have right to consider the same as an event of default and thus to proceed

freely as per its own discretion.

- 4.1.2 In case of continuous default of non - compliance of any obligations for more than 3 occasions / or for 3 continuous / consecutive months, JIL have all rights to terminate the Agreement without taking any obligation to give notice and full and final payment will be processed only after taking the consideration of all events of non -performance by the Contractor during the period prior to the termination. The effects / consequences of such termination and rights and obligations of parties will be as per the tender documents or General or Special Conditions. Further the termination of the contract does not bar JIL to recover penalty or liquidated damages as per the contract.

4.2 Rates of Wages and Conditions of Labor

- 4.2.1 The Contractor shall pay rates of wages and observe conditions of labor not less than applicable minimum wages governed in the State of Uttar Pradesh for the trade or industry where the Works are being carried out. If no such established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions not less favorable than the general level of wages and conditions observed by others whose trade or industry is similar to that of the Contractor.

4.3 Persons in the Service of Others

- 4.3.1 The Contractor shall not recruit, or attempt to recruit, his staff and labor from amongst persons in the service of JIL or the Engineer-in-charge.

4.4 Labor Laws

The Contractor shall comply, and shall cause its Subcontractors to comply, with all the relevant labor laws including but not limited to labour cess under BOCW act, applying to its employees, and shall duly pay and afford to them all their legal rights under Applicable Laws and Applicable Permits. The Contractor shall apply and obtain registration under Labour Laws, BOCW act etc at its own expenses. The Contractor shall require all such employee, workmen, labourers, managers and Subcontractors so employed/engaged by it to obey all Applicable Laws and regulations concerning safety at work. However, in case any liability arising due to any violation or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.

4.5 Working Hours

- 4.5.1 Contractor shall be permitted to work at the Site at any time or hour, as permitted by Applicable Laws and Applicable Permits. The Contractor's Representative or a qualified supervisor shall be present during all periods, including overtime and second and third shifts, when work is in progress at the Site.

4.6 Facilities for Staff and Labor

- 4.6.1 The Contractor shall provide and maintain all necessary accommodation and welfare facilities for his (and his Subcontractor's) staff and labor, as may be required under Applicable Laws or as contractually agreed between the parties. The Contractor shall

also provide the facilities specified in the special condition of contract for JIL's and Engineer-in-charge's personnel. The Contractor shall not permit any of its employees or any of the employees of Subcontractors to maintain any temporary or permanent living quarters within the structures forming part of the Works.

4.7 Health and Safety

- 4.7.1 All the necessary required Precautions and safety measures like helmets etc. shall be taken by the Contractor to ensure the health and safety of his staff and labor, workmen, labourers, managers and Subcontractors so employed/engaged by it. The Contractor shall ensure that medical staff, first aid facilities and ambulance service are available at the accommodation and on the Site during all times the Works are being executed at the Site and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Engineer-in-charge may reasonably require.
- 4.7.2 The Contractor shall appoint a member of his staff at the Site to be responsible for maintaining the safety, and protection against accidents, of personnel on the Site. This person shall be qualified for his work, shall be a full-time employee of the Contractor and shall have the authority to issue instructions and take protective measures to prevent accidents. The Contractor shall send to the Engineer-in-charge details of any accident as soon as possible (but in any event within 24 (twenty-four) hours after its occurrence.
- 4.7.3 Contractor agrees to comply with any and all safety and health requirements established by JIL and as identified in the Health and Safety Specifications set out at Schedule 2. The Contractor agrees that it shall indemnify JIL for all breaches and resultant consequences. However, in case any liability arising due to any violation or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.
- 4.7.4 In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the government of India, or the local medical or sanitary authorities, for the purpose of dealing with and overcoming the same. However, in case any liability arising due to any violation or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.

4.8 Contractor's Superintendence

- 4.8.1 The Contractor shall provide all necessary superintendence during the design and execution of the Works, and as long thereafter as the Engineer-in-charge may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. Such superintendence shall be given by sufficient and suitably qualified persons having adequate knowledge of the operations to be carried out (including the methods

and techniques required, the hazards likely to be encountered and methods of preventing accidents) for the satisfactory and safe execution of the Works.

4.9 Contractor's Personnel

4.9.1 The Contractor shall employ (or cause to be employed) only persons who are careful and appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer-in-charge may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative, who in the opinion of the Engineer-in-charge:

- i) persists in any misconduct;
- ii) is incompetent or negligent in the performance of his duties;
- iii) fails to conform with any provisions of the Contract; or
- iv) persists in any conduct which is prejudicial to safety, health, or the protection of the environment.

4.9.2 If appropriate, the Contractor shall then appoint (or cause to be appointed), at Contractor's sole cost, a suitable replacement person.

4.10 Disorderly Conduct

4.10.1 The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his staff and labor and the staff and labor of his Subcontractors, and to preserve peace and protection of persons and property in the area of the Works against such conduct, including offsite locations.

4.11 Contractor's Organizational Chart

4.11.1 None of the individuals identified in Contractor's Organizational Chart may be withdrawn from the Project without due notification to and approval being given by JIL. No such withdrawal shall be made if it will, in the opinion of JIL, jeopardize successful completion of the Works within the Time for Completion.

4.12 Labor Actions

4.12.1 Contractor shall establish and maintain at the Site a primary access gate and an access policy. Contractor shall also establish and maintain at all times a reserve gate. Contractor shall be obligated and shall ensure that all Subcontractors continue the proper performance of the work and meet all manning requirements notwithstanding the use of pickets at the reserve gate established for use by Contractor and any of the Subcontractors or at any other location or entrance at or near the Site. Contractor shall ensure that its Subcontractors and all persons entering the Site enter and exit the gate designated for their use and will instruct all persons exiting and entering the Site as to the proper gates. If for any reason Contractor fails to perform any condition contained in this Clause 4.12.1, Contractor shall be in default of its obligations under this Contract and Contractor shall not be entitled to an adjustment in the Contract Price or the Time for Completion. In case of any untoward incident at project site involving the labourers, any liability that comes on JIL as a project JIL the same shall be directly attributed to Contractor who will indemnify JIL/its

Employees/Directors/Management from all actions and fines, penalties, punishment etc.

- 4.12.2 In case of any non-compliance of any applicable law / statute/ rule/ regulations/promulgations/ ordinances/govt. orders etc. all liabilities/ actions /prosecutions shall solely be attributed upon the Contractor. The Contractor shall indemnify JIL/Management/Board/Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc. The same is also applicable in case of any accident, mishappening and untoward event occurred at the Project Site.

5 PLANT, MATERIALS AND WORKMANSHIP

5.1 Manner of Execution

- 5.1.1 All Works to be done shall be executed in the manner set out in the Contract. The Works shall be executed in a proper, workmanlike and careful manner with properly equipped facilities and non-hazardous Materials, in accordance with recognized good practice and Prudent Practices.

5.2 Delivery to Site

- 5.2.1 The Contractor shall be responsible for procurement, transport, receiving, unloading and safe-keeping of all machinery, Materials, Contractor's Equipment and other things required for the completion of the Works.

5.3 Inspection

- 5.3.1 JIL and the Engineer-in-charge shall be entitled, at any places where work is being carried out, to inspect, examine and test the materials and workmanship, and to check the progress of Works to be done under the Contract. The Contractor shall give them full opportunity to inspect, examine, measure and test any work on Site or wherever carried out. Contractor shall comply with the requirements of the Technical Specifications.
- 5.3.2 The Contractor shall give due notice to the Engineer-in-charge whenever such work is ready. The Engineer-in-charge shall then either carry out the inspection, examination, measurement or testing without unreasonable delay, or notify the Contractor that it is considered unnecessary. If the Contractor fails to give such notice, he shall, when required by the Engineer-in-charge, uncover such work and thereafter reinstate and make good at his own cost.
- 5.3.3 The Engineer-in-charge shall, during the progress of the Work, have power to order in writing from time to time:
- i) The removal from the site, within such time as may be specified in the Order, of any materials which, in the opinion of the Engineer-in-charge, are not in accordance with the Contract.
 - ii) The substitution of proper and suitable materials and,

- iii) The removal and proper re-execution, notwithstanding any previous test thereof or interim payment thereof, of any Work which in respect of materials or workmanship is not, in the opinion of the Engineer-in-charge, in accordance with the Contract. This condition also applies in DLP/extended period.
- 5.3.4 In case of default on the part of the Contractor in carrying out such order, as specified in the preceding sub clause, JIL shall be entitled to employ and pay other person(s) to carry out the same and all expenses consequent thereon or incidental thereto shall be recoverable from the Contractor by JIL or may be deducted by JIL from any amount due or which may become due to the Contractor.
- 5.3.5 The Site and all Works performed by the Contractor shall be subject to inspection, examination and testing by JIL at any and all times during design, engineering, procurement, fabrication and at any and all places where such design, engineering, procurement and fabrication are carried on. The Contractor shall arrange for JIL to have access to the Site for such inspection, and provide other reasonable facilities, assistance, labour, equipment, materials and instruments necessary for the safe and convenient inspection of the Project.

5.4 Testing

- 5.4.1 If the Contract provides for tests, the Contractor shall provide all documents and other information necessary for testing and such assistance, labor, materials, electricity, stores, apparatus and instruments as are necessary to carry out such tests efficiently. Notwithstanding the above, JIL shall provide Contractor with: (a) equipment and power; and (b) the complement of operating personnel in support of Performance Tests. Contractor shall be responsible for performing and conducting all tests and shall comply with the requirements of the Technical Specifications.
- 5.4.2 The Contractor shall agree, with the Engineer-in-charge, the time and place for the testing of any site, machinery, material and other parts of the Works as specified in the Contract. The Engineer-in-charge shall give the Contractor not less than 24 (twenty-four) hours' notice of its intention to attend the tests. The Contractor shall provide sufficient suitably qualified and experienced staff to carry out the tests specified in the Contract. In the event that the Engineer-in-charge sets a date for testing, which causes an unreasonable delay, the Contractor is entitled to an extension of time and the amount of Costs reimbursed on top of the Contract Price for the same.
- 5.4.3 Contractor shall promptly forward to the Engineer-in-charge duly certified reports of the tests and copies of the data upon which the reports are based. When the specified tests have been passed, the Engineer-in-charge shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect.

5.5 Rejection

- 5.5.1 If, as a result of inspection, examination or testing, the Engineer-in-charge decides that any machinery, Materials, design or workmanship has Defects or Deficiencies or otherwise is not in accordance with the Contract, the Engineer-in-charge may reject such machinery, Materials, design or workmanship and shall notify the Contractor promptly, stating his reasons. The Contractor shall then promptly remedy the Defects

or Deficiencies and ensure that the item complies with the Contract.

- 5.5.2 If the Engineer-in-charge requires such machinery, Materials, design or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If such correction and retesting cause JIL to incur additional costs, such costs shall be recoverable from the Contractor by JIL, and may be deducted by JIL from any monies due, or to become due, to the Contractor.
- 5.5.3 The Contractor and JIL's Representative shall agree on an appropriate time to conduct the tests to be repeated.

5.6 JILship of Machinery, Materials or Other Works

5.6.1 Each item of machinery, and Materials or other Works shall become the property of JIL at whichever is the earlier of the following times, unless otherwise stated in the Contract:

- i) in respect of the Works other than machinery, equipment's and Materials as and when they are performed; or
- ii) when Contractor is paid for such Machinery, equipment's, Materials or other Works.

5.6.2 Contractor warrants and guarantees that legal title to all materials, equipment, tools and supplies furnished by Contractor, Subcontractors or their agents which are being shipped to the Site, incorporated in the Works or in storage at the Site, shall pass to JIL free and clear of any and all liens, claims, security interests or other encumbrances. Notwithstanding transfer of title or JILship, risk of loss or damage shall be as stated in Clause 13.

5.6.3 Also, JIL is entitled to retain / take into its custody and possession all equipment, Machinery and Materials deployed / stationed at site in case of any dispute with Contractor or its abundance of work. JIL further vested with all legal rights to proceed against Contractor for causing delays and wrongful losses. Also to induct/appoint new Contractor who may use all Contractor's existing plant and machinery. In case any incident/ accident, mishappening and untoward event occurred happens due to default in machines or equipment, then all liabilities/ actions /prosecutions shall solely be attributed upon the Contractor. The Contractor shall indemnify JIL/Management/Board/Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc.

6 COMMENCEMENT, DELAYS AND SUSPENSION

6.1 Commencement of Works

6.1.1 The Contractor will start the work at site within 15 days from the issuance of the LOI. However no advance shall be given to the Contractor or Work execution / mobilization is allowed unless and until the formal documentations signed between the parties after completing the necessary legal formalities and all such legal formalities shall be completed in 15 days from the issuance of the LOI.

6.2 Time for Completion

- 6.2.1 Time for Completion shall be as per LOI / NIT / ITB Contractor guarantees and/os as per the programme given in Schedule ___, The Contractor agree that it will achieve the Taking-Over Date on or before the Scheduled Taking-Over Date. Contractor further agrees and undertakes that it shall use its best efforts to achieve the Final Acceptance Date as expeditiously as possible, but in no event later than 7 Days after the Taking-Over Date.
- 6.2.2 Provided that JIL, at any time, provide notice in writing to the contractor to suspend the progress of part or all of the works, without assigning any reason, whatsoever. upon receipt of written instructions from JIL and/or its board members / Directors / Management or its authorised representative/ employees, the contractor shall promptly suspend the progress of part or all of the works. The contractor agrees and undertakes that any idle time period during which no construction activity is carried out at project site shall be excluded from agreed completion time period and shall not demand idle charges for plant, machinery, labour etc for the said period from JIL.
- 6.2.3 JIL shall grant a fair and reasonable extension of time for completion of Work due to such suspension, as determined by JIL's Representative, without any additional payments to Contractor. The decision of JIL and/or its Board members/Management / Directors or its Authorised Representative/ employees shall be final and binding in this regard.

6.3 Extension of Time for Completion

- 6.3.1 The Contractor may apply for an extension of the Time for Completion if he is or will be delayed either before or after the Time for Completion by any of the following causes:
- i) a Variation (unless an adjustment to the Time for Completion is agreed under Clause 10.3);
 - ii) a Force Majeure event (as defined in Clause 15.1); or
 - iii) a cause of delay specifically giving an entitlement to extension of the Time for Completion under another Clause of this Contract, unless the Contractor has not complied with such Clause.
 - iv) for reasons caused due to acts or failure to act of JIL or JIL's agents / contractors.
- 6.3.2 **Exclusions** - Contractor is expressly precluded from any extension of the Time for Completion for all and any reasons whatsoever due to:
- i) delays in obtaining labor or delivery of goods or services from any Subcontractor; or
 - ii) actions or inactions of any government, including the government of India and

delays in Applicable Permits;

- iii) physical conditions at the Site of any kind or character unless such conditions are caused by Force Majeure and except in the event of substantial differences between the data given in the Technical Specifications.
- 6.3.3 Contractor shall be entitled to an extension of the Time for Completion by the amount of time Contractor is actually delayed if an event is identified that falls within the exceptional categories set out in subparagraphs of 6.3.1) above. In such an event, the Contractor shall be entitled to the requisite extension of Time for Completion, provided (i) notice is given as hereinafter provided, (ii) the delay is on the critical path (as reflected on the Programme) and is outside the reasonable control of Contractor or its Subcontractors; (iii) if the performance of the Contract is subject to concurrent delays, the Contractor shall only be entitled to the benefit of the period that is directly the result of excusable delays as described in the exception to subparagraphs above; (iv) the Taking-Over Date is actually delayed by such events.
- 6.3.4 If the Contractor intends to apply for an extension of the Time for Completion, the Contractor must give notice to the Engineer-in-charge of such intention as soon as possible and in any event within seven (7) Days of the start of the event giving rise to the delay, together with any other notice required by the Contract and relevant to such cause. Contractor is further required to submit to JIL, as part of its request for an extension of the Time for Completion, an acceleration schedule to demonstrate how such delay can be eliminated. The Contractor's request shall be in writing and shall be accompanied by adequate evidence of the happening of this being sought. The Contractor shall keep such contemporary records as may be necessary to substantiate any application, either on the Site or at another location acceptable to the Engineer-in-charge, and such other records as may reasonably be requested by the Engineer-in-charge. The Contractor shall permit the Engineer-in-charge to inspect all such records and shall provide the Engineer-in-charge with copies as required.
- 6.3.5 Within 28 (twenty-eight) Days of the first Day of such delay, the Contractor shall submit full supporting details of his application, including, without limitation, a critical path analysis of the alleged delay reflecting the considerations set forth in this Clause. If the Contractor cannot submit all relevant details within such period because the cause of delay continued for a period exceeding 7 (seven) Days, the Contractor shall submit interim details at intervals of not more than 28 (twenty-eight) Days (from the first Day of such delay) and full and final supporting details of his application within 60 (sixty) Days of the last Day of delay. In the appropriate circumstances, JIL shall have the right to waive the time periods set out as above.
- 6.3.6 The Engineer-in-charge/JIL shall proceed in accordance with Clause 2.5 to agree or determine either prospectively or retrospectively such extension of the Time for Completion as may be due. The Engineer-in-charge shall notify the Contractor accordingly. When determining each extension of time, the Engineer-in-charge shall review his previous determinations and may revise, but shall not decrease, the total extension of time.
- 6.3.7 The Contractor shall not be entitled to any claim whatsoever on account of the grant of extension of time. Any extension of time granted by the Engineer-in-charge to the Contractor shall, except as provided elsewhere in the Contract, be deemed to be compensation in satisfaction for and in respect of any actual or probable loss or injury

sustained or sustainable by the Contractor in respect of any matter or thing in connection with which such extension shall have been granted. If there is no ground of seeking extension by the Contractor and admittedly there is a delay to complete the works as per tender conditions, JIL in that event, have a right to impose and seek liquidated damages and/or penalty from the Contractor

6.4 Rate of Progress

- 6.4.1 If at any time the Contractor's actual progress falls behind the Programme referred to in Clause 3.15, or it becomes apparent that it will so fall behind schedule, the Contractor shall immediately submit to the Engineer-in-charge a revised Programme taking into account the prevailing circumstances. The Contractor shall, at the same time, notify the Engineer-in-charge of the steps being taken to expedite progress, so as to achieve completion within the Time for Completion. The costs of implementing such steps or of revising the Programme as herein noted, shall be solely for Contractor's account.
- 6.4.2 If any steps taken by the Contractor in meeting his obligations under this Clause which results JIL to incur additional costs, such costs shall be recoverable from the Contractor by JIL, subject to proper documentation and proof, and may be deducted by JIL from any monies due, or to become due, to the Contractor.
- 6.4.3 If Contractor falls behind milestones identified in the Programme so as to delay the Time for Completion, except to the extent Contractor is entitled hereunder to an extension of the Time for Completion, Contractor shall, upon written notice by Engineer-in-charge and at no additional cost to JIL, develop a recovery schedule and work such hours (including night shifts, weekends and holidays) and furnish such additional labor and equipment as necessary to eliminate such delay.
- 6.4.4 In case of continuous default of failure to work as per Programme for more than 3 occasions / or for 3 continuous / consecutive months, JIL have all rights to terminate the Agreement without taking any obligation to give notice and full and final payment will be processed only after taking the consideration of all events of non -performance by the Contractor during the period prior to the termination. The effects / consequences of such termination and rights and obligations of parties will be as per the tender documents or General or Special Conditions. Further the termination of the contract does not bar JIL to recover penalty or liquidated damages as per the contract.

6.5 Liquidated Damages

6.5.1 Delay Liquidated Damages

- i) If the Contractor fails to comply the specified timelines/programme/mile stones as per agreed schedule, shortage of minimum labour on site, shortage of staff, equipment, plant and machinery etc or due to slow work at site or not as per the agreed schedule of the amount of the work to be done, then, in all such or any event, the Contractor shall, pay delay liquidated damages to JIL in an amount equal to 0.5% (zero-point five percent) of Contract Price for per week or part thereof, subject to the aggregate of delay damages payable under this contract shall not exceed **10% (Ten percent) of the Contract Price (excluding Taxes)**.

- ii) The Parties agree that the delay liquidated damages are a genuine and reasonable pre-estimate of the damages likely to be sustained by JIL as a result of the Contractor's breach of its obligations. If the obligation to pay delay liquidated damages pursuant to this Clause 6.5.1 is found for any reason to be void, invalid or otherwise inoperative so as to disentitle JIL from claiming delay damages, JIL shall be entitled to claim against the Contractor for damages at law resulting from the Contractor's breach of its obligations as set out in the Contract
- iii) Save in the case of fraud, deliberate default or reckless misconduct, the delay liquated damages described above (whether payable under this Contract or at law) shall be JIL's exclusive remedy for the Contractor's breach of its obligations under Clause 6.2 , other than in the event of termination under Clause 12.2.1 . Payment of delay liquated damages shall not relieve the Contractor from its obligation to achieve Works completion, or from any other duties, obligations or responsibilities which it may have under the Contract and Applicable Law.

6.5.2 JIL may recover the Liquidated Damages from the Contractor from any amounts due or which may subsequently become due to the Contractor under the Contract.

6.5.3 Performance Liquidated Damages

- i) If the Contractor fails to comply with performance of obligations as set out in this Contract, then the Contractor shall pay performance liquidated damages to JIL and subject to the aggregate of performance damages payable under this contract shall not exceed ____% (____ per cent) of the Contract Price (excluding Taxes and Duties).
- ii) The Parties agree that the performance liquidated damages are a genuine and reasonable pre-estimate of the damages likely to be sustained by JIL as a result of the Contractor's breach of its obligations of this Contract. If the obligation to pay performance liquidated damages pursuant to this Clause 6.5.3 is found for any reason to be void, invalid or otherwise inoperative so as to disentitle JIL from claiming performance damages, JIL shall be entitled to claim against the Contractor for damages at law resulting from the Contractor's breach of its obligations as set out in this Contract.
- iii) Save in the case of fraud, deliberate default or reckless misconduct, the performance liquated damages described above shall be JIL's remedy for the Contractor's breach of its obligations under the Contract, other than in the event of termination under Clause 12.2.1. Payment of performance liquated damages shall not relieve the Contractor from its obligation to achieve Works completion, or from any other duties, obligations or responsibilities which it may have under the Contract and applicable Law.
- iv) The Contractor agrees that, the overall cap on the liquidated damages including performance liquidated damages under this Clause 6.5 shall be **10% (Ten percent) of the Contract Price**. The Contractor further acknowledges that, the liquidated damages shall be paid by the

Contractor to JIL in compliance with the foregoing provisions, JIL shall also be entitled to recover all other rights and/or remedies against the Contractor if permitted by the Applicable Laws and as per contract documents.

6.6 Suspension of Work

- 6.6.1 The Engineer-in-charge may at any time instruct the Contractor to suspend progress of part or all of the Works. During suspension, the Contractor shall protect, store and secure such part of the Works against any deterioration, loss or damage. JIL shall grant such extension in time for completion of Work on account of such period of suspension, as shall in the opinion of the JIL's Representative be fair and reasonable.
- 6.6.2 Promptly upon providing Contractor with instruction regarding the suspension, Engineer-in-charge shall meet with Contractor to review the progress of the completed Works and the status of Works that are in progress. In addition, Engineer-in-charge and Contractor shall meet to review the advantages and disadvantages of having Contractor complete during the suspension period certain Works that are in progress. Contractor shall follow Engineer-in-charge's written instructions with respect to performing Works during the suspension period and Contractor shall be paid for such Works in accordance with the Schedule of Payments notwithstanding the suspension.

6.7 Consequences of Suspension

- 6.7.1 If the Contractor suffers delay and/or incurs Cost in following the Engineer-in-charge's instructions under Clause 6.5 and in resumption of the Works, the Contractor shall give prompt notice thereof to the Engineer-in-charge, with a copy to JIL. After receipt of such notice the Engineer-in-charge shall proceed in accordance with Clause 2.5 to agree or determine any extension of time to which the Contractor is entitled under Clause 6.3; and shall notify the Contractor accordingly. The Contractor shall not be entitled to such extension if the suspension is due to a cause attributable to the Contractor.
- 6.7.2 The Contractor shall not be entitled to extension of time for, making good any deterioration, defect or loss caused by faulty design, workmanship or materials, or by the Contractor's failure to take the measures specified in Clause 6.5.

6.8 Prolonged Suspension

- 6.8.1 If suspension under Clause 6.5 has continued for more than ninety (90) Days, and the suspension is not due to a cause attributable to the Contractor, the Contractor may by notice to the Engineer-in-charge require permission to proceed within twenty (20) Days. If permission is not granted within that time, the Contractor may treat the suspension as a Variation under Clause 10 regarding the affected part of the Works. If such suspension affects the whole of the Works from Contractor's scope of work under the Contract, the Contractor may terminate his employment and proceed in accordance with Clause 12.5.

6.9 Resumption of Work

- 6.9.1 After receipt of permission or of an instruction to proceed, the Contractor shall, after notice to the Engineer-in-charge, and together with the Engineer-in-charge, examine the Works and the Machinery and Materials affected by the suspension.

6.9.2 If JIL has taken over risk and responsibility for the suspended Works, risk and responsibility shall revert to the Contractor 14 (fourteen) Days after receipt of the permission or instruction to proceed.

6.10 Burden of Proof

6.10.1 In case of a dispute regarding the application of the provisions of this Clause, including any dispute as to whether Contractor is entitled to an extension of the Time for Completion, Contractor shall have the burden of proof as to its entitlement to relief under this Clause.

6.11 Foreclosure of Contract in Full or in Part Due to Abandonment or Reduction in Scope of Work.

6.11.1 If at any time after acceptance of the tender, JIL or Engineer-in-charge decides to abandon or reduce the scope of the Work for whatsoever reasons and hence does not require the whole or any part of the Work to be carried out, the Engineer-in-Charge shall give notice in writing to that effect to the Contractor and the Contractor shall have no claim to any payment of compensation or otherwise whatsoever on account of any profit or advantage which he might have derived from execution of the Work in full but which he could not derive in consequence of the fore-closure of the whole or part of the Work. The Contractor shall be paid at Contract rates for full amount of the Work executed at site and in addition, a reasonable amount as certified by the Engineer-in-Charge for the items hereunder mentioned which could not be utilized on the Work to the full extent because of the foreclosure: -

- i) Appropriate percentage of any expenditure incurred on preliminary works, e.g., temporary access roads, temporary labour huts, staff quarters & site office, storage accommodation and water storage tanks.
- ii) JIL shall have the option to either take over Contractor's materials or any part thereof, either brought to Site or ordered such that the Contractor is legally bound to accept delivery from suppliers, provided however, that the quantity of such materials is not in excess of reasonable requirement of Work, or to pay the cost of the same to the Contractor at mutually agreed rates. The decision of the Engineer-in- Charge in respect of the reasonable quantity required for Work will be final and conclusive.
- iii) The reasonable cost of repatriation of all the Contractor's staff and workmen employed on or in connection with the Work at the time of such foreclosure provided that the Contractor shall, if required by the Engineer-in-Charge, furnish to him books of account, wage books, time sheets and other relevant documents as may be necessary to enable him to certify the reasonable amount payable under this condition.

7 TESTS ON COMPLETION

7.1 Contractor's Obligations

7.1.1 The Contractor shall carry out the Tests on Completion in accordance with the Technical Specifications, this Clause, and Clause 5.4, after providing the documents in accordance with the Construction Drawings. The Contractor shall give to the Engineer-in-charge 45 (forty-five) Days' notice of the date after which the Contractor will be

ready to carry out the Tests on Completion. Unless otherwise agreed, such Tests shall be carried out within 14 (fourteen) Days after this date, on such Day or Days as the Engineer-in-charge shall instruct.

- 7.1.2 In considering the results of the Tests on Completion, the Engineer-in-charge shall make allowances for the effect of any use of the Works by JIL on the performance or other characteristics of the Works with such allowances for degradation being those set forth in the Technical Specifications. Specific Tests on Completion are identified in the Technical Specifications and are generally categorized as Performance Tests.
- 7.1.3 As soon as the Works have passed the Tests on Completion, the Contractor shall provide the Engineer-in-charge and JIL with a report of the results of all such Tests.
- 7.1.4 If during any Tests on Completion it is discovered that the Works cannot be operated in a safe manner in accordance with Prudent Practices, the Test shall be terminated and the defective system or component replaced or repaired by Contractor, whereupon the Test shall start over.

7.2 Preparation for Performance Tests

- 7.2.1 Performance Tests shall be performed by Contractor utilizing JIL's normal complement of operating personnel and Contractor's employees under Contractor's direction and supervision. Contractor shall give to the Engineer-in-charge notice when it believes that the Works are complete in accordance with the Technical Specifications. Within fifteen (15) Days after receipt of such notice, Engineer-in-charge shall inspect such Works and, if it agrees, it shall issue to Contractor a Completion Certificate in the form set forth in Schedule 3. If Engineer-in-charge disagrees, it shall notify Contractor of the deficiencies, which Contractor shall cure and then re-notify Engineer-in-charge when it believes that the Works is ready for reassessment.

7.3 Punch List

- 7.3.1 No Completion Certificate will be issued until such time as a Punch List has been prepared. Contractor and Engineer-in-charge shall jointly prepare a Punch List prior to the anticipated date of Completion. Contractor shall provide it to JIL and Engineer-in-charge together with an estimate of the cost and time to complete and/or correct each Punch List item. Engineer-in-charge shall notify Contractor whether that it accepts such Punch List and estimate or shall otherwise state its reasons for disagreement therewith in reasonable detail; provided, however, that acceptance or rejection thereof shall not relieve Contractor of its liability to complete or correct the Punch List items. JIL may withhold from amounts otherwise payable hereunder an amount equal to 100 percent (hundred%) of the estimated value of each Punch List item until Contractor has completed that item. Upon Contractor's completion of each Punch List item and issuance of an invoice by Contractor to JIL with respect to such item, JIL may, but shall not be required, if such amount otherwise be due hereunder, to release to Contractor the entire amount withheld with respect to such completed item. If Contractor fails to complete all Punch List items within one hundred eighty (180) Days after the date of Taking-Over (unless otherwise agreed between JIL and the Contractor), JIL may complete, or cause to be completed, any item which Contractor has so failed to complete. In such case, JIL may deduct the related costs (which shall include third party costs and costs of JIL) of such item from the amount withheld with respect to such item and pay the remaining amount withheld, if any, to Contractor.

7.4 Conduct of Performance Tests

- 7.4.1 Guidelines for the conduct of the Performance Tests are set forth in the Technical Specifications. No later than ninety (90) Days prior to the commencement of the Performance Tests, Contractor will submit to Engineer-in-charge its proposed detailed testing of procedures (the "Test Procedures") for the conduct of Performance Tests. The Test Procedures shall be in accordance with the Technical Specifications. Engineer-in-charge will review and respond to Contractor's proposed Test Procedures within thirty (30) Days of the submission, and the Parties and Engineer-in-charge shall meet to finalize the Test Procedures within five (5) Days of Engineer-in-charge's response. Contractor will submit the final version of the Test Procedures to Engineer-in-charge and JIL not more than fifteen (15) Days prior to the commencement of the Performance Tests.
- 7.4.2 The Parties shall agree on the data to be used for analysis, and the analysis will be performed by Contractor. If JIL observes any Defects or Deficiencies in the Works during any Performance Test, JIL shall promptly notify Contractor in writing, and if in JIL's judgment such Defect or Deficiency calls into question the validity of the Performance Test or poses any risk of damage or injury to property or persons, JIL may direct that the Performance Test be stopped and restarted after appropriate corrective action has been taken by Contractor at Contractor's sole cost and expense. JIL and Contractor shall cooperate in good faith in determining when or to what extent the Project will be taken out of service in order to take corrective measures; provided, however, that JIL shall not unreasonably interfere with Contractor's preparations for and conduct of any Performance Test.
- 7.4.3 The Performance Testing shall be deemed to be successfully completed when the Contractor has successfully completed all of the criteria specified in the Technical Specifications at levels meeting or exceeding the Taking-Over Levels. Once Contractor has successfully completed the Performance Testing, Contractor may request that the Engineer-in-charge issue to Contractor a Taking-Over Certificate in the form set forth in schedule 5.

7.5 Final Acceptance.

- 7.5.1 Final Acceptance shall be deemed to occur when the Contractor has: (a) successfully completed (i) the criteria specified in the Technical Specifications; and (b) fully completed all the Works, including the Punch List, free of Defects or Deficiencies. Upon Contractor achieving Final Acceptance, Engineer-in-charge shall issue an Final Acceptance Certificate in the form set forth in Schedule 4.

7.6 Issuance of Certificates

- 7.6.1 With respect to the obligation of Engineer-in-charge to issue certificates as called for in this Clause, Engineer-in-charge agrees to promptly issue the certificate and retroactively date such certificate as of the date the event giving rise to the certification was completed, if the criteria for the issuance of such a certificate have been satisfied.

7.7 Retesting

- 7.7.1 If the Works fail to pass the Tests on Completion, Clause 5.4 and Clause 5.5 shall apply, and the Engineer-in-charge or the Contractor may require such failed Tests on

Completion, and the Tests on Completion on any related work, to be repeated under the same terms and conditions.

7.8 Modifications to Achieve Passage of Tests on Completion

7.8.1 JIL and Contractor shall confer and mutually agree upon any corrective measures or modifications to the machinery to be taken by Contractor to achieve passage of the Tests on Completion; provided, however, that, such corrective measures or modifications must not adversely affect in any material respect the operation or maintenance of the machinery after Final Acceptance. No automatic controls or safety protections may be temporarily bypassed to achieve passage of the Tests on Completion.

8 TAKING-OVER

8.1 Taking-Over Certificate

8.1.1 The Works shall be taken over by JIL when they have been completed in accordance with the Contract (except as described in sub-paragraph 8.1.2(ii) below), have passed the Tests on Completion and a Taking-Over Certificate (in the form contained at 0 for the Works has been issued or deemed to have been issued in accordance herewith.

8.1.2 The Contractor may apply by notice to the Engineer-in-charge for a Taking-Over Certificate not earlier than fourteen (14) Days before the Works will, in the Contractor's opinion, be complete and ready for Taking-Over. The Engineer-in-charge, within twenty-eight (28) Days after the receipt of the Contractor's application shall conduct a joint survey of Work with the Contractor and prepare a joint list of defects, which shall be rectified by the Contractor within the period as may be specified by the Engineer-in-charge. The Work shall be taken over by JIL after the rectification of defects and JIL shall:

- i) Issue the Taking-Over Certificate to the Contractor, stating the date on which the Works were completed in accordance with the Contract (except for minor outstanding work that does not affect the use of the Works for their intended purpose and which does not constitute a Defect or Deficiency) including passing the Tests on Completion; or
- ii) Reject the application, giving his reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued and the Contractor shall then complete such work before issuing a further notice under this Clause.

8.1.3 Where the completion of the Work is substantially achieved and some minor works remain to be completed because of some instructions/ requirement of JIL, then JIL may issue a provisional Certificate of Completion of the Work with an attachment detailing the remaining Work. These remaining Works shall be completed by the Contractor during the Defect Liability Period.

8.2 Interference with Tests on Completion

8.2.1 If the Contractor is prevented from carrying out the Tests on Completion by JIL's failure to perform its obligations hereunder or its breach of the Contract or JIL elects to proceed into commercial operation of the Project, Contractor may request an

extension of the Time for Completion pursuant to Clause 6.3.

9 DEFECTS LIABILITY

9.1 Completion of Outstanding Work and Remedying Defects

- 9.1.1 The 'Defect Liability Period' shall mean a period of 12 (twelve) months, reckoned from the certified date of Completion of Work.
- 9.1.2 The Contractor shall be responsible for making good as soon as practicable any defect in or damage to any section or part of the Work which may appear or occur during the Defect Liability Period.
- 9.1.3 On noticing the defect/ damage, JIL shall forthwith inform the Contractor the nature of the defect/ damage. The Contractor shall repair, rectify and replace such defect/ damage to the satisfaction of JIL within reasonable time, but before the expiry of the Defect Liability Period. In case, the Contractor's engagement terminated, the liability to repair, rectify and replace defects/damages still meted on the Contractor and final payment/settlement of accounts will not take place till all repair, rectification and replacement works get over to the complete satisfaction of the JIL
- 9.1.4 Cost of Execution of Work of Repair, etc.

All repair Work shall be carried out by the Contractor at his own expense if the necessity thereof shall, in the opinion of the Engineer-in-Charge, be due to the use of materials or workmanship not in accordance with the Contract, or due to neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract. If, in the opinion of the Engineer-in-Charge, such necessity shall be due to any other cause, the value of such Work shall be ascertained and paid for as if it was additional Work.

- 9.1.5 Remedy on Contractor's failure to carry out the requisite repair work:

If the Contractor shall fail to do any such Work as aforesaid required by the Engineer-in-Charge, JIL shall be entitled to employ any other agency to carry out the same and i.e. all such Work which, in the opinion of the Engineer-in-Charge, the Contractor was liable to do at his own expense under the Contract, then all expenses consequent there on or incidental thereto shall be recoverable from the Contractor by the 'JIL' or may be deducted by the Engineer-in-Charge from any amounts due or which may become due to the Contractor. All works / rectifications to be done and performed by the Contractor is per approved norms of New Okhla Industrial Development Authority/GNIDA/YEIDA etc.

9.2 Action in Case of Bad Work

If the Engineer-in-Charge is satisfied that the construction of any part of the Work is faulty or that the materials used in the same are inferior to the prescribed specifications or that any materials or articles provided by the Contractor are not in accordance with the Contract, he may, notwithstanding that such Work, material or articles may have been passed, certified or paid for, serve the Contractor with notice in writing specifying the Work, material or articles of which he complains and require the Contractor to remedy such defects or to replace such material or articles within a specific period of time. **If the Contractor fails to comply in all respect with the requirement of such notice, the Engineer-in-Charge may himself remedy**

such defect, or as the case may be replace such material or articles, and the Contractor shall pay all expenses, incurred by the Engineer-in-Charge in so doing and the certificate in writing of the Engineer-in-Charge as to the amount of any such expenses shall be final and binding upon the Contractor. . However, all liability arising from any poor quality of work or material untoward incident or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.

9.3 Exclusions

9.3.1 The Contractor does not warrant the Plant and Equipment, machinery and Materials or any repaired or replacement parts against normal wear and tear, including that due to operation beyond the design conditions, which conditions shall include environmental conditions. The warranties and remedies set forth herein are further conditioned upon the proper operation, and maintenance of the machinery and conformance with the operation and maintenance manuals. JIL shall keep proper records of operation and maintenance during the Warranty period. These records shall be kept in the form of log-sheets and copies shall be submitted to the Contractor upon its request.

9.4 Cost of Remedying Defects / Repairs

9.4.1 All work referred to in Clause 9 shall be executed by the Contractor at its own cost if the necessity for such work is due to:

- i) The design of the Works.
- ii) Plant and Equipment, machinery, Materials or workmanship not being in accordance with the Contract; or
- iii) Failure by the Contractor to comply with any of his other obligations.

9.4.2 If such necessity is due to any other cause, the Engineer-in-charge shall notify the Contractor accordingly and seek agreement to an adjustment to the Contract Price. In this event, Clause 10.3 shall apply to such work. All costs incidental to Contractor's performance of its obligations, including the removal, replacement and reinstallation of materials and equipment necessary to gain access to Defects or Deficiencies and retesting of repaired or replaced portions of the Works (if appropriate in accordance with industry standards) shall be borne by Contractor. Any duties or taxes assessable for the importation of items required to meet Contractor's obligations herein shall also be borne by Contractor unless an exemption from such duties or taxes is available to JIL, in which case JIL shall cooperate with Contractor in order to avoid (or enable Contractor to recover) such duties or taxes.

9.5 Extension of Warranty Period

9.5.1 Any portion of the Works repaired or replaced by Contractor within the Warranty Period shall be warranted by Contractor for a period of one year from the date of such repair or replacement of such portion of the Works, except in the event that such repair or replacement is required to be done due to failure by JIL or a third party to carry out the operation of the Works in accordance with the relevant operation and maintenance

manuals.

9.6 Failure to Remedy Defects

- 9.6.1 If the Contractor fails to remedy any Defect or Deficiency within a reasonable time, JIL or the Engineer-in-charge may fix a date on or by which to remedy the Defect or Deficiency and give the Contractor reasonable notice of such date.
- 9.6.2 If the Contractor fails to remedy the Defect or Deficiency by such date and the necessity for such work is due to a cause stated in Clause 9.4, JIL may (at his sole discretion):
- i) Carry out the work himself or by others, in a reasonable manner and at the Contractor's risk and cost, but the Contractor shall have no responsibility for such work: the costs properly incurred by JIL in remedying the Defects or Deficiencies or other damage shall be recoverable from the Contractor by JIL and may be deducted from the Contract Price or taken from the Performance Security.
 - ii) Require the Engineer-in-charge to determine and certify a reasonable reduction in the Contract Price; or
 - iii) If the Defect or Deficiency is such that JIL has been deprived of substantially the whole of the benefit of the Works or parts of the Works, terminate the Contract in respect of such parts of the Works as cannot be put to the intended use, JIL shall then be entitled to recover all sums paid for such parts of the Works together with the cost of dismantling the same, clearing the Site and returning machinery, Plant and Equipment and Materials to the Contractor, or otherwise disposing of them in accordance with the Contractor's instructions, and Clause 12.1 shall not apply.

9.7 Removal of Defective Work

- 9.7.1 If the Defect or Deficiency is such that it cannot be remedied expeditiously on the Site, the Contractor may, with the consent of the Engineer-in-charge or JIL, and upon Contractor's production of security acceptable to JIL relating to the part of the Works to be removed, remove from the Site for the purposes of repair any part of the Works which is defective or damaged at the expense of Contractor.

9.8 Further Tests

- 9.8.1 If the remedying of any Defect or Deficiency or damage is such that it may affect the performance of the Works, JIL may require that Tests on Completion be repeated to the extent necessary. The requirement shall be made by written notice within twenty-eight (28) Days after the Defect or Deficiency or damage is remedied. Such Tests shall be carried out in accordance with Clause 7 and at the cost of the Contractor, inclusive of the costs of operating personnel.

9.9 Right of Access

- 9.9.1 Within the Contract Period and Warranty Period the Contractor shall have the right of access, at its own risk and cost, to all parts of the Works and to records of the working and performance of the Works, except as may be inconsistent with any reasonable security restrictions by the organization responsible for operating the Works.

9.9.2 Any right of access pursuant to this Clause shall be exercised in a manner so as to minimize the impact on the operation and maintenance of the Works and shall be exercised having full regard to JIL's operational requirements, the requirements of the PPA and in consultation with the Engineer-in-charge.

9.10 Contractor to Search

9.10.1 The Contractor shall, if required by the Engineer-in-charge, search for the root cause of any Defect or Deficiency under the direction of the Engineer-in-charge. Unless the Defect or Deficiency is one for which the Contractor is liable, the Cost of such search shall be reimbursed to Contractor on top of the Contract Price.

9.11 Performance Certificate

9.11.1 The Contract shall not be considered to be completed until the Performance Certificate has been signed by the Engineer-in-charge and delivered to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.

9.12 Unfulfilled Obligations

9.12.1 After the Contract Period, the Contractor shall remain liable for the fulfillment of any obligation that remains unperformed at that time. For the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force.

9.13 Defects or Deficiencies Technician

9.13.1 To provide defects liability, operations and maintenance support and training for JIL's staff, Contractor shall provide, without additional cost to JIL, the services of one (1) Defects or Deficiencies technician who shall remain at the Project for a period of twelve (12) months starting on the Taking-Over Date. The Defects or Deficiencies technician shall work a normal workweek of forty (40) hours at the Project and shall be entitled to vacations and holidays in accordance with Contractor's normal employment policies.

9.14 JIL's Right to Withhold and/or Set Off Payment

9.14.1 The Engineer-in-charge/JIL shall have the right to set-off from monies otherwise due to the Contractor any claims or charges that JIL has against Contractor under this Contract. Such claims or charges may include, but are not limited to, costs incurred by JIL as a result of the Contractor's failure to perform Work, the remedying of Defects or Deficiencies, payment of back charges and the payment of liquidated damages set forth in this Contract.

9.15 Reduction in Rate for Substandard Work

9.15.1 The Engineer-in-charge may accept the substandard or defective Work at reduced rates provided that the substandard Work is not seriously defective. Further, the Engineer-in-charge shall have the right to cause an audit and technical examination of Work, running and Final Bill of the Contractor including all supporting vouchers, abstract etc. to be made before or after the payment of the Final Bill and if as a result of such acceptance of substandard or defective Work, audit and technical examination, any sum is found to have been over paid in respect of any Work done by the Contractor

under the Contract or any Work claimed to have been done by him under the Contract but found not to have been actually executed, the Contractor shall be liable to refund the over payment and it shall be lawful for JIL to recover the same from him in any manner, legally permissible; and if it is found that the Contractor was paid less than what was due to him under the Contract, the amount of such under payment may be duly paid by JIL to the Contractor. The reduction in rate as decided by the Engineer-in-Charge shall be binding on the Contractor.

10 VARIATIONS

10.1 Right to Vary

10.1.1 The Engineer-in-Charge shall have powers to make any variation of the form, quality or quantity of the Work or any part thereof that may in his opinion be necessary and for that purpose, or if for any other reasons it shall in his opinion be desirable, he shall have power to order the Contractor to do and the Contractor shall do any (one or more) of the following: -

- i) Increase or decrease to any extent the quantity of any item of work included in the Contract.
- ii) Omit or substitute any such Work.
- iii) Change the character or quality or kind of any such Work.
- iv) Change the levels, lines position and dimensions of any part of the Work.
- v) Execute additional Work of any kind necessary for the Completion of the Work and no such variations shall in any way vitiate or invalidate the Contract, but the value, if any of all such variations shall be taken into account in ascertaining the Contract Value.
- vi) Change any specified sequence, method or timing of construction of any part of the Work.

10.1.2 No such variation shall be made by the Contractor without order in writing of the Engineer-in-Charge but no order in writing shall be required for increase or decrease in the quantity of work where such increase or decrease is not the result of an order given under this clause, but is the result of the quantities, computed from the approved drawings, exceeding or being less than those stated in the BOQ.

10.1.3 If the Construction Documents or Works are not in accordance with the Contract, the rectification shall not constitute a Variation.

10.1.4 In the event of any Variation or request by Engineer-in-charge for a proposal for a Variation, Contractor shall provide such information as Engineer-in-charge may reasonably request. Detailing of or refinements to the Construction Documents shall not constitute a Variation.

10.1.5 If any change in Laws requires a change to the Works or if the Contractor feels any other Work is necessary for Completion of the Project, the Contractor shall be entitled to initiate a Variation, which includes equitable adjustments to the Contract Price and to the Scheduled Taking-Over Date. Such Variation shall be subject to the approval of

the Engineer-in-charge.

10.2 Value Engineering

10.2.1 The Contractor may at any time submit to the Engineer-in-charge a written proposal which in the Contractor's opinion will reduce the cost of constructing the Works, or improve the efficiency or value to JIL of the completed Works, or otherwise be of benefit to JIL. Any such proposal shall be prepared at the cost of the Contractor and shall include the items listed in Clause 10.3.

10.3 Variation Procedure

10.3.1 If the Engineer-in-charge requests a proposal or in case in which the Contractor is entitled to initiate a Variations, prior to JIL's instructing a Variation, the Contractor shall prepare and submit as soon as practicable:

- i) a description of the proposed design and/or work to be performed and a Programme for its execution;
- ii) the Contractor's proposal for any necessary modifications to the Programme according to Clause 3.15;
- iii) the Contractor's proposal for adjustment to the Contract Price, Time for Completion and/or modifications to the Contract, accompanied by detailed pricing.
- iv) a statement whether and the extent to which, in its opinion, the proposed Variation would, notwithstanding the exercise of all due skill and care, result in defective design or construction or prevent the Contractor from performing its obligations under the Contract, including defects liability and the Performance Guarantees.

10.3.2 As soon as practicable after receipt of such proposals the Engineer-in-charge shall within fifteen (15) days from the date of receipt of this proposal either approve or disapprove the draft Variation, in writing, or request additional time to consider the Contractor's proposal.

10.3.3 The Engineer-in-charge shall review this estimate with Contractor for the purpose of determining whether to proceed with the Variation and, if so, for the purpose of agreeing on the matters set forth therein, including a mutually acceptable adjustment to the Contract Price and/or the Programme, if any, if the proposed change requires a modification of the Technical Specifications.

10.3.4 Compliance by the Contractor with the provisions of this Clause 10.3 is a condition precedent to the Contractor's entitlement to an extension of time or adjustment to the Contract Price or reimbursement of any additional cost.

10.3.5 If the Engineer-in-charge instructs or approves a Variation, he shall proceed in accordance with Clause 2.5 to agree or determine adjustments to the Contract Price, Time for Completion and Schedule of Payments. Unless JIL and Contractor agree to a fixed price adjustment to the Contract Price for a Variation Order.

10.3.6 On receipt of an order for a Variation, the Contractor shall forthwith proceed to carry

out the Variation and be bound by the Contract in so doing as if such Variation was stated in the Contract. The Works shall not be delayed pending the granting of an extension of time or an adjustment to the Contract Price.

- 10.3.7 If the Engineer-in-charge approves the Variation in writing, JIL and the Contractor shall then, as soon as practicable, sign the Variation Order according to 0, which shall operate as an amendment to the Contract. If the signed Variation Order includes extension of Time for Completion, adjustments to the Contract Price or to the Schedule of Payments, JIL and the Contractor shall consequently, as soon as practicable, sign the Amendment to the Contract.

10.4 Adjustments for Changes in Laws

- 10.4.1 The Contract Price shall be adjusted as mutually agreed in writing to take into account of any increase or decrease in Cost resulting from a change in scope of Works arising from a change or enactment in the Applicable Laws, including the introduction of new Laws and the repeal (without re-enactment or consolidation) or modification of existing Laws, but excluding:

- i) any change in Applicable Laws relating to net income or profit;
- ii) any change in Laws already published or approved on the Execution Date (but not yet in force or implemented) or change in interpretation of such Laws by any government official after the Execution Date, which affects the Contractor in the performance of its obligations under the Contract; and
- iii) any change in Laws relating to Taxes, other than that envisaged in Clause 10.5 and in such cases the Contract Price shall be adjusted only in the manner specifically provided in such clause.

- 10.4.2 For the avoidance of doubt, the Parties agree that the Change in Law will only be considered when there is a change in scope of Works due to occurrence of such Change in Law Event.

- 10.4.3 After receiving the notice/request pursuant to sub-Clause 10.4.1 above, JIL shall consider the said request and take appropriate decision in this regard, however in all eventualities, the decision of JIL shall be final and binding upon the Contractor

10.5 Adjustments for Changes in Taxes

- 10.5.1 In case of any Change in Indirect Taxes after the acceptance of LOI and execution of the Contract, the Contract Price shall be accordingly increased or decreased by the amount of the increase or decrease in Taxes (other than those relating to the Contractor's Equipment).

- 10.5.2 However, in case there is delay in completion of the Works beyond the timelines set in the Programme/mile stone due to reasons solely attributable to the Contractor (or its Sub-Contractors), then any change in Taxes over and above those specified under this Clause 10.5 during the delayed period beyond the timelines set out in the Programme shall be solely to Contractor's account, and JIL shall not be liable for the same in any manner whatsoever. Provided however, that in case any such change in Taxes results in reduction of Contractor's tax liability (whether by way of reduction in the tax rates concessions, exemption, rebates or otherwise) the benefit of such reduction in Taxes

shall be passed on to JIL.

10.5.3 The Contractor shall inform JIL of any change in Taxes within 15 (fifteen) days of such variation or change in Taxes coming into effect for any claims under this Clause 10.5.

10.5.4 In the event the amounts, nature or rates set out are wrong, incorrect or misleading or any other Taxes are applicable or there has been a miscalculation by Contractor, JIL shall have no liability to reimburse/pay to Contractor such excess or additional Taxes. Provided however, if the Taxes/fees levied/imposed/calculated are inapplicable or lower than the amounts indicated in the Schedule of prices set out, JIL shall be entitled to recover the difference from the Contractor and the Contract Price shall be reduced to such extent.

10.5.5 The effect of any Changes in Taxes shall be limited exclusively to the Indirect Taxes as applicable on the transaction between JIL and Contractor and as indicated in Bill of Quantities, and not on any transaction between Contractor and any of its vendors or Sub-contractors. The Contract Price shall not be increased as a consequence of an increase in Taxes that result from any act or omission of Contractor, including its failure to pay any Taxes for which it is liable and/or misinterpretation of the applicability of any Taxes.

10.6 No Adjustments for Changes in Costs

10.6.1 The Contract Price shall not be subject to any adjustment in respect of any rise or fall in the cost of labour, materials or any other matters affecting the cost of performing the Works.

10.7 Termination by JIL due to Changes in Laws and/or Changes in Taxes

10.7.1 JIL shall be entitled to terminate the Contract, if due any Changes in the Laws or any Changes in the Taxes, JIL (at its sole discretion) decides that it is uneconomical to complete the Works or perform the Contract, by giving a 15 (fifteen) days written notice to the Contractor. In case of termination of the Contract under this Clause 10.7, JIL shall pay the Contractor for Works which have been completed up to the date of issuance of notice of termination and the Contractor shall deliver any required Goods, all Contractor's Documents, and other design documents made by or for it, to JIL.

11 CONTRACT PRICE AND PAYMENT

11.1 The Contract Price

11.1.1 Unless otherwise stated in the Special Conditions of Contract:

- i) payment for the Works shall be made on the basis of item rates or as agreed between the parties, subject to adjustments in accordance with the Contract; and
- ii) the Contractor shall pay all taxes, cess, duties and fees required to be paid by them under the Contract, and the Contract Price shall not be adjusted for any of these costs, except as stated in Sub-Clause 10.1.5 .

11.2 Advance Payment

11.2.1 Mobilization advance and secured advance payments shall be as per Special condition of contract.

11.3 Adjustment of Advance Payment

11.3.1 The amount of advance released shall be recovered from the Contractor's Statement/running account bills. The advance payment shall be adjusted from interim payments under Sub-Clause 11.7 pertaining to the corresponding items of BOQ involving the use of the materials for which the advance was made. Deductions shall be made at the amortization rate stated in the Special Conditions of Contract (or, if not so stated, as stated in this Clause, which shall be applied to the amount otherwise due (excluding the advance payment and deductions and repayments of retention), until such time as the advance payment has been repaid.

11.3.2 If within a period of 3 (three) months from date of payment of advance, the Contractor does not consume in Works the materials against which secured advance was sanctioned, EIC shall be at liberty to recover the entire amount of advance along with all such amounts as damages / penalty from the Contractor's Statement or otherwise any time thereafter in stages or in one go.

11.4 Application for Interim Payments

11.4.1 The Contractor shall submit a Statement in six copies to JIL after the end of the period of payment stated in the Contract (if not stated, after the end of each month), in a form approved by JIL, showing in detail the amounts to which the Contractor considers himself to be entitled, together with supporting documents which shall include the relevant report on progress in accordance with Sub-Clause 3.16. The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

- i) the estimated contract value of the Works executed, and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (ii) to (vi) below);
- ii) any amounts to be added and deducted for changes in Applicable Laws and changes in cost, in accordance with Sub-Clause 10.1.5 and Sub-Clause 10.2.1 ;
- iii) any amount to be deducted for retention, calculated by applying the percentage of retention stated in the Special Conditions of Contract to the total of the above amounts, until the amount so retained by JIL reaches the limit of Retention Money (if any) stated in the Special Conditions of Contract.
- iv) any amounts to be added and deducted for the advance payment and repayments in accordance with Sub-Clause 11.2 ;
- v) any other additions or deductions which may have become due under the Contract or otherwise, including those under Clause 16 ; and
- vi) the deduction of amounts included in previous Statements.

11.5 Schedule of Payments and Retention Money

11.5.1 The Contractor shall submit monthly running account bills along with all supporting

documents and with all requisite attachments and information as prescribed by JIL. The monthly bills shall be based on joint measurements of Work done at Site. The RA bills shall reflect the amount of work done will be as against the agreed work to be done in terms of the contract. JIL shall pay the Contractor 70% of interim running account bill value within 10 days as Interim Payment from the date of submission of bill with all supporting documents/check lists and balance within 30(thirty) working days from date of bill certification by "EIC" and due checking of the same. The Interim Payment against the next running bill shall be considered only after settlement & payment of the current bill. In case after releasing of Interim Payment against a running bill a discrepancy more than 10% amount of certified bill vs initially presented bill is found based on which Interim Payment was released, no Interim Payment shall be considered for any future running bills against the contract. However, any procedural delay in payment beyond 30(thirty) working days shall not entitle the Contractor to any interest on delayed payment of the due amount.

- 11.5.2 Deductions from the Contractor's bills shall be made on account of Retention Money, Income Tax, etc. as per the statutory laws and on account of any other dues recoverable from the Contractor.

All such Interim Payments to the Contractor shall be treated as provisional payments and shall be subject to final adjustment in the payment of the Final Bill after Completion of the Work.

11.6 Retention Money

- 11.6.1 Retention money shall be deducted from the Contractor's Bill @ 5 % of the value of work paid in the Bill, subject to a maximum amount of 5 % of the Contract **Price** as awarded. The Retention money shall be refunded to the Contractor after satisfactory completion of Defect Liability Period (DLP) or payment of the Final Bill whichever is later. Further, if the Contractor expressly requests in writing he may be permitted to convert the amount of Retention money deducted from his running bills into bank guarantee of equal amount valid till expiry of the DLP or payment of Final **Bill** whichever is later.

- 11.6.2 The Contractor shall have option to deposit a bank guarantee of an amount equal to 5 % of the Contract Price as awarded at the time of signing the Contact Agreement, if he does not want any deduction from his progressive bills on account of retention money.

- 11.6.3 The Contractor, if expressly requests in writing, may be permitted by the EIC to submit a bank guarantee of an amount equal to 5 % of value of work done considered for payment of a particular progressive bill, before processing it for payment to avoid deduction of any money from the progressive bill on account of retention money. The bank guarantee submitted shall be valid till expiry of the DLP or payment of Final Bill, whichever is later.

11.7 Interim Payments

- 11.7.1 No amount will be paid until JIL has received and approved the Performance Bank Guarantee. Thereafter, JIL shall within 28 Days after receiving a Bill and supporting documents, give to the Contractor notice of any items in the Bill with which JIL disagrees, with supporting particulars. Payments due shall not be withheld, except that:

- i) if anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
- ii) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by JIL, the value of this work or obligation may be withheld until the work or obligation has been performed.

11.7.2 JIL may, by any payment, make any correction or modification that should properly be made to any amount previously considered due. Payment shall not be deemed to indicate JIL's acceptance, approval, consent or satisfaction.

11.8 Timing of Payments

11.8.1 Except as otherwise stated in Sub-Clause 2.7, JIL shall pay to the Contractor:

- i) the first instalment of the advance payment within 30 days after the Execution Date or within 21 days after JIL receives the documents in accordance with Sub-Clause 3.3 and Sub-Clause 11.2, whichever is later;
- ii) the amount which is due in respect of each Bill, other than the Final Bill, within 45 days after receiving the Bill and supporting documents; and
- iii) the final amount due, within 60 days after receiving the Final Bill and written discharge in accordance with Sub-Clause 11.11 and Sub-Clause 11.12.

11.9 Payment of Retention Money

11.9.1 When the Taking-Over Certificate has been issued for the Works, and the Works have passed all specified tests (including the Tests after Completion, if any), the first half of the Retention Money shall be paid to the Contractor. If a Taking-Over Certificate is issued for a Section, the relevant percentage of the first half of the Retention Money shall be paid when the Section passes all tests. Promptly after the latest of the expiry dates of the Defects Notification Periods, the outstanding balance of the Retention Money shall be paid to the Contractor. If a Taking-Over Certificate was issued for a Section, the relevant percentage of the second half of the Retention Money shall be paid promptly after the expiry date of the Defects Notification Period for the Section.

11.9.2 However, if any work remains to be executed under Clause 9 or Clause 7, JIL shall be entitled to withhold the estimated cost of this work until it has been executed. The relevant percentage for each section shall be the percentage value of the section as stated in the Contract. If the percentage value of a section is not stated in the Contract, no percentage of either half of the Retention Money shall be released under this Sub-Clause in respect of such section.

11.10 Bill at Completion

11.10.1 Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to JIL six copies of a Bill at completion with supporting documents, in accordance with Sub-Clause 11.4, showing:

- i) the value of all work done in accordance with the Contract up to the date stated

in the Taking-Over Certificate for the Works,

- ii) any further sums; which the Contractor considers to be due, and
- iii) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Bill at completion.

JIL shall then give notice to the Contractor in accordance with Sub-Clause 11.7 and make payment in accordance with Sub-Clause 11.8.

11.11 Application for Final Payment

11.11.1 Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to JIL, six copies of a draft Final Bill with supporting documents showing in detail in a form approved by JIL:

- i) the value of all work done in accordance with the Contract, and
- ii) any further sums which the Contractor considers to be due to him under the Contract or otherwise.

11.11.2 The Final Bill shall be examined by JIL who shall decide on the amount payable to the Contractor. The due payment and its certificate shall be released to the Contractor by JIL thereafter. If JIL disagrees with or cannot verify any part of the draft Final Bill, the Contractor shall submit such further information as JIL may reasonably require and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to JIL the Final Bill as agreed. This agreed statement is referred to in these Conditions as the "Final Bill". However, if, following discussions between the Parties and any changes to the draft Final Bill which are agreed, it becomes evident that a dispute exists, JIL shall pay the agreed parts of the draft final statement in accordance with Sub-Clause 11.7 and Sub-Clause 11.8. Thereafter, if the dispute is finally resolved under Sub-Clause 16.2 or Sub-Clause 16.2.2, the Contractor shall then prepare and submit to JIL a Final Bill.

11.12 Discharge

11.12.1 When submitting the Final Bill, the Contractor shall submit a written discharge which confirms that the total of the Final Bill represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the out-standing balance of this total, in which event the discharge shall be effective on such date.

11.13 Final Payment

11.13.1 In accordance with sub-paragraph (iii) of Sub-Clause 11.8.1, JIL shall pay to the Contractor the amount which is finally due, less all amounts previously paid by JIL and any deductions in accordance with Sub-Clause 2.7.

11.14 Cessation of JIL's Liability

11.14.1 JIL shall not be liable to the Contractor for any matter or thing under or in connection

with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

- i) in the Final Bill; and
- ii) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Bill at completion described in Sub-Clause 11.10.

11.14.2 However, this Sub-Clause shall not limit JIL's liability under his indemnification obligations, or JIL's liability in any case of fraud, deliberate default or reckless misconduct by JIL.

12 DEFAULT OF CONTRACTOR

12.1 Notice to Correct

12.1.1 If the Contractor fails to carry out any of his material obligations or if the Contractor is not executing the Works in accordance with the Contract, JIL or Engineer-in-charge may give notice to the Contractor requiring him to make good such failure and remedy the same.

12.1.2 In the event Contractor neglects to make good such failure and remedy the same within the time agreed upon by Engineer-in-charge and Contractor or, if no such time is agreed upon, within such a period as agreed between the parties, JIL may, without prejudice to other remedies JIL may have, undertake such work and deduct the cost thereof, including reasonable overhead and profit, from any payments then or thereafter due Contractor or from the Performance Security. If payments then or thereafter due to Contractor are not sufficient to cover such amounts, Contractor shall pay the difference to JIL on demand.

12.2 Termination

12.2.1 If the Contractor:

- i) fails to comply within the time set under Clause 12.1, with a notice under Clause 1.
- ii) abandons or repudiates the Contract;
- iii) the Contractor fails:
 - a) to commence the Works in accordance with Clause 6.1;
 - b) to proceed with the Works in accordance with Clause 6 or
 - c) to demonstrate that sufficient capability is employed in the performance of the Works to achieve completion within the Time for Completion.
- d) fails to maintains minimum number of labour / plant & machine deployments at project site
- e) shortage of staff, equipment, plant and machinery etc

- f) due to slow work at site or not as per the agreed programme/milestone schedule of the amount of the work to be done,
 - g) quality of work is poor and no effective steps being taken to cure the same
- iv) The Contractor becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under any Applicable Laws) has a similar effect to any of these acts or events;
- v) Contractor fails to comply with a notice issued under Clause 5.5;
 - vi) Contractor assigns the Contract or subcontracts the Works without the required consent.
 - vii) Contractor fails to achieve the Taking-Over Date on or before, the Scheduled Taking Over Date as such date may be extended by time extensions authorized under Clause 6.3;
 - viii) Contractor fails to comply with the requirements of any Applicable Laws and Applicable Permits; or
 - ix) Contractor fails to maintain in full effect all of the performance securities required of Contractor pursuant to Clause 3.3 hereof,
 - x) Contractor withhold any material information from JIL or any wrongful disclosure made by the contractor during the execution of the award or at any later period during the term of the Contract.
 - xi) Contractor conceals the Pendency or initiation of the criminal investigation/litigations against the Contractor Company or on the promoters of the Contractors related to any fraud, embezzlement by the Police Authorities/ED/SFIO/CBI.
 - xii) Pendency or initiation of investigation/litigations against the tendering procedure or if the tendering process is declared null and void by any court or any other forum at any point of time.

then JIL may, after having given notice under Clause 6.1 to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site. The Contractor shall then (i) turn over to Engineer-in-charge all work in process; (ii) remove all Contractor's Equipment from the Site (unless the directive requires that Contractor refrain from such removal so that JIL may utilize the same in accordance with Clause 12.2.2); (iii) assign to JIL, in the manner, at the times, and to the extent directed in writing by Engineer-in-charge, all of the rights, title and interest of Contractor under any Subcontracts or purchase orders relating to the execution of the Contract or the Works that are specifically identified in such directive; and (iv) deliver all Construction Documents, and other design documents made by or for him, to the Engineer-in-charge. The Contractor shall not be released from any of his obligations or liabilities under the Contract. The rights and authorities conferred on JIL and the Engineer-in-charge by the Contract shall not be affected.

- 12.2.2 In the event that the tendering process is challenged at any Court (including Supreme Court of India) or any other forum, for any reason, whatsoever, and the whole tendering process is held null and void, JIL shall be entitled to terminate the Contract at any time without assigning any reasons, whatsoever, and the sole recourse available with the Contractor shall be settlement of account pro rata to the amount of work undertaken by the Contractor. The decision of JIL and/or its Board / Directors / Management or its Authorised Representative/ employees shall be final and binding in this regard. No claims of any nature whatsoever, made by any of the bidder, against any or all of JIL and/or its members or its Authorised Representative/ employees / Management / Board/Directors pursuant to actions taken by JIL, shall be entertain. Further, the Contractor shall have no right to initiate legal action/litigation/investigation against the JIL and/or its members or its Authorised Representative/ employees/Director/Board/Management with respect to the tendering process.
- 12.2.3 If the progress of work is slow and/or the performance of the Work is not to the satisfaction of JIL, JIL shall be at liberty to terminate this Agreement unilaterally and forfeit the Retention Money and invoke the Performance Bank Guarantee submitted by the Contractor as per terms & conditions of the Contract.
- 12.2.4 Termination of Contract shall always be without prejudice to the rights, remedies available to JIL which have accrued prior to termination.

Effects of Termination:-

- 12.2.5 JIL may upon such termination complete the Works himself and/or by any other contractor. JIL or such other contractor may use for such completion so much of the Construction Documents, other design documents made by or on behalf of the Contractor, Contractor's Equipment, Temporary Works, Plant and Equipment, machinery and Materials as he or they may think proper. Upon completion of the Works, or at such earlier date as the Engineer-in-charge thinks appropriate, the Engineer-in-charge shall give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall remove or arrange removal of the same from such place without delay and at his cost.
- 12.2.6 On termination notice/or on any dispute notice given by JIL/EIC, the Contractor shall if allowed by JIL/EIC remove its materials, plant and machinery and same shall be allowed to keep in separately from the project site. Further, consequent to termination, Contractor was not allowed any access to the project site for any purposes whatsoever. Any decision with regard to removal of materials, plant and machinery and access to the Contractor post termination shall be taken by JIL and same shall be binding on the Contractor.
- 12.2.7 Further, on termination notice/or on any dispute notice given by JIL/EIC, any future course of action shall be decided by JIL and it may firstly resorted to Joint Measurement at the site.
- 12.2.8 For removal of all doubts and to remove all ambiguities, it is made clear to the Contractors, that it shall take out and remove all its workforce, materials, power equipment, all other construction equipment with 15 days from the project site starting

from the date of termination/dispute notice. Joint measurement as per above clause shall be carried out within 5 days of such notice given by JIL to the Contractor. In case, the Contractor is not coming forward for joint measurement, same will be done by JIL whose findings are conclusive, final and binding on the Contractor. Also, in case Contractor, fails to take out and remove its materials, power equipment, all other construction equipment within 15 days from the project site starting from the date of termination/dispute notice, JIL shall keep all such materials in a separate area at the project site and continue with project development and construction works either by its own or through newly appointed contractors / agencies as deem fit and necessary in its sole discretion

- 12.2.9 JIL shall have the right to appoint new contractor and carry out the remaining work itself or through any other Contractor. Further to complete the balance work, if any extra cost be incurred by JIL, then the excess cost incurred in execution of balance work shall be recoverable from the payments due to the Contractor under this Contract, or from payment due to the Contractor under any other Contract or as per the applicable laws.

12.3 Payment after Termination

- 12.3.1 After termination under Clause 12.2 , JIL shall not be liable to make any further payments to the Contractor until the costs of execution, completion and remedying of any Defects or Deficiencies, liquidated damages for delay in completion (if any) and all other costs incurred by JIL have been established and paid in full.
- 12.3.2 JIL shall be entitled to recover from the Contractor the extra costs, if any, of completing the Works after allowing for any sum due to the Contractor under Clause 12.3.1 . If there are no such extra costs, JIL shall pay any balance to the Contractor.

12.4 Termination by Mutual Concurrence

- 12.4.1 The Agreement can be terminated by mutual consent of both the parties.
- 12.4.2 .
- 12.4.3 On termination of the Contract, the Contractor shall stop the Work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.
- 12.4.4 The Work done by the Contractor till the date of termination shall be jointly inspected and evaluated. The Contractor shall be entitled to receive net payment from JIL for the amount, evaluated as above, less the amount of recovery due from the Contractor towards advance payments received by it, Liquidated Damages, mandatory taxes and deductions necessary for any other reasons under the provisions of the Contract.

12.5 Lien to Withhold Any Payment Due to The Contractor

- 12.5.1 Any sum of money due and payable to the Contractor (including the security deposit refundable to him) under the Contract may be withheld or retained by way of lien by the Engineer-in-Charge or JIL against any claim of JIL in respect of payment of a sum of money arising out of or under any other Contract made by the Contractor with the Engineer-in-Charge or JIL. The sum or money withheld or retained under this clause

by the Engineer-in-Charge or JIL shall continue to be retained till his claim arising out of the same Contract or any other Contract is recovered in accordance with the terms of the Contract to which the claim pertains, The Contractor shall have no claim for interest or damages whatsoever on this account or other ground in respect of any sum of money withheld or retained under this clause.

13 RISK AND RESPONSIBILITY

13.1 Indemnity

13.1.1 The Contractor shall defend, indemnify and hold harmless JIL, the Engineer-in-charge, and their respective contractors, agents and employees from and against all claims, damages (including any environmental damages), losses and expenses possibly arising during the Contract Period out of or resulting from the Works, including professional services provided by the Contractor as a consequence of the Contractor's breach of its obligations under the Contract during the Contract Period.

13.1.2 These indemnification obligations shall be limited to claims, damages, losses and expenses, which are attributable to bodily injury, sickness, disease or death, or to injury to or destruction of physical property, including consequential loss of use. Such obligations shall also be limited to the extent that such claims, damages, losses or expenses are caused in whole or in part by a breach of a duty of care, imposed by law on the Contractor or anyone directly or indirectly employed by the Contractor or caused by Contractor's breach of its obligations under the Contract during the Contract Period.

13.2 Contractor's Care of the Works

13.2.1 The Contractor shall take full responsibility for the care of the Works and any Plant and Equipment, machinery, Materials, Temporary Works, whether delivered to or placed on the Site or elsewhere in connection with or for the purpose of the Works, from the Commencement Date until the Taking-Over Date when responsibility shall pass to JIL. If the Engineer-in-charge issues a Taking-Over Certificate for any section or part of the Works, the Contractor shall cease to be responsible for the care of that section or part from the date of issue of such Taking-Over Certificate, when responsibility shall pass to JIL.

13.2.2 The Contractor shall take responsibility for the care of any outstanding work which is required to be completed prior to the expiry of the Warranty Period until the Engineer-in-charge confirms in writing that such outstanding work has been completed.

13.2.3 If any loss or damage happens to the Works arising from any cause during the period for which the Contractor is responsible, the Contractor shall rectify such loss or damage, at his cost, so that the Works conform to the Contract. The Contractor shall also be liable for any loss or damage to the Works caused by any operations carried out by the Contractor after the Taking-Over Date. **However, all liability arising from any untoward incident or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.**

13.3 Employees

13.3.1 Neither Party nor its directors, officers, employees, agents, Affiliates or

representatives, nor any independent contractor engaged by it in connection with the performance of this Contract, shall be deemed an employee of the other Party. Neither Party shall bring any claim against the other Party or its directors, officers, Affiliates, agents, representatives, employees or independent contractors with respect to any liability for compensation under any Applicable Laws.

13.4 Net Amount

13.4.1 In the event that either Party is obligated to indemnify and hold any other Party harmless under this Clause, the amount owing to the Party seeking indemnification shall be the amount of such Party's actual out-of-pocket loss, including legal expenses, net of any insurance or other recovery.

13.5 Survival of Obligations

13.5.1 The duty to provide indemnification under this Clause and the other protections, exclusions and limitations of liability will continue in full force and effect notwithstanding the expiration or termination of this Contract, with respect to any loss, liability, damage or other expense based on facts or conditions which occurred or existed prior to such expiration or termination.

14 INSURANCE

14.1 General

14.1.1 The provisions of this Clause 14 do not modify or change or abrogate any responsibility of the Contractor or any Subcontractor stated elsewhere in this Contract. JIL assumes no responsibility for the solvency of any insurer or the failure of any insurer to settle any claim. The Contractor shall, at his own cost, take all necessary insurances to cover all the plants, machinery, equipment, and workforce before deploying them at the site of work and also for the third-party damages to property and to any person.

14.1.2 The Contractor shall maintain the insurance cover till all his obligations under the Contract is over. A summary of certain provisions of Contractor's and JIL's policies are set forth below.

14.2 Policies Obtained by Contractor and Subcontractor

14.2.1 Contractor shall maintain and shall cause each Subcontractor to maintain, in force during its performance of the Works and until Final Acceptance, at its cost, insurance policies with company(s) approved by JIL, in compliance with the Applicable Laws, of the types and in the minimum amounts as follows all of which are on an occurrence-type basis:

- i) **Workers' Compensation Insurance** or any other similar form of employees' social insurance which is required by Applicable Laws and JIL's Liability coverage in the amount of [●] or such higher amounts as may be required by Applicable Laws, per occurrence or series of occurrences arising from one event. Contractor expressly agrees to comply with all provisions of the Workers' Compensation Laws or similar employee benefit laws in force in India.

- ii) The Contractor shall effect and maintain insurance against losses and claims arising from the death or injury to any person employed by the Contractor or any Subcontractor. For a Subcontractor's employees, such insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.
- iii) **Insurance against Accident etc. to workmen:** The Contractor shall insure against such liability with an insurer approved by JIL, which approval shall not be unreasonably withheld, and shall continue such insurance during the whole of the time that any persons are employed by him or by his Subcontractor on the Work in such manner that JIL is indemnified under the policy.
- iv) **Contractor's All Risk Policy (CAR):** - The Contractor shall take (at his own cost) & service the CAR Policy, which shall cover works of the project to be executed under various contracts including the work of this contract. The said policy is equivalent or more than the Contract Value. The Terms & Conditions of the aforesaid CAR Policy shall be binding on the Contractor and its Sub-Contractors, if so applicable. In case of damages or loss etc. to the work of this particular Contract, the same shall be made good by the Contractor at its own cost and JIL shall have the first right on the amount of compensation so received against such policy from the Insurance Company against the aforesaid CAR policy towards the damages / loss caused to "Work" of this Contract. JIL shall not be liable for any loss suffered by the contractor on this account. JIL
- v) **Automobile Liability Insurance** with company(s) approved or licensed to do business in India engaged by the Contractor for all ancillary works like transportation etc. All policies pursuant to this Clause shall provide for loading and unloading coverage, contain appropriate no-fault insurance provisions or other endorsements as are required under Applicable Laws and Applicable Permits.

14.3 Failure of the Contractor to maintain adequate insurance coverage.

- 14.3.1 The failure of the Contractor to maintain adequate insurance coverage shall not relieve him of any of his responsibilities accruing to him under the contract or under the Applicable Law.
- 14.3.2 If at any time, it comes to the notice of the Engineer-in-Charge that the Contractor has failed to affect and keep in force the insurance which he is required to affect under the terms of the Contract or under the Applicable Law, then JIL on Contractor's request may affect and keep in force any such insurance and pay such premium or premia as may be necessary for that purpose and from time to time deduct the amount so paid by JIL as aforesaid from any amount due or which may become due to the Contractor or recover the same as a debt due from the Contractor.

14.4 Requirements in Respect of Contractor's Insurance

- 14.4.1 In regard to each policy described under Clause 14.2 the following shall apply:

- i) The amounts of insurance may be satisfied by purchasing coverage in the amounts specified or by any combination thereof, so long as the total amounts of insurance meet the minimum requirements specified.
- ii) The Contractor shall provide to JIL and Engineer-in-charge promptly upon request copies of each policy described under Clause 14.2 and evidence indicating payment of current premiums for such policies. Contractor shall furnish JIL such evidence as may reasonably request from time to time regarding the establishment and maintenance of insurance by any Subcontractor.
- iii) Each policy under Clause 14.2 with the exception of Workers' Compensation, shall specify JIL as additional insured.
- iv) Each policy under Clause 14.2 shall be placed and maintained with reputable insurers and/or re-insurer of sound financial standing as may be approved by JIL from time to time.
- v) Each policy under Clause 14.2 shall be in such form and substance, consistent with the Contractor's obligations under this Contract, as may be approved by JIL from time to time (such approval not to be unreasonably withheld or delayed).
- vi) Each insurance policy shall provide a minimum of sixty (60) Days' notice to JIL prior to cancellation, non-renewal, reduction, restriction or any material change. In the case of cancellation for non-payment of premium, ten (10) Days' prior written notice must be provided to JIL.
- vii) All policies obtained by Contractor and/or any Subcontractor shall include a waiver of subrogation against JIL, its employees, agents, directors, and shareholders.
- viii) The above-described insurance shall be considered primary insurance with respect to the obligations assumed by Contractor hereunder and all insurance carried by JIL, its agents, representatives, shall be considered secondary and non-contributory in relation thereto.
- ix) Contractor shall comply with all terms, conditions and warranties of policies.

14.5 DELETED.

14.6 General Requirements for All Insurance

14.6.1 The following provisions shall apply to all insurance policies required pursuant hereto:

- i) Each insurance policy shall be consistent with the general terms agreed in writing prior to the Execution Date, and such agreement shall take precedence over the provisions of this Clause.
- ii) The Contractor and JIL, where applicable, shall comply with the conditions

stipulated in each of the insurance policies including, but not limited to, procuring pre and post-surveys on all shipments of critical items. The Contractor shall make no material change to the terms of any insurance without the prior approval of JIL. If an insurer makes (or purports to make) any such change, the Contractor shall notify JIL immediately.

- iii) The contractor shall immediately procure replacement coverage for all canceled policies. Failure to secure replacement policies as to provide continuous coverage shall constitute a default hereunder. If the Contractor fails to effect and keep in force any of the insurances required under the Contract, JIL shall have the right but not the obligation to, without prejudice to any other right or remedy, effect insurance for the coverage relevant to such default, and pay the premiums due. Such payments shall be recoverable from the Contractor by JIL and may be deducted by JIL from any sums due, or to become due, to the Contractor or from the performance security.
- iv) Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or JIL under the other terms of the Contract or otherwise.
- v) Each Party shall deliver to the other Party, prior to the commencement of the Work, certificates of insurance evidencing the insurance coverage required herein. Detailed certificates of each renewal of the insurance shall also be delivered to the applicable Party on or before renewal. Additionally, Contractor shall deliver to JIL a certified copy of the insurance policies required herein. In addition, a certified copy of the insurance policies shall be provided to JIL by Contractor within a reasonable time for review and approval.
- vi) All policies obtained by JIL shall contain, subject to JIL's reasonable efforts, a waiver of subrogation against Contractor and any Subcontractor.
- vii) It is agreed between the Contractor and JIL that the insurance requirements will be paramount to those in this Contract.
- viii) Notwithstanding the above requirements, JIL shall maintain the right to purchase at any time any of the insurances listed in Clause 14.2 on behalf of JIL and/or Contractor and Contractor shall return unearned premium on any insurances canceled at JIL's request.
- ix) All policies, where applicable, shall contain severability of interest or standard cross liability clauses and shall respond to claims and/or lawsuits that are brought worldwide.

14.7 Deductibles & Claims Management

- 14.7.1 Notwithstanding any other provision of this Clause, any deductible(s) or self-insured retention payable under insurance policies required under Clause 14 hereof shall be the sole responsibility of the Contractor. In addition, with respect to any insurance policies maintained by JIL pursuant to Clause 14, Contractor shall be responsible for the initial [●] (inclusive of legal expenses) on all covered incidents or occurrences thereunder after which the remaining deductible will be paid by JIL. However, Contractor shall be responsible for the entire deductible(s) (with a maximum of [●] for each and every claim) and all uninsured amounts if the loss thereunder is caused by

the negligence or willful misconduct of the Contractor or its Subcontractors.

- 14.7.2 The Contractor shall be responsible for servicing of the insurance purchased by the Contractor as defined in Clause 14, and such services shall include but are not limited to insurance company loss control surveys, reporting claims, developing information required for claims adjustment, issuance of certificates of insurance, preparation of necessary reports, preparation of insurance reports of cargo shipments and other as required by JIL.
- 14.7.3 Contractor shall promptly notify, in writing, JIL of any actual or, upon knowledge thereof, potential casualty or claim under any insurance policy. Such written notice of claim shall be given by Contractor whether or not the amount of such claim is within the deductible limits of the applicable insurance coverage.
- 14.7.4 If a loss is sustained Contractor, at the request of JIL, shall act on behalf of JIL and Contractor for the purpose of adjusting the amount of the loss with the insurance companies. Subject to the agreement of JIL, Contractor shall repair or replace any loss or damage and complete the Work in accordance with this Contract; provided, however that Contractor is relieved of this obligation to the extent that any claims settlement is solely vitiated or otherwise materially compromised because of some material act or omission on behalf of JIL.

15 FORCE MAJEURE

15.1 Definition of Force Majeure

15.1.1 In this Clause, "Force Majeure" means an event which is not foreseeable to Contractor on or prior to the Execution Date, is of such a nature no affected party can prevent or avoid it, is demonstrably beyond the control of JIL and the Contractor, which makes it impossible or illegal for a party to perform, and includes only:

- i) Natural disasters which the Contractor could not have been reasonably expected to have foreseen or taken precautions against such as, but not limited to, unprecedented earthquake, epidemic, landslide, lightning strikes, fire, hurricane, storms of unusual severity, earthquake, or floods, or other natural catastrophes;
- ii) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, government requisition, embargo or any notified trade restriction or warlike operations (whether war be declared or not), rebellion, revolution, insurrection, or civil war, mutiny, civil commotion, military or usurped power, marital law, conspiracy, confiscation, terrorist actions, riot (other than among the employees of the Contractor or its Sub-Contractor), commotion or disorder, unless solely restricted to employees of the Contractor or of his Subcontractors commandeering by a group of malicious persons or persons acting on behalf of or in connection with any political organization, requisition or destruction or damage by order of any Government de jure or de-facto or by any public, municipal or local authority;
- iii) Ionizing, radiations or contamination by radioactivity from any nuclear fuel or from any nuclear wastage, from the combustion of nuclear fuel, radioactive toxic explosive, or other hazardous properties of any explosive nuclear

assembly or nuclear component of such assembly except when arising from radioactive sources used in the normal course of the operations under the Contract by the Contractor; and

- iv) labor strikes that affect a specific trade on a regional or national level and were not caused by the acts of omissions of Contractor or its Subcontractors.

15.2 Effect of Force Majeure Event

15.2.1 Neither JIL nor the Contractor shall be considered in default or in contractual breach to the extent that performance of obligations is prevented by a Force Majeure event, which arises after the Execution Date.

15.2.2 Upon occurrence of any Force Majeure event the Party, alleging that it has been rendered unable, shall notify the other Party in writing immediately but not later than 72 hours of the beginning of the Force Majeure event giving full particulars of the Force Majeure event and satisfactory evidence in support thereof. The said Party shall also inform the other Party immediately after the end of Force Majeure event.

15.2.3 In the event of either Party being rendered unable by Force Majeure to perform any obligation required to be performed by it under this Contract, the relative obligation of the Party affected by such force Majeure shall, upon notification to the other Party, be suspended for the period during which the effect of the Force Majeure event lasts. and no payment shall be made to the Contractor during such period. No action/ claims shall lie against JIL and/or its members or its Authorised Representative/ employees/Board/Directors for such period

15.2.4 Time for performance of the relative obligation, suspended by Force Majeure, shall be extended to the extent the effect of such occurrence affects the overall completion of the Work. If, however, the effect of Force Majeure lasts for a continuous period of 3 (three) months or more and prevents either Party from fulfilling its obligations under the Contract, the Parties shall meet and mutually decide on the future course of action.

15.3 Contractor's Responsibility

15.3.1 Upon occurrence of an event considered by the Contractor to constitute Force Majeure and which may affect performance of his obligations, he shall continue to perform his obligations as far as reasonably practicable. The Contractor shall also notify the Engineer-in-charge of any proposals, including any reasonable alternative means for performance, but shall not effect proposals without the consent of the Engineer-in-charge.

15.4 Optional Termination, Payment and Release

15.4.1 If a Force Majeure event occurs and its effect continues for a period of one hundred eighty (180) consecutive Days, either JIL or the Contractor may give to the other a notice of termination which shall take effect thirty (30) Days after the giving of the notice. If, at the end of the thirty (30) Day period, the effect of the Force Majeure continues, the Contract shall be terminable by either Party. In the event of termination under this Clause, the total monies that Contractor shall be entitled to for its performance under the Contract shall be the sum of:

- i) all actual Cost reasonably incurred by Contractor in the proper performance of

completed Works;

- ii) the Cost of Plant and Equipment, machinery and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery such Plant and Equipment, machinery and Materials shall become the property of (and be at the risk of) JIL when paid for by JIL, and the Contractor shall place the same at JIL's disposal;
- iii) any other Cost or liability which in the circumstances was reasonably incurred by the Contractor in the expectation of completing the Works;
- iv) the reasonable Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of such items to the Contractor's works; and
- v) the reasonable Cost of repatriation of the Contractor's staff and labor employed wholly in connection with the Works at the date of such termination; and authorize payment of the monies due Contractor.

15.4.2 The Costs referred to in this Clause 15.4 shall be subject to audit review at the option and cost of JIL.

16 CLAIMS, DISPUTES AND ARBITRATION

16.1 Contractor's Claims

16.1.1 If Contractor considers itself to be entitled to any payments or any additional payment, under any Clause of this Contract or otherwise in connection with the Contract, the Contractor shall give notice to JIL, as soon as practicable, but in any event not later than 30 (thirty) days after the Contractor became aware, or should have become aware, of the event or circumstance, which notice shall, to the extent applicable, include details of:

- i) the material circumstances of the event, including the cause or causes;
- ii) the nature and extent of the delay and additional Cost caused by the event;
- iii) the corrective action undertaken or to be undertaken;
- iv) the effect on the critical path identified in the most recent JIL approved Programme;
- v) the period, if any, by which in the Contractor's opinion the timelines set out in Programme should be extended; and
- vi) where the Contractor considers that such event entitles it to an extension of time, a statement that it is a notice pursuant to Clause 6.3 (Extension of Time for Completion) and this Clause 16.1 (Contractor's Claims) of the Contract.

16.1.2 If the Contractor fails to give complete notice of a claim in accordance with the requirements of this Clause 16.1 within such period of 30 (thirty) days, the timelines set out in the Programme shall not be extended, the Contractor shall not be entitled to additional payment, and JIL shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Clause 16.1 shall apply.

- 16.1.3 The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.
- 16.1.4 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to JIL. Without admitting liability, JIL may, after receiving any notice under this Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit JIL to inspect all these records and shall (if instructed) submit copies to JIL.
- 16.1.5 Within 30 (thirty) days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by JIL, the Contractor shall send to JIL a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed.
- 16.1.6 Within 30 (thirty) days after receiving the claim, JIL shall respond with approval, or with disapproval and detailed comments. JIL may also request any necessary further particulars but shall nevertheless give its response on the principles of the claim within such time.
- 16.1.7 The payment shall include such amounts for any claim as have been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.
- 16.1.8 JIL shall determine the extension (if any) of the Programme (before or after its expiry) in accordance with Clause 6.3 (Extension or Acceleration of the Programme), and/or in accordance with Clause 2.2.2 (Determinations) to agree or determine the additional payment (if any) to which the Contractor is entitled under the Contract. The Decision of JIL shall be final and binding on Contractor. The Contractor undertakes to not to challenge such decision of JIL.
- 16.1.9 The requirements of this Clause are in addition to those of any other Clause which may apply to a claim. If the Contractor fails to comply with this or another Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Clause.

16.2 Arbitration

- 16.2.1 Any and all claims or disputes arising out of or in connection with the Contract ("Dispute") shall be notified in writing (including e-mail or fax) to the other Party. Such notice shall set out all details of the claim or Dispute together with the provisional amount in Dispute. In case of Dispute, the Parties shall do their best efforts to reach an amicable settlement within 30 (thirty) days following the above-mentioned notification.
- 16.2.2 If the Parties' representatives failed to find such an amicable settlement within 30 (thirty) days, then either Party may upon written notice to the other Party require that

any Dispute or difference arising out of or in connection with the Contract be finally settled under the applicable Rules and be referred to a sole arbitrator appointed by JIL who must be atleast a Retd. a High Court Judge of any judicature or Retd. District Judge. Contractor has no objection whatsoever in the name and qualification or procedure in the appointment of the sole arbitrator. The arbitration shall be conducted in English, and the venue of the arbitration shall be Noida. The competent courts of Gautam Budh Nagar or Allahabad High Court shall have exclusive jurisdiction over all matters arising out of or in connection with this Contract.

- 16.2.3 The award of the arbitrator shall be final and binding on the Parties. Each Party shall bear the cost of arbitration as set out in the award. It is made clear as mentioned in below para, that during the subsistence of arbitration proceedings work remain continue at Project site either carried out by Contractor or third party appointed by JIL at the costs, risk and expense of Contractor

16.3 Continuation of Performance

- 16.3.1 Performance of this Contract shall continue during any dispute resolution process referred to in this Clause 16 (Claims, Disputes and Arbitration) unless JIL orders suspension in accordance with this Contract. No payment due or payable by JIL or the Contractor under this Contract shall be withheld on account of a pending reference to arbitration or other dispute resolution mechanism except to the extent that such payment is the subject of such dispute. It is agreed and consented by the Contractor, that during the term and validity of the contract, the Contractor will not take any action against JIL in the Court of Law and is not vested with any right / entitlement to take any ex-party stay against JIL.

17 BASE RATE DIFFERENCE

- 17.1 Increase or decrease in specified base rate of materials as mentioned in BOQ for incorporation in a quoted rate of an item of work with wastage shall be accounted for in the payment of the item of the related work only to the extent of the increase/decrease in the base rate (excluding GST but including all other taxes duties, loading, unloading , transit insurance freight etc.) without any other additional cost. To ascertain the current base rates of the items procured, proper GST invoices shall be submitted by the contractor. Wherever vendors and rates negotiated and finalized by JIL for base rate items covered in BOQ, such items shall be purchased by the contractor from above vendors only at finalized rates unless otherwise approved by JIL.

18 MISCELLANEOUS

It is made clear and agreed / consented by the Contractor, that notwithstanding anything contrary contained herein or in any contract / tender documents, or any other documents in no condition or under any circumstances after the execution of Tender Documents Contractor shall claim any payments or any other monetary entitlements like damages, interest, compensation etc. on account of any idle charges. The Company for any reason's whatsoever shall always have the right to give the instructions/direction to Contractor stop the work at site and same shall be binding on the Contractor. Further the said reason shall include all circumstances, which are unanticipated like any change in law or any judicial / administrative order for that prevalent time. The circumstances further include but not limited to any standing

instructions/direction given by the Company (without assigning any specific reasons to that effect) and same shall be binding on the Contractor debarring the Contractor from claiming any payments/idle charges/ delay/ penalty during which no construction activity is possible or to be carried out by the Contractor on account of instructions given to it.

That also, in circumstances and force majeure events like Pandemic, Lockdown, Natural Disaster, NGT restrictions, construction ban or any delay caused by the government authorities in granting necessary approvals/sanctions/permits affecting the regular construction activities and overall development of the real estate project, no payment shall be made to the Contractor and the Contractor undertakes not to claim any such idle charges/ damages/penalty etc for the same period.

That consequent to above, the Contractor further agrees that on receiving any such instructions/directions from the Company, Contractor shall stop the work and further agrees idle time period during which no construction activity was carryout at Project site shall be excluded from agreed completion time period and same shall be extended on same terms and conditions as contained in this document without any additional payments.

Further, under no circumstances whatsoever, the Contractor is vested with any legal rights to challenge or dispute the above conditions in any court of law. The Contractor undertakes to abide by these declarations as made herein above which is binding for the specific relevant time / under general or special circumstances as per instructions given by the Company or account of external factors including force majeure conditions.

18.1 Validity and Enforceability

The invalidity or unenforceability of any portion or provision of this Contract shall not affect the validity or enforceability of any other portion or provision. Any invalid or unenforceable portion or provision shall be deemed severed from this Contract, and the balance of the Contract shall be construed and enforced as if the Contract did not contain such invalid or unenforceable portion or provision. Notwithstanding the provisions of the preceding sentence, should any term or provision of this Contract be found invalid by any Governmental Authority having jurisdiction thereof, the Parties shall immediately renegotiate in good faith such term or provision of the Contract to eliminate such invalidity.

18.2 No Claim for Delayed Payment Due to Dispute Etc.

No claim for interest or damage will be entertained or be payable by JIL in respect of any amount or balances which may be lying with JIL owing to any dispute, difference or misunderstanding between the parties or in respect of any delay or omission on the part of the Engineer-in-Charge in making intermediate or final payments or in any other respect whatsoever.

18.3 Waiver

The waiver of any breach or failure to enforce any of the terms, covenants or conditions

of this Contract shall not in any way affect, limit, modify or waive the future enforcement of such terms, covenants or conditions.

18.4 Third-Party Beneficiaries

Except with respect to indemnification obligations contained herein in favor of third parties, the provisions of this Contract are intended for the sole benefit of JIL and Contractor, and there are no third-party beneficiaries other than assignees contemplated by the terms herein.

18.5 Counterparts

This Contract may be executed in any number of counterparts and by each of the Parties in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same Contract.

18.6 Entire Agreement

Any of the Works described in this Contract which was performed or caused to be performed by Contractor prior to the execution of this Contract shall be deemed to have been performed under this Contract. This Contract sets forth the full and complete understanding of the parties relating to the subject matter hereof as of the date first above stated, and supersedes any and all negotiations, agreements and representations made or dated prior thereto. Subsequent to the Execution Date, this Agreement may be supplemented, modified or otherwise amended by mutual agreement or only in accordance with the terms of this Agreement; provided that any such supplements, modifications and amendments to this Contract, if any, must be in the form of a written amendment to this Contract, and signed by authorized representatives of both Parties to this Contract.

18.7 Conflicting Provisions

Either Party, upon becoming aware of any conflict or inconsistency among any of the components of this Contract shall promptly notify the other Party in writing of such conflict or inconsistency.

18.8 Joint Responsibility for Drafting

This Contract was negotiated and prepared by both Parties with advice of counsel to the extent deemed necessary by each Party; the Parties have agreed to the wording of this Contract; and none of the provisions hereof shall be construed against one Party on the ground that such Party is the author of this Contract or any part thereof.

18.9 Prevailing of Special Conditions of Contract

That in case of conflict of interpretations as well as on applicability of any clauses, the clauses contained in the Special Conditions of Contract will prevail over those contained in this present General Conditions of Contract.

Schedule 1- SCOPE OF WORK

ACTIVITY/ ITEM OF WORKS

1. CIRCUIT CUM POINT WIRING
2. CONDUITING FOR SUBMAINS
3. CABLES, MAINS AND SUB MAINS
4. DISTRIBUTION BOARD
5. RISING MAINS (Air Insulated Type)
6. LIFT PANEL
7. EARTHING INSTALLATION (FOR DISTRIBUTION SYSTEMS)
8. ADVANCE LIGHTNING PROTECTION SYSTEM
9. INSTALLATION OF LIGHTING FIXTURES (Service Area)
10. INSTALLATION OF LIGHT FITTINGS ETC.FLATS
11. CONDUITING FOR TELEPHONE SYSTEM
12. CONDUITING FOR TV SYSTEM
13. CONDUIT FOR FIRE CCTV SYSTEM
14. HYBRID FIRE ALARM & DETECTION SYSTEM
15. MISCELLANEOUS WORK

All chases and openings made by the Contractor for his conduits, boxes etc., shall be filled/covered over with cement plaster in a reasonable manner, to be finished by the Civil Contractor. Before rough plastering on the conduit surface the concealed conduits shall be secured to the wall by using saddles and nails.

Schedule 2

HEALTH, SAFETY AND ENVIRONMENT

I. GENERAL

1. **SCOPE:** This document defines the principal requirements of the contractor on Health Safety and Environment (**HSE**) associated with the contractor and any other agency/vendor to be practiced at construction worksites at all times.
2. **APPLICABILITY:** The content of this document applies to all aspects of contractor's scope of work, including all activities carried out by the Contractor and all other agencies engaged by him both on site and off site. All activities executed by contractor at project site shall be carried out in accordance with the conditions in this document.
3. **PURPOSE:** The purpose of including this document is to ensure that all precautions are taken to prevent accidents, occupational illness and harmful effects on the environment during construction.

II. HSE TARGETS AND GOALS

1. The HSE targets, goals and aim for the Works are to achieve:
 - Zero fatal accidents.
 - Zero reportable environmental incidents
 - Safety training of all personnel of Contractor in accordance with the HSE processes
 - Total compliance of conducting inspections and audits.
 - 100% incident recording and reporting.
 - 100% adherence of usage of appropriate Personal Protective Equipment (PPEs) at work.
 - Execution of work with least disturbance to the environment and Public.
 - Zero deviation to statutory provisions

III. COMPLIANCE:

1. THE ORGANISATION Processes including project HSE plan:

- (A) The construction works shall be undertaken in accordance with the SMS Policy and Management Systems as amended from time to time. This shall mainly include but not limited to the following:
- (B) The contractor shall be responsible for Health Safety, -Environment and Welfare of his workers (direct/Contractor) engaged by him while they are executing desired work at site.

Among others the following shall be specifically noted:

- Provide machinery and system of work that are safe and without risk to health.
- Ensure safety while use, handling, storage and transport / shifting of material.
- Provide information, instructions and **supervision** to ensure safety of all his workers at work.
- Ensure safe means of access to and egress from the place of work of his workers.
- Ensure proper working platforms with hand rails including mid rails and toe boards.
- Maintain safe and environment friendly workplace.
- Provide safe hand tools and lifting gear and ensure that all the lifting machines and tackles are inspected and load tested as per statutory provisions with third party certification by a competent person.
- Ensure good housekeeping at all times.
- Provide and ensure correct use of the required Personal Protective Equipment (**PPE**) conforming to the national standards to all staff and workers all the time at work
- Arrange/participate training programmes for all his staff and workers to identify recognize and eliminate unsafe act and unsafe conditions.
- Conduct regular Toolbox talks for all workmen as per the project directives/instructions (as defined /agreed within approved EHS Plan)
- Ensure adequate Supervision and Safety coverage for all the works being undertaken by the Contractor.
- Ensure compliance to all statutory provisions as given under **section 3.2** and as arising from time to time.
- Ensure no deviation from the laid down processes and HSE practices and measures including proper and correct use of PPEs.
- Ensure pre-employment Medical checkups and periodical medical checkups as may arise.
- Ensure specific medical checkups for height pass certification, crane operations, vehicle operations, fork lift operations including testing of eye sights & color blindness as necessary and advised by project HSE
- Ensure compliance to the requirements under the THE ORGANISATION processes.

2. THE INDIAN STATUTORY REQUIREMENTS:

- (A) The Contractor shall develop thorough understanding about the **BOCWA** i.e. Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996, Central Rules 1998, State Govt. Rules , Building and Other Construction Workers' Welfare Cess Act, 1996 and Central Rules, 1998 and State Govt. Building Construction Workers' Welfare Board Rules, not only to satisfy the Inspectors' perspective but the use of legislation as the strong tool for effective HSE management at construction worksites. The Contractor is strongly advised to practice the principle of voluntary compliance.
- (B) In addition; the construction works shall be undertaken in accordance with all applicable legislation and Indian statutory requirements listed below but not limiting to:
- i. The Indian Electricity Act 2003 and Rules 1956 as per latest amendments.
 - ii. The National Building Code, 2010 or the applicable one.
 - iii. The Factories Act, 1948, Factories Rules of relevant State Govt.
 - iv. The Motor Vehicles Act as amended in 1994 and The Central Motor Vehicles Rules, 1989.
 - v. Indian Road Congress Code IRC: SP: 55-2001 'Guidelines on Safety In Road Construction Zones.
 - vi. The Petroleum Act 1934 and Rules 1976
 - vii. Gas Cylinder Rules, 2004
 - viii. Indian Explosives Act, 1884, along with the Explosives substance Act 1908 and the Explosives Rules 1983
 - ix. The (Indian) Boilers Act, 1923
 - x. The Public Liability Insurance Act 1991 and Rules 1991
 - xi. Minimum Wages Act, 1948 and Rules 1950
 - xii. Contract Labour Act, 1970 and Rules 1971
 - xiii. Child Labor (Prohibitions & Regulations) Act, 1986 and Rules 1950
 - xiv. Environment Protection Act, 1986 and Rules 1986
 - xv. Air (Prevention and control or Pollution) Act, 1981
 - xvi. Water (Prevention and Control or Pollution) Act, 1974
 - xvii. The Noise Pollution (Regulation & Control) Rules, 2000
 - xviii. Notification on Control of Noise from Diesel Generator (DG) sets, 2002
 - xix. Recycled Plastic Usage Rules, 1998

- xx. Notification, Central Ground Water Board, Act January 1997
- xxi. Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989
- xxii. The Hazardous Waste (Management & Handling) Rules, 1989
- xxiii. Hazardous Waste Management Rules 1989 (as amended in 1999)
- xxiv. The Tree Preservation Act (1994) and Rules of relevant State
- xxv. Batteries (Management and Handling) Rules
- xxvi. Fly ash utilization notification, Sept 1999 as amended in August 2003

3. **The Workmen's (Employees) Compensation Act, 1923 along with allied Rules:** The Contractor shall note that all his employees *I* workmen are covered under 'Workmen's Compensation Act' and he shall *pay* compensation to his workmen as and when the eventuality for the same arises as per the Act and Rules. It shall be seen that adequate group insurance coverage is taken by the Contractor for this purpose and the copy of the policy is provided to the Engineer in charge of the work prior to starting of work.

IV. HSE SUBMITTALS TO THE EMPLOYER

1. The Contractor shall send the following reports to the Employer periodically:
 - a) Monthly HSE Report
 - b) HSE Committee Meeting Minutes
 - c) Accident report (if any)
 - d) HSE Inspection Reports
 - e) HSE Audit Reports
 - f) Air and Noise Quality monitoring report as applicable and periodical PUC reports for vehicles used by the Contractor.
 - g) Reports as may apply to IMS (if applicable) requirements of the company.
2. **Monthly HSE Reports:** The Contractor shall prepare a monthly HSE report and submit 2 copies within 7th of next month to the Employer.

V. PENALTY AND AWARDS

1. Charges to be recovered from Contractor for unsafe act or condition: The Organization has built an image of safety conscious organization meticulously over a period of decades. Any reportable accident (fatal *I* serious injury) results in loss of life or property damage. These accidents not only result in loss of life but also damage the reputation of the Company. Most of the accidents are avoidable and are caused preliminary due to negligence. Hence THE ORGANISATION shall recover the cost of damages from the contractors for every reportable incident (fatal / injury). Note: **"Reportable accident"** as defined in the BOCW Central Rules 1998 is an accident which disables a building worker from working for a period of forty-eight hours or more.

2. The following table indicates the Health, Safety and Environment violation (unsafe act / unsafe condition) and charges to be recovered from Contractors.

Sl. No	Topic	Unsafe act / unsafe condition	Deductible amount
1	SHE Inspection	Not complying to the requirements as mentioned in conditions of contract and project HSE Plan	Rs.5000 for first violation and Rs.10000 for subsequent violation
2	Injury	i) Fatal accidents ii) Lost time injury	Fatal accidents- Rs. 200000 for each case or as decided by the competent authority whichever is higher. Rs. 25000 for each lost time injury or as decided by the competent authority whichever is higher
3	Housekeeping	Bad housekeeping at Office, Stores, workplace, rest place, Canteens and labour camps. Stairways, gangways, Passageways blocked. Drinking water Tanks, Toilets and wash places not cleaned periodically.	Rs. 5000 for each violation
4	Site Electrical Safety	Noncompliance of the requirements for use of electricity as per the Indian Electricity Rules and HSE Manual.	Rs.10000 for each violation
5	PPE	1) Not wearing PPE (any type) 2) Repeated violation by worker	1) Rs. 200 per person for each violation 2) Rs. 500 per person and expel from duty.
6	Contractors Vehicles	1) Unlicensed Vehicles 2) Over loading 3) Unfit Drivers 4) Absence of reversing Horn 5) Unfit Vehicles	For item 1) Rs. 5000 for each violation and other items Rs. 500 per violation or as decided by the competent authority, whichever is higher.

3. Without limiting to the unsafe acts and conditions mentioned herein, the Employer

shall have the right to deduct charges for any other unsafe act and or condition depending upon the gravity of the situation on a case to case basis. The charges shall be in comparison with that of the similar offence indicated in clause 2 above. Payment of penalty or the penalty provisions does not absolve the Contractor from his responsibility and accountability on ensuring and maintaining safety.

4. AWARDS:

The following categories will be considered for awards as per the safety action plan of Developer in practice at sites:

- For every safe million man hour working without any reportable incidents
- Best supervisor of the quarter
- Completing contract with *Zero* fatality
- 100% adherence to voluntary reporting of all accidents throughout the life of contract
- Safest project team of the year.
- Safest Contractor of the year

VI. SAFETY MANAGEMENT & SAFE WORK PRACTICES:

A descriptive Annexure with brief descriptions on the various Safety Management aspects and work Practices is enclosed here with as Annexure for the benefit of the Contractor. Contractor shall ensure on its own cost and initiative regarding the suitable provisions for the staying of the laborer's/workmen deployed at Project site including compliances of applicable provisions related to migratory laborer's/workmen. The Contractor shall further ensures the safe work environment for the female laborer's/workmen by following all guidelines to prevent sexual harassment.

ANNEXURE

GENERAL

- (a) The Contractor should ensure that safety precautions are taken during the execution of awarded work and work areas are maintained safe at all times. At the end of each shift and at all times when the work is suspended, it should be ensured that the work area is left safe in such a way that no materials and equipment that can cause damage to existing property, personal injury or interfere with the other works of the project or station are left in an unsafe manner.
- (b) The Contractor should ensure to provide and maintain all lights, guards, fencing, warning signs, caution boards and other safety measures and provide for vigilance as and when necessary for the protection of workers and for the safety of others. The caution boards should also have appropriate symbols.
- (c) Adequate lighting facilities such as floodlights, hand lights and area lighting should be provided at the site of work, storage area of materials & equipment and temporary access roads within the working area.
- (d) All works should be planned to avoid interference with other facilities, works of the client, other contractors / sub-contractors at the site. In case of any interference, necessary coordination should be ensured for safe and smooth working.
- (e) It should be ensured that the instructions given by the safety officer or his designated nominee regarding safety precautions, protective measures, housekeeping requirements, etc. are complied with. The safety officer with due intimation to line manager should have the right to stop the work, if in his opinion; proceeding with the work will lead to an unsafe and dangerous condition. Line manager should arrange to get the unsafe condition rectified and/or provide appropriate protective equipment.
- (f) Contractor should ensure that each job with a hazard (whether small or big) is intimated to the Engineer in charge safety of the Organization before it is taken up.
- (g) The Contractor should be fully responsible for non-compliance of any of the safety measures or requirements, implications, injuries, fatalities, dangerous occurrences and compensation arising out of such situations or incidents.
- (h) Maximum duty hours of an individual should be as per the BOCW Act and Rules as per its latest amendment.
- (i) Illumination levels should be as per the statutory requirements.

ROCK BLASTING

- (a) All blasting operations should be carried out based on procedures approved by competent authority and Engineer-in-charge. All works in this connection should be carried out as per BIS specification/code (IS 4081:1986. Title: -Safety code for blasting and related drilling operations (First Revision)). Barricades, warning signs etc. should be placed on the roads/open area. Blasting permit should be obtained from the approved authority at least one day before the blasting operation and precautions mentioned there in shall be ensured by the Engineer -in- charge before blasting operation.

- (b) The blaster should have a license from competent authority under Explosive Rules, 1983 for blasting work. It should also be ensured that he knows about the risks involved.
- (c) Blasting should be done under the supervision of competent Engineer/ Supervisor. Blasting in the open site should only be carried out during fixed hours; every day / fixed day in the week between sunrise and sunset. Residents/occupants of adjacent area should be informed in advance about the blasting schedule.
- (d) No blasting should be undertaken during thunderstorm.
- (e) Necessary precaution should be taken to ensure the stability/integrity/safety of the adjacent structure by limiting the peak particle velocity.
- (f) No loose material, such as tools, drilling equipment, etc. should be left on the surface to be blasted. Proper muffling arrangement of the blasting area should be ensured to avoid flying of blasted material.
- (g) Authorized blaster should personally ensure that all the personnel /equipment has been removed from the blasting area before the blasting operations.
- (h) Blasting area should be free of detonating gas, inflammable objects, sparking or damaged wiring system, stray currents and static electricity.
- (i) All electrical lines in blasting area should be de-energized.
- (j) Entry of unauthorized personnel should be prevented by displaying warning signs.
- (k) In case of misfire, no person should be allowed to approach the blasting site unless it is inspected and cleared by a competent Engineer/Supervisor.
- (l) Explosives and blasting material should be stored only in clean, dry, well-ventilated, suitably constructed bullet/ magazine which should be fire resistant and securely locked. Stock book should be kept accurate and maintained. License should be obtained for storage of explosive as per the Explosives Act, 1884.
- (m) Blasting caps, electric blasting caps or primers and detonators should not be stored in the same box, container or room with other explosives.
- (n) Precautions against lightening should be provided in accordance with Indian Electricity Rules, 1956(amended in 2000).
- (o) The explosives should be transported in specially designed vehicles bearing a special sign or inscription entitled 'DANGER - EXPLOSIVES'. Also detonators separated from other explosive should be transported in a separate compartment.

EXCAVATION, TRENCHING AND EARTH REMOVAL

- (a) Before taking up excavation work, necessary permission should be obtained from the Engineer- in-charge with reference to existing underground services.
- (b) The Line manager of the works should exercise full care to ensure that no damage is caused by him or his workmen, during the operation/excavation etc., to the existing water supply, sewerages, and power or telecommunication lines or any other services or works. He should provide and erect before construction, substantial barricades, guardrails, and warning

signs around the work area. He should also furnish, place and maintain adequate warning lights, display board, signals etc., as required.

(c) All trenches 1.2 m or more in depth should at all times be supplied with at least one ladder for every 30 m along the trench. Ladders shall extend from bottom of the trench to at least 1 m above the surface of the ground.

(d) The sides of the trench/pit in soil, which are 1.2 m or more in depth should be stepped back to give suitable slope (angle of repose) or securely held by timber bracing or appropriate shoring/support, to avoid the danger of soil sides from collapsing. The excavated material should not be placed within 1.5 m or half of the depth of the pit whichever is more from edges of the trench/pit. Cutting should be done from top to bottom. Under no circumstances mining or undercutting should be done.

(e) Workers should not be exposed to the danger of being buried by excavated material or collapse of shoring. Measures to prevent dislodgment of loose or unstable earth, rock or other material from falling into the excavation by proper shoring shall be ensured.

(f) The stability and safety of the excavation, adjacent structures, services and other works should be ensured.

(g) All excavated area should be fenced off by suitable railing and installation of caution board to warn the persons from slipping or/falling into the excavation pit/ mound.

(h) All excavated areas shall have adequate illumination - for night work and a red danger light shall be displayed at a prominent place near the excavation site to warn approaching traffic and men.

(i) For removal of earth from an earth mound/excavated heap; a written permission should be obtained from the Engineer-in-charge of the work. As far as practical, earth should be removed mechanically. Wherever manual removal of earth is involved, earth should be removed from the top by maintaining a slope equal to the angle of repose of the earth. Such work should be constantly supervised to ensure that no under-cutting is done and to ensure that no person is trapped.

(j) Dumping of excavated soil should be done at a specified area under proper supervision with respect to signaling, illumination and safety clearance.

(k) It should be ensured that at a construction site of a building or other construction work, every vehicle or earth moving equipment is equipped with **a)** silencers, **b)** tail lights, **c)** power and hand brakes, **d)** indicator, **e)** reversing alarm/reverse horn **f)** search light for forward and backward movement, which are required for the safe operation of such vehicle or earth moving equipment and **g)** the cab of the vehicle or earth moving equipment is kept at least one meter from the adjacent face of a ground being excavated.

(l) It should be ensured that when a crane or shovel is traveling, the boom of such crane or shovel is in the direction of such travel and the bucket or scoop attached to such crane or shovel is raised and is without load, except when it is traveling downhill.

(m) Before loading or unloading power trucks or trailers attached to tractors, the brakes should be applied and if vehicle is on a sloping ground, the wheels should be blocked. Handcart should not be used for the transfer of construction/ erection materials in the construction area. However if the exigency demands urgent transfer of light materials a small

handcart may be permitted with the prior approval of the Engineer-in-charge.

- (n) It should be ensured that at a construction site of a building or other construction work:
 - (i) All transport or earth moving equipment and vehicles are routinely inspected in each shift and in detail at least once in a week by a responsible person. In case; any defect is noticed in such equipment or vehicle, it should be immediately taken out of service.
 - (ii) Safe gangways are provided for to and fro movement of building workers engaged in loading and unloading of Lorries, trucks, trailers and wagons.
 - (iii) All earth moving equipment, vehicles or other transport equipment is operated only by such persons who are adequately trained and possess such skills as required for safe operation of vehicles or other transport equipment.
 - (iv) Trucks and other equipment are not loaded beyond their safe carrying capacity, which should be clearly marked on such trucks and other equipment.
 - (v) No unauthorized person rides the transport equipment engaged in such work.
- (o) It should be ensured at a construction site of a building or other construction works that:
 - (i) A shovel or an excavator whether operated by steam or electric or by internal combustion engine used for such work is constructed, installed, operated, tested and examined as required under any law for the time being in force and the relevant national standards.
 - (ii) Buckets or grabs of power shovels are propped to restrict the movement of such bucket or grabs while being repaired or while the teeth of such bucket or grabs are being changed.
- (p) It should be ensured at a construction site of a building or other construction works that:
 - (i) An operator of a bulldozer before leaving - applies the brakes, lowers the blade and ripper and puts the shift lever into neutral.
 - (ii) A bulldozer is parked on level ground at the close of the work.
 - (iii) The blade of a bulldozer is kept low when such bulldozer is moving uphill.
 - (iv) Bulldozer blades are not used as brakes except in an emergency.
- (q) It should be ensured at a construction site of a building or other construction works that:
 - (i) A tractor and a scraper are joined safely at the time of its operation
 - (ii) The scraper bowls are propped while blades of such scraper are being replaced.
 - (iii) A scraper moving downhill is driven in low gear.
- (r) It should be ensured at a construction site of a building or other construction works

that:

- (i) Before a road roller is used on the ground, such ground is examined for its bearing capacity and general safety, especially at the edges of slopes such as embankments on such grounds.
- (ii) A roller is not moved downhill with the engine out of gear.
- (s) Vehicle carrying excavated material should have proper cover over the driver's cabin.

SAFE MEANS OF ACCESS / PLATFORMS

- (a) Adequate safe means of access and exit should be provided for all work places, at all elevations.
- (b) Suitable scaffolds should be provided for workmen for all works that cannot be done safely from the ground, or from solid platform except such short duration work that can be done safely from ladders. Bamboo/wooden scaffolding should not be permitted.
- (c) Where the platform for working is more than 2.5 m above ground, the width of the platform should be minimum 1 m. Wherever it is impractical; the Safety Officer in charge from the Organization shall be contacted.
- (d) Ladder should be of rigid construction having sufficient strength for the intended loads. Wooden/bamboo/rope ladders should not be permitted. All ladders should be maintained in good condition. The ladders should be fixed to the ground or rigid platforms. An additional person should be engaged for holding the ladder, if ladder is not securely fixed. Ladder shall be extended from floor to at least one meter above the platform.
- (e) A portable ladder should be given an inclination not steeper than 1 in 4 (1 horizontal and 4 vertical). Ladders should not be used for climbing while carrying materials in hands. While climbing both the hands should be free. Any working platform on scaffolding or staging more than 2.5 m above the ground or floor should have a guard rail attached, bolted, braced at least 1.0 m high above the floor or platform of such scaffolding or staging along with mid-rail.
- (f) The planks used for any working platform should not project beyond the end supports to a distance exceeding four times the thickness of the planks used. The planks should be rigidly fixed at both ends to prevent sliding, slipping or tilting. The thickness of the planks (quality plank meant to be used as platform) should be adequate to take load of men and materials and should not collapse. Plywood or packing wood should not be used as planks.
- (g) The guardrail should extend along the entire exposed length of the scaffolding with only such opening as may be necessary for the delivery of materials. Standard railing should have posts not more than 2 m apart and an intermediate rail halfway between the floor / platform of the scaffolding and the top rail. Such scaffolding or staging should be so fastened as to prevent it from swaying from the building or structure. Scaffolding and ladder should conform to IS 3696 (Part 1): 1987 and (Part II):1996.
- (h) Working platforms of scaffolds should have toe boards at least 15 cm in height to

prevent materials from falling down.

- (i) A sketch of the scaffolding proposed to be used should be prepared and approval by the Engineer-in-charge obtained prior to start of erection of scaffolding. All scaffolds should get examined by Engineer-in-charge before use.
- (j) Working platform, gangways and stairways should be so constructed that they should not sag unduly or unequally and if the height of the platform or gangway or stairway is more than 2.5 m above ground level or floor level, they should have adequate width for easy movement of persons and materials and should be suitably guarded.
- (k) No single portable ladder should be used for access to a height of more than 4.5 m. For ladders up to 3m in length the width between styles (side bars) /width in the ladder should in no case be less than 300 mm. For longer ladders this width should be increased by at least 20 mm for each additional meter of length. Step / rungs spacing should be uniform and should not exceed 300 mm. Portable ladders should be used only for access to work place. In case work place is higher than 4.5 meters, pre-fabricated steel staircase should be used. To ensure safe access and movement, the Contractor shall ensure that all floor openings in his work are guarded / barricaded during work and at the end of each day's work.

WORK AT HEIGHT

- (a) Person deputed to work at height should be medically fit and should have height pass issued by Contractor Safety Section). Safety training should be imparted before working at height.
- (b) Safety work-permit for working at height should be obtained from Contractor Safety Section in addition to Height Pass.
- (c) At elevated places, secure access and foothold should be provided. Adequate and safe means of access and exit should be provided at all work places for all elevations. Means of access may be portable or fixed ladder, ramp or a stairway. The use of crosses, braces or framework, as a means of access to the working platform should not be permitted.
- (d) Linear movement at height should be reduced to minimum. In case of an unavoidable need for such movement, provision for anchoring the safety belt with sliding arrangement should be made.
- (e) Where barricades cannot be installed, a safety net of adequate strength should be installed close to the level at which there is a danger of fall of personnel/fall of objects.
- (f) In case where 'Work at height' is on asbestos/fragile roof, crawling board/roof top safe walk ladder should be used to walk across the asbestos/fragile roof.

ELECTRICAL SAFETY

- (a) All electrical installations shall comply with the appropriate statutory requirements given below and shall be subject to approval of the Electrical Engineer and Safety Officer:
 - (i) The Electricity Act, 2003

- (ii) The Indian Electricity Rules 1956 (as amended in 2000)
- (iii) The National Electricity Code 2008
- (iv) Other relevant rules of Statutory Bodies and power supply authority
- (v) Relevant standards of BIS

In addition to the above statutory provisions, the clauses indicated in this document shall also be complied:

- (b) It shall be the responsibility of the user seeking temporary power supply to indicate in writing, if any of the clauses (requirements noted in above regulations and in this document) are conflicting with each other and for which the user cannot decide the course of action regarding safe installation, commissioning, operation, maintenance and decommissioning of the electrical installations.
- (c) The Electrical Engineer and Safety Officer of the agency providing temporary power supply shall interpret the concerned conflicting clauses and approve in writing the safe course of action.

MATERIAL HANDLING & LIFTING MACHINES AND TACKLES

- (a) It should be made compulsory to have a qualified supervisor for jobs like lifting/placing/ loading/ unloading/ carrying/transporting etc. of heavy material and having knowledge about hazards involved and precautions to be taken for such job.
- (b) The line managers should ensure that the material handling equipment used is adequate to handle the load.
- (c) Manual pulling of heavy equipment and trolley loaded with heavy material is not to be permitted.
- (d) Stacking and handling of heavy materials should be done on a firm ground to prevent settlement.
- (e) No lifting machine and no chain, rope or lifting tackle, except a fiber rope or fiber rope sling, shall be taken into use in any factory for the first time in that factory unless it has been tested and all parts have been thoroughly examined by a competent person. A certificate of such a test and examination specifying the safe working load or loads and signed by the competent person making the test and the examination shall be obtained and is kept available for inspection.
- (f) Use of lifting machines and tackles should conform to relevant BIS requirements IS 13367 (Part 1): 1992 Reaffirmed 2003, IS 4573: 1982 (Reaffirmed 2000) and IS 13834(Part 1): 1994 Reaffirmed 2003 etc. The accessories and the attachments, anchorages and supports etc. should be ensured in healthy conditions by regular inspections at defined frequencies.
- (g) Every rope used in hoisting or lowering materials or as a means of suspension should be of good quality and adequate strength and free from any defect. This should be ensured by regular inspection as per IS 2762: 1982- Specification for wire rope slings and sling legs (first revision).
- (h) Every crane operator or lifting appliance operator should be authorized. No person

under the age of 18 years should be in charge of any hoisting machine or give signal to an operator of such machine.

(i) In case of every lifting machine (and of every chain, ring, hook, shackle, swivel and pulley block used in hoisting or as a means of suspension) the safe working load should be ascertained and clearly marked. In case of a lifting machine having a variable safe working load, each safe working load and the conditions under which it is applicable should be clearly indicated. No part of any machine should be loaded beyond the safe working load except for the purpose of testing. This should be approved by the Engineer- in-charge and Head, Industrial Safety.

(j) In case of any machine belonging to the Organization is being offered to the Contractor, the safety of the machines at the time of offering, shall be ensured by the Engineer-in-charge of the Organization before allowing the Contractor to use it. The Contractor shall further ensure it in safe condition throughout its use and till retuning back. As regards to the Contractor's machines, the contractor shall declare the safety of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get it verified by the Engineer-in-charge, supported by a valid test certificate signed by a competent person.

(k) Thorough inspection and load testing of lifting machines and tackles shall be done in the presence of competent person at least once in every 12 months and certificate of testing obtained & records of such inspections and testing shall be maintained.

(l) No mobile crane should be allowed to operate under live high-tension power transmission line.

(m) While lifting loads, cranes should be located on level ground.

(n) A thorough load analysis should be carried out before using cranes in tandem. Lift plan must be prepared by contractor and approved by the Organization team

(o) Motors, gear transmission, couplings, belts, chain drives and other moving parts of hoisting appliances should be provided with adequate safeguards. Hoisting appliances should be provided with such means, which will reduce the risk of any part of a suspended load becoming accidentally displaced or lowered.

(p) It should be ensured that the cabin of the lifting machine in outdoor service:

(i) is made of fire resistant material,

(ii) has a suitable seat, a footrest and protection from vibration,

(iii) affords the operator an adequate view of the area of operation,

(iv) affords the operator adequate protection against the weather, and

(v) is provided with fire extinguisher.

WELDING AND GAS CUTTING

(a) Welding and gas cutting operations should be done by qualified and authorized persons only.

(b) Safety work permit shall be obtained (wherever necessary, like at locations where

presence of flammable or combustible material etc.) before flame cutting/welding is taken up.

(c) Welding and gas cutting should not be carried out in places where flammable or combustible materials are kept and where there is danger of explosion due to presence of gaseous mixtures. In case the requirement cannot be avoided, specific approval and procedure shall be ensured and adequate precautions shall be taken.

(d) Welding and gas cutting equipment including hoses and cables should be maintained in good condition.

(e) Barriers should be erected to protect other persons from harmful rays from the welding work. When welding or gas cutting is done in elevated positions, precautions should be taken to prevent sparks or hot metal falling below on persons or combustible materials.

(f) Suitable type of protective clothing consisting of fire resistant gauntlet gloves, leggings, boots and aprons should be provided to workers as protection from heat and hot metal splashes. Face shields with filter glasses of appropriate shade should be worn.

(g) Adequate ventilation should be provided while welding, brazing and cutting the metals like zinc, brass, bronze, galvanized or lead coated material.

(h) Welding and gas cutting on drums, barrels, tanks or other containers should be taken up only after ascertaining that they have been emptied, cleaned thoroughly and made free of flammable material.

(i) Fire safety measures should be available as required near the location of welding/cutting operations.

(j) Flash back arrestor should be provided with gas cutting and gas welding sets.

(k) For electric (Arc) welding the following additional safety precautions should be taken:

(i) When electrical welding is undertaken the return lead of welding machine should be directly connected to the job invariably.

(ii) Provision must be in place in electric welding machine to prevent physical contact with live parts.

(iii) The welding cables and power cables should be routed separately to avoid entanglement.

(iv) The electric welding set should have suitable earth connections (single or double) depending on its voltage. There should be an electrical isolation device in the input power supply side on the welding machine.

(l) Double gauges should be used for all gas cylinders used for cutting/welding. Pressure gauges/regulators should be in healthy condition.

ROTARY CUTTERS /GRINDERS

(a) All portable cutter/grinders should be provided with the wheel guard in position.

(b) Grinding wheels of specified diameter only should be used on all grinders in order to limit the prescribed peripheral speed.

- (c) In pedestal grinder, the gap between tool rest and grinding wheel should be maintained less than 3 mm.
- (d) Goggle/face shield should be used during grinding operation.
- (e) No grinding wheel should be used after its expiry date.
- (f) Ear muff/ear plug should be used during the welding /cutting jobs.
- (g) Portable appliances with metallic body, which are powered by single phase AC supply, shall be provided with three-core cable and three pin plug (phase, neutral and earth). Otherwise the whole body of the machine should be with double insulation.
- (h) Safety work permit should be obtained (wherever necessary at locations with presence of flammable or combustible material etc.) before grinding is taken up.
- (i) Fire safety measures should be available as required near the location of grinding operations.

CONCRETE MIXING EQUIPMENT

- (a) Cement bags should be stacked on wooden planks in dry & leak proof area, 150 mm to 200 mm from the floor and 450 mm away from walls. Height of the stack should not be more than 10 bags or 1.5 meters whichever is lower. Width of the stack should not be more than 4 bags or 3 meters. Lateral loading of the walls of the storage room by stacking should not be permitted. Stacking of the bags should not be used as a working platform.
- (b) Shuttering and supporting structures should be of adequate strength and approved by Engineer-in-charge. This should be ensured before concrete is poured.
- (c) If the mixer has a charging skip, the operator should ensure that the workmen are out of danger before the skip is lowered.
- (d) Adequate walking platforms are to be provided in the reinforcement area to ensure safe walking for pouring concrete on the roof/floor.
- (e) When workmen are working/cleaning the inside of the drum of mixer, the power of the mixer should be switched off and "Do not operate" tag should be provided. The plant operation and cleaning of mixing pan should be carried out as per equipment supplier's instructions.
- (f) Interlocks between the cover and the mixer rotor shall be established to ensure that the agitator does not start when the cover is in open condition.
- (g) It should be ensured that moving parts of the elevators, hoists, screens, bunkers, chutes and grouting equipment used for concrete work and of other equipment used for storing and transporting of ingredients of concrete are securely fenced to avoid contact of workers with such moving parts.
- (h) It should be ensured that screw conveyors used for cement, lime and other dusty material are completely enclosed.
- (i) Workers engaged for handling bulk cement in a confined place should be provided with tight fitting goggle, approved respirators and protective clothing, which will fit snugly

around the neck, wrist and ankles.

- (j) The following should be ensured for every pipe carrying pumped concrete:
 - (i) The scaffolding carrying a pipe for pumped concrete should be strong enough to support such pipe at a time when such pipe is filled with concrete or water or any other liquid and to bear safely all the building workers who may be on such scaffold at such time.
 - (ii) Securely anchored at its end point and each curve on it.
 - (iii) Provided with an air release valve near the top of such pipe; and securely attached to a pump nozzle by a bolted collar or other adequate means.
- (k) The following should be ensured while using the electric vibrators in concreting work at a construction site of a building or other construction work such that:
 - (i) Such vibrators are earthed.
 - (ii) The leads of such vibrators are heavily insulated.
 - (iii) The current is switched off when such vibrators are not in use.

PAINTING

- (a) Appropriate breathing air respirators should be provided for use by the workers when paint is applied in the form of spray, or a surface having lead paint is dry rubbed or scraped. Canister masks meant for the paint being used may also be permitted subject to the concentration of paint fumes is within the permissible limits.
- (b) Only the quantity of paint, thinner and polish required for the day's work should be kept at the work spot. Excess storage should not be permitted at the work spot.
- (c) Smoking, open flames or sources of ignition should not be allowed in places where paints, varnish, thinner and other flammable substances are stored, mixed or used. A caution board, with the instructions written in national language and regional language, 'SMOKING - STRICTLY PROHIBITED' should be displayed in the vicinity where painting is in progress or where paints are stored. Symbols should also be used on caution boards.
- (d) All electrical equipment of paint storage room should be of flame proof / explosion proof design. Suitable fire extinguishers / sand buckets should be kept available at places where flammable paints are stored, handled or used.
- (e) When painting work / hot resin mix is done in a closed room or in a confined space, adequate ventilation should be provided and ensured. In addition, suitable respirators should be provided. No portable electric light or any other electric appliance of voltage exceeding 24 volts should be permitted for use inside any confined space. In case of potential flammable concentration; intrinsically safe electrical fittings shall be used. Walkie-talkie or other means of communication should be provided. Rescue arrangements like full body harness with lifeline, tripod with pulley and extra BA sets should also be made available.
- (f) The workers should use PVC gloves and/or suitable barrier creams to prevent the skin getting contact with Epoxy resins and their formulations used for painting.

DEMOLITION

- (a) Before any demolition work is commenced and also during the progress of the work, all roads and open area adjacent to the work site should either be closed or suitably cordoned. Appropriate warning signs should be displayed for cautioning approaching persons/vehicles.
- (b) Before demolition operations begin, it should be ensured that all the service lines and electrical lines are de-energized.
- (c) Persons handling demolition operations shall use appropriate PPE.
- (d) All demolition operations should be carried out with safe and duly approved procedures which shall include following but not limited to:
 - (i) No masonry/material should be permitted to fall in such masses or volume or weight so as to endanger the structural stability of any floor or structural support.
 - (ii) No wall, chimney or other structure or part of a structure is left unguarded in such a condition that it may fall, collapse or weaken due to wind pressure or vibration.
 - (iii) No floor, roof or other part of the building should be overloaded with debris or materials as to render it unsafe.
- (e) After the demolition, the debris and other materials collected should be disposed safely and shall not be permitted to drop freely.
- (f) Entries to the demolition area shall be restricted to authorized persons wearing safety helmets and safety shoes only and recorded.

TRAFFIC

- (a) All the vehicles moving at sites should conform and comply with the requirements of Motor Vehicles Act, 1988 and the Rules made there under. All the drivers /operators of vehicles should possess valid driving license as per Motor Vehicles Act, 1988 or its latest amendment.
- (b) When the construction work causes interference with traffic such as road cutting or transit unloading of heavy equipment etc. notice of such interference should be given to the Engineer-in-charge and Safety in charge well in advance with the details of start of the work and time required for the completion of work.
- (c) A cleaner / assistant must be available for all heavy vehicles whenever vehicles move forward as well as in the reverse direction. All vehicles should be fitted with proper reverse horns, back view mirrors and indicator signals.
- (d) Facility shall ensure that the assessment of the driver's visual ability (vision and color blindness) is carried out as per relevant rules and statutes.
- (e) Effective speed breakers with zebra markings on the roads to regulate the speed at vulnerable points should be installed. Effective barricading with adequate caution signs should be placed to warn the vehicle drivers whenever the jobs are carried out on the road.
- (f) All vehicles moving at the site should have roadworthiness certificate issued by the

concerned authority.

(g) Speed limit boards and caution boards indicating blind turns should be installed wherever necessary.

(h) In general, the following maximum speed limits should be specified and implemented. Vehicles speed limits should be as per Motor Vehicle Act or 15 Km/h - whichever is lower. Extra precautions and care should be exercised particularly during heavy Material/equipment movements.

(i) Safety awareness programs should be conducted for all the drivers of the light, medium and heavy vehicles.

WORK IN AND AROUND WATER BODIES

(a) When work is done at a place where there is risk of drowning, all necessary rescue equipment such as life buoys and life jackets should be provided and kept ready for use.

(b) All necessary steps shall be taken for prompt rescue of any person in danger and adequate provision should be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work. Proper record of entry/exit to and from water bodies shall be maintained on shift basis and search operation shall be conducted as soon as any person is detected to be missing.

FIRE SAFETY

(a) All necessary precautions should be taken to prevent outbreak of fires at the construction site. It should be ensured that all hot works are carried out under valid work permit.

(b) Combustible materials such as wood, cotton waste, oil, coal, paints, chemicals etc., should be segregated and kept to the required bare minimum quantity at work place.

(c) Containers of paints, thinners and allied materials should be stored in a separate room which should be well ventilated and free from excessive heat, sparks, flame or direct rays of the sun. The containers of paint should be kept covered or properly fitted with lid and should not be kept open except while using.

(d) Adequate number of persons need to be trained on Fire safety and firefighting to work as Fire Squad members / Emergency Fire fighters.

(e) Fire extinguishers as approved by the Engineer-in-charge / Safety in charge should be located at the construction site at appropriate places. Such portable fire extinguishers should be periodically inspected and records displayed / maintenance and re-filling shall comply with the mandatory requirements.

(f) Availability of adequate water for firefighting should be ensured.

(g) Implementation of the provisions of various statutory licenses for storing gas cylinders, petroleum products, explosives etc. as per the relevant Acts and Rules shall be ensured wherever required.

ENVIRONMENTAL SAFETY

Relevant provisions of the state/central statutory authority regarding environment protection shall be adhered to.

PUBLIC PROTECTION

The Contractor should make necessary provisions to protect the public. He shall be bound to bear the expenses in defense of every action or other proceedings as per law that may be brought by any person for injury sustained owing to neglect of any precaution required to be taken to protect the public. He shall pay for any such damage and cost which may be awarded in any such suit, action or proceedings to any such person, or the amount, which may be fixed as a compromise by any such person.

SAFETY OF VISITORS

- (a) Visitors for the project shall be given health and safety induction before they are allowed in to the construction project. It shall include minimum PPEs to be used, information on hazards and risks at the work area, restricted areas of entry, emergency response arrangements, etc.
- (b) Visitors shall always be accompanied by one of the employees of the project site.
- (c) Visitors shall not be allowed in the hazardous areas unless they are competent and trained to work in such areas.

HOUSEKEEPING

- (a) It should be recognized that a proper place for everything and everything in its place is maintained for a good housekeeping.
- (b) The material required for immediate use only should be brought to the designated workplace and stacked properly and labeled suitably.
- (c) All work spots, site office and surroundings should all times be kept clean and free from debris, scrap, concrete muck, surplus materials and unwanted tools and equipment. A day-to-day collection and disposal of scraps/debris should be done safely at designated place.
- (d) Electrical cables should be so routed as to allow safe traffic by all concerned. Cable should be preferably supported on the brackets fixed along the wall to maintain safe access. Wherever routing on the floor cannot be avoided, care should be taken to ensure mechanical protection of these cables and safe access is not disturbed.
- (e) No material at any work place should be so stacked or placed or disposed of, as to cause danger, inconvenience or damage to any person or environment.
- (f) All unused scaffoldings, surplus/scrap materials and equipment / systems like temporary electrical panels etc. should not be allowed to accumulate and shall be removed from the premises at the earliest.
- (g) Accumulation of water /oil spillages on the floor or any other workplace should be prevented.
- (h) Proper aisle space marking should be provided in all workplaces.

OTHER STATUTORY PROVISIONS

Notwithstanding the clauses in the above subsections, there is nothing in these clauses to exempt the Contractor from the provisions of any other Act or Rules in force in the Republic of India. In particular, all operations involving the transport, handling, storage and use of explosives should be as per the standing instructions and conform to the Indian Explosives Act, 1884 and the Explosives Rules, 1983. Handling, transport, storage and use of compressed gas cylinders and pressure vessels should conform to the Gas Cylinder Rules 2004 and Static and Mobile Pressure Vessels (Unfired) Rules 1981. In addition, The Indian Electricity Act 2003 and Indian Electricity Rules 1956 as per latest amendments, The BOCW Act & Rules etc. shall be complied with.

PREPAREDNESS FOR ACCIDENT PREVENTION AND MITIGATION:

- (a) Any accident/injury cases occurring from the work should be reported to the Project Manager of the Site and Engineer in-charge Safety of the Organization.
- (b) Group Insurance in respect of all workmen engaged in the work against accidental injury/death for the period of the work shall be taken and documents in this regard shall be submitted to the Project Manager of the Organization before the start of work and the accident will be counted in the Contractor's record.

SAFETY ORGANIZATION OF THE CONTRACTOR

- (a) Every Contractor shall have an Industrial safety organization having qualified safety professionals as enumerated below or specified by regulator prior to the execution of job at project. The minimum numbers of safety professionals shall be
 - (i) One graduate engineer having post/advance diploma in Industrial safety - for every 1000 workers or part thereof.
 - (ii) Two numbers of safety supervisors having diploma in engineering and diploma in Industrial safety or at least 6 years' experience shall be in each shift for every 1000 workers or part thereof. Additional one supervisor for every 500 workers or part there off shall be posted.
- (b) Safety organizations should carry out safety surveillance, safety training, safety enforcement measures, safety audit etc. related to all works to fulfill the overall safety requirements of this 'guidelines.
- (c) Safety functionaries should be exclusively assigned with the work related to protection of health & safety of workers.
- (d) IS: 18001: 2007 gives detailed requirements of Health and Safety Management System requirements. IS: 15793 give requirements of good practices for managing environment, occupational health and safety legal compliance. This 'guidelines' prescribes requirements in addition to IS: 18001:2007 and IS: 15793 and gives guidelines on implementing these specific to a construction project.
- (e) The requirements prescribed in various central and state regulations including *Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996* and rules framed there under with respect to managing health and safety in construction projects shall be complied with.

(f) The Contractor shall deploy qualified and experienced line management personnel for supervising the jobs to be carried out by workers. In order to oversee the safe execution of the jobs especially hazardous jobs (listed out in para 3.11) by the contractors, at least one Safety Supervisor with the qualifications and experience mentioned in Table -1 shall be in place.

(g) The qualification, experience and the minimum number of safety professionals to be deployed by contractor shall be as per the following table:

TABLE -1: QUALIFICATION, EXPERIENCE & NUMBER OF SAFETY PROFESSIONALS FOR CONSTRUCTION PROJECTS

Category of Safety Person	Mandatory Requirement	Qualification
Safety Officer	One in each shift (minimum) up to 250 workers. If number of workers in a shift (including contractor's workers) exceeds 250, additionally one safety officer should be deployed for every 100 workers or part thereof.	Degree in engineering / technology and diploma in industrial safety with minimum two years of experience Or Diploma in engineering with diploma in industrial safety with minimum 6years' experience- Or A recognized degree in physics or chemistry and has practical experience of working in a factory in a supervisory capacity for a period of not less than 5 years
Safety Supervisor	One in each shift (minimum) up to 100 workers Or One Supervisor for any hazardous job (listed in para 3.11) if, carried out by Contractor irrespective of Number of workers. If number of persons working in a shift (including the contractors 'workers) exceeds 100, additionally one safety supervisor should be deployed for every 100 workers or part thereof.	Diploma in Engineering and diploma in Industrial Safety

JOB SUPERVISION AT SITE

(a) The Contractor must ensure adequate job supervision through qualified and experienced Supervisors - at least one Supervisor for each hazardous job activity to ensure safety during work execution. Similarly, there should be adequate on-site engineering support ensuring coverage of at least one experienced Engineer for every ten supervisors and part thereof. Such Supervisors and Engineers need to envisage the hazards and safety requirements of their job activities and its sequence and ensure adequate protective measures. In case of any doubt; they shall consult the Safety personnel and take necessary advice for preventive measures.

TRAINING REQUIREMENTS

(a) Specific training at project site at his cost. The subcontract site-in-charge should arrange induction safety training of at least four hours duration to all workmen prior to engaging them to work and refresher training to them after 6 months on a monthly basis covering 20% of the workman in a month with 100% coverage within 6 months. This training should be given with necessary Audio, Visual, Posters, and other training aids and as per approved syllabus. This training shall include mock trials of wearing of helmet, use of safety belt and its hooking up to an independent life line etc. The safety-training instructor must certify the workmen for having understood safety aspects and use of PPEs successfully in mockup trial. To ensure proper understanding of safety instructions and safety training, the contractor shall employ literate (at least able to read safety instructions) workers only. In exceptional cases of not meeting literacy requirement the workers shall be imparted supplementary training.

(b) The job supervisors and the engineers will have to undergo detailed

(c) Safety training of at least three days duration at the plant in safety supervision and accident prevention techniques. This training would at the cost of the contractor and then only he/she would be given permanent entry pass to project.

(d) Contractor must note that in case the safety induction training as per 3.1 is not conducted within 3 days; his workmen shall not get project entry pass wherever applicable.

REQUIREMENTS AND SPECIFICATION OF PPE TOOLS AND TACKLES

(a) Every contractor must keep adequate stock of ISI certified (or of relevant international standards) personal protective equipment (PPE), safe working tools and safe working appliances like platforms and access ladders, guard railing etc. and shall ensure these are used during the job for safe execution of the work. These PPE, Tools and Appliances must be inspected quarterly. Contractor on demand by the Organization shall produce the record of such inspections.

(b) All implements being used for height work like scaffold, access stairs/ladders, nets etc. should be of ISI marked material and should be certified by Contractor's safety professional prior to its safe use and to the effect that each implement should have display showing it can be safely used.

WORK PRACTICES

(a) Tool Box discussions, prior to taking up the work every time, will be carried out by the Contractor's supervisory personnel to all workers using project guidelines.

Adequate and qualified supervision using checklists during the execution of jobs is a must. The Contractor shall ensure that all his workmen must take safety permit for each high-risk job as per project procedure.

- (b) If any hazardous work is found without safety work permit/ JSA/HIRA/safe working procedure, it will be recorded for deduction of payment under appropriate penalty clause. The decision of the Engineer-in-charge, in regard to the penalty imposed shall be final and binding. However, before imposition of penalty, a fair opportunity of being heard shall be provided to the Contractor.

PERMIT TO WORK SYSTEM

- (a) Activities requiring permit to work shall be decided before starting the construction and shall be suitably documented in the project health and safety plan. Some of the activities which may require permit to work are:
- i) Excavation
 - ii) Entry into confined spaces
 - iii) Electrical work (All voltage levels including LV and above)
 - iv) Opening manholes, covers and grills from floor openings and removal of railings
 - v) Blasting operation
 - vi) Hot work
 - vii) Work on plant, machinery and other power driven equipment.
 - viii) Working at height
 - ix) Working at night hours.
- (b) The Project may establish a permit to work system for any other hazardous activity, which it feels necessary to be controlled administratively for safe execution.
- (c) Record of safety work permit should be maintained in a systematic manner. All the safety conditions and requirements stipulated in the Safety Work Permit should be ensured strictly.
- (d) The Engineer in charge of the Contractor should ensure that only authorized personnel are deployed for hazardous works/jobs.

PERSONAL PROTECTIVE EQUIPMENT

(1) GENERAL

Although the primary approach in any safety effort is that the hazard to the workmen should be eliminated or controlled by engineering methods rather than protecting the workman through use of Personal Protective Equipment (PPE). Engineering methods could include design change, substitution, ventilation, mechanical handling, atomization etc. Under those situations when it is not possible to introduce any

effective engineering methods for controlling hazards, it is necessary that workman use appropriate type of PPE. For example, in construction work there is the possibility of a hand tool, a bolt, or some loose material to fall from an elevated level and striking the head of workman working below. It is therefore necessary and must that construction worker wear a safety helmet. It is for such situations, that various Act and Rules have provisions for use of appropriate type of PPE.

It is thus recognized that use of PPE is an important and necessary consideration in the development of a safety programme. Once the safety professional decides that PPE is to be used by workmen, it is essential to select right type of PPE and construction agency should ensure that workman uses it and also PPE is correctly maintained.

(2) PERSONAL PROTECTIVE EQUIPMENT (PPE)

- (i) All personal protective equipment as considered necessary should be made available for the use of the persons employed on the site and maintained in a condition suitable for immediate use. Also adequate steps should be taken by line manager to ensure proper use of PPE.
- (ii) All the PPEs in use should be as per relevant IS standards.
- (iii) All persons employed at the construction site should use safety helmets. Safety helmet should be with BIS mark and should have its headband with back support and chin strap.
- (iv) Workers employed on mixing asphaltic materials, cement and lime mortars should use protective goggles, protective foot wears, hand gloves and respirators as required.
- (v) Persons engaged in welding and gas-cutting works should use suitable welding face shields. The persons who assist the welders should use suitable goggles. Protective goggles should be worn while chipping and grinding.
- (vi) Stonebreakers should use protective goggles. They should be seated at sufficiently safe distances from one another.
- (vii) Safety goggles should be of shatterproof type and with zero power.
- (viii) Persons engaged in or assisting in shot blasting operations and cleaning the blasting chamber should use suitable gauntlets, overalls, shatterproof & dust-proof goggles and self-contained breathing apparatus set.
- (ix) All persons working at heights more than 2.5 m above ground or floor and exposed to risk of falling down should use full body harness safety belts, unless otherwise protected by cages, guard railings, etc. In places where the use of safety belts is not feasible, suitable net of adequate strength fastened to substantial supports shall be used.
- (x) When workers are employed in sewers and inside manholes that are in use, it should be ensured that the manholes are opened and are adequately ventilated at least for an hour. After it has been well ventilated, the atmosphere inside the space should be checked for the presence of any toxic gas or oxygen deficiency by a competent person and recorded in the register before the workers are

allowed to get into the manholes. A pilot team should enter the area donning self-contained breathing apparatus (SCBA). The manholes opened should be cordoned off with suitable railing and provided with warning signals or caution boards to prevent accidents. There should be proper illumination in the night. Depending upon the work situation, the contractor should provide PPE including the SCBA as recommended by Engineer in charge (Safety) of the Organization

MEDICAL MANAGEMENT

(1) GENERAL

- (i) The Contractor shall make arrangements for first aid and medical services for the injured or sick persons for prompt attention or aid.
- (ii) The medical facilities at first -aid centre shall be adequate to immediately cater to the injured based on the hazard potential and probable severity of expected type of injuries.
- (iii) The first-aid centre shall be provided with the adequate equipment and medicines for catering to the site requirements. The first-aid centre shall be manned depending on the working hours / on round the clock shift basis. The services of at least one qualified medical practitioner (medical officer) shall be made available by the Contractor.

(2) MEDICAL FACILITIES

- (i) Arrangement for a manned and equipped ambulance's should be made available at work site during the working hours / on round-the- clock shift basis.
- (ii) It should be ensured by the facility that occupational health monitoring of Contractors' workers is carried out as per provisions of BOCW Act & Rules as per latest amendment.
- (iii) Display of emergency contact numbers of important persons and hospitals and route map of site shall be maintained at designated places.

(3) MEDICAL MANAGEMENT OF SERIOUS INJURIES

- (i) In case of serious injuries, the injured should be shifted to the nearest First Aid centre at site immediately. The opinion of Medical officer / Certifying Surgeon should be sought immediately for medical management.
- (ii) After providing first aid treatment; the injured should be shifted to designated medical facility of the site / hospital for further medical assistance, in an ambulance along with a nursing attendant.
- (iii) The doctor at the medical facility of the site / hospital attending the case shall assess the extent of injuries and render immediate medical aid. If the situation warrants trauma / special care for the injured; shall be shifted to the referral hospital, having all the requisite facilities for specialized treatment in ambulance along with a medical attendant.

(iv) A list of such referral hospitals for specialized medical management facilities for the injured persons should be available with the project management/ First Aid Centre / Safety in charge of the Site.

(4) SAFETY PREFORMANCE RECORD

On completion of the contract work, a safety performance certificate of the safety record during the execution of the work will be jointly made by Project Manager and Safety In-charge. Certificate shall be based on Accident free records and Safety performance.

Schedule 3- FORMAT OF COMPLETION CERTIFICATE

I, (Name of JIL Representative), acting as [●], under and in accordance with the General Conditions of the Contract (the “**Contract**”), for execution of Noida Wish town Project (“**Project**”), through [●] (Name of Contractor), hereby certify that the Tests specified in Clause 7 have been successfully undertaken to determine compliance of the Project with provisions of the Contract, and I am satisfied that the Project can be safely and reliably placed for the homebuyers thereof.

It is certified that, in terms of the aforesaid Contract, all works forming part of the Project have been completed, and the Project is hereby declared ready for entry into commercial operation on this the day of 2024.

SIGNED, SEALED AND DELIVERED

For and on behalf of

JAYPEE INFRATECH LIMITED by:

(Signature)

(Name)

(Designation)

(Address)

Schedule 4- FINAL ACCEPTANCE CERTIFICATE

Project	
Date	
Contract Agreement No.	
Original Time for Completion	
Commencement Date	
Site Possession Date	
Original Completion Date	
Extension of Time	
Variation Amount	
Scheduled Taking Over Date	
Taking Over Date	
<p>In accordance with the General Conditions of the Contract (the “Contract”) for design and execution of Noida Wish town Project (“Project”), and in consultation with JIL we certify that in accordance with Clause 7.6 of the General Conditions of Contract, the Contractor has (a) successfully completed (i) the criteria specified in the Technical Specifications at levels meeting; and (b) fully completed all the Works, including the Punch List, free of Defects or Deficiencies.</p>	
<p>It is hereby certified that, in terms of the General Conditions of Contract including Clause 7.6.1 of the Contract, the Contractor has:</p> <p>(i) delivered all final Construction Drawings, as-built drawings and manuals required under the Contract on [●];</p> <p>(ii) successfully completed the criteria specified in the Technical Specifications;</p> <p>(iii) successfully completed all the Works free of defects or deficiencies; and</p> <p>(iv) there are no pending dues or obligations of the Contractor for any delay including the liquidated damages on this the day of 2024.</p>	
<p>The issuance of this certificate is for the limited purpose set out in Clause 8 and does not absolve the Contractor of its other obligations and liabilities set out in the General Conditions of Contract.</p>	
<p>This FinalAcceptance Certificate is therefore, being issued by JIL to the Contractor under</p>	

Clause 7.6 of the General Conditions of Contract on this the day of 2024.			
	Contractor	Engineer-in-charge	Engineer-in-charge
	Completed	Inspected	Accepted
Signature			
Name			
Date			

Schedule 5- TAKING OVER CERTIFICATE

Project	
Date	
Contract Agreement No.	
Original Time for Completion	
Commencement Date	
Site Possession Date	
Scheduled Taking Over Date	
Extension of Time	
Variation Amount	
<p>In accordance with the General Conditions of the Contract (the “Contract”) for design and execution of Noida Wish town Project (“Project”), and in consultation with JIL we certify that the Tests on Completion have been completed in accordance with Clause 7 of the General Conditions of Contract. I further confirm that the Works have been performed in accordance with the Contract, free of Defects or Deficiencies.</p>	
<p>The Contractor has the following pending Punch List items remain to be completed by the Contractor:</p>	
<p>The Defects Liability Period commences from the date of issue of this Taking Over Certificate.</p>	
<p>The issuance of this certificate is for the limited purpose set out in Clause 8 and does not absolve the Contractor of its other obligations and liabilities set out in the General Conditions of Contract.</p>	
<p>This Taking Over Certificate is therefore, being issued by JIL to the Contractor under Clause</p>	

8 of the General Conditions of Contract on this the day of 2024.			
	Contractor	Engineer-in-charge	Engineer-in-charge
	Handed Over	Inspected	Taken Over
Signature			
Name			
Date			

Schedule 6- PROFORMA OF BANK GUARANTEE FOR PERFORMANCE GUARANTEE

(To be executed on non-judicial stamp paper of Rs.100/- or of appropriate value)

Ref: Bank Guarantee No. _____

Date: _____

To:

THIS deed of Guarantee (“**Guarantee**”) is made this [●] day of [●] by [Bank Name], having its branch office at [Address], and registered office at [●] (hereinafter referred to as the “Guarantor or Bank” which expression shall unless repugnant to the context or meaning thereof include its legal representatives, executors, administrators, successors-in-interest and permitted assigns) through its authorized signatory/representative, [●], duly authorized *vide* bank resolution/circular dated [●]

IN FAVOUR OF

M/s. Jaypee Infratech Limited , a company registered under the Companies Act, 1956, having its registered office at [Address] (hereinafter referred to as the “Company” which expression shall unless repugnant to the context or meaning thereof include its successors in interest and assigns).

WHEREAS [name of contractor], a company registered under the Companies Act, 1956, having its registered office at [Address] (hereinafter referred to as “Contractor” which expression shall unless repugnant to the context or meaning thereof include its successors-in-interest, [partners, only in the case where the Contractor is a firm] and permitted assigns) having entered into Contract No. [●] dated [●] together with other contract documents listed in the contract i.e. the priced Bill of Quantities, Technical Specifications, Drawings, with the Company, for execution of [●] (“Works”) for an amount of INR [●] (*Rupees [] only*) (hereinafter collectively referred to as the “Contract” which expression shall include all the amendments thereto) with the Company. AND WHEREAS the aforesaid Contract issued by the **Company** to the Contractor is for an estimated amount of **INR [●] (Indian Rupees [●] only) (“Contract Price”)** and under the terms of the aforesaid Contract, the Contractor having agreed to provide an irrevocable bank guarantee for the due, punctual, satisfactory and faithful performance of the entire Contract for INR [●] (Indian Rupees [●] only) being 3 (three)% of the Contract Price towards a Performance Bank Guarantee valid till the end of guarantee/warranty period.

AND WHEREAS the Bank at the request of the Contractor has agreed to give this irrevocable Guarantee.

NOW THEREFORE this deed of Guarantee covenants as follows:

1. In consideration of the aforesaid premises and in consideration of the faithful performance by the Contractor of the terms and conditions of the said Contract which

has to be guaranteed by a bank, we, the Guarantor, hereby guarantee that the Contractor will duly comply and faithfully perform all its obligations and responsibilities under the said Contract failing which we, the Guarantor, do hereby unconditionally and irrevocably undertake to pay to the Company forthwith on first demand no later than 48 (forty eight) hours from receipt of such demand, and without protest or demur or proof or satisfaction and without reference to the Contractor such amount or amounts as the Guarantor may be called upon to pay not exceeding in the aggregate a sum of INR [●] (Indian Rupees[●] only).

2. The Bank hereby agrees, guarantees and undertakes that it shall forthwith, immediately upon receipt of written intimation/demand/letter/claim from the Company addressed to the Bank, pay to the Company without any deduction, reservation, protest, demur, delay or reference to the Contractor, the aforesaid sum of INR [●] (Rupees [●] Only).
3. The Bank further undertakes and agrees that it shall make payment to you of the aforesaid amount of INR [] (Rupees [] Only) immediately upon demand being made, as aforesaid, without in any manner referring to, or seeking consent of or instructions from the Contractor and without in any manner, explicitly or by conduct, issuing notice of our intent to honour our commitment under this Guarantee or on the issue of any instructions to the contrary issued by the Contractor.
4. We further undertake and agree that we shall make payment to you of the aforesaid amount of INR [●] (Rupees [●] Only) irrespective of and notwithstanding any dispute or demand to the contrary made/raised by the Contractor and without requiring the Company to invoke any legal remedy to compel the Guarantor to pay the same even if Contractor considers such demand of the Company, unjustified. Notwithstanding anything to the contrary, the Company's decision as to whether the Contractor has made any default or defaults under the Contract and the amount to which the Company is entitled by the reason thereof, will be binding on us and we shall not be entitled to ask the Company to establish his claims under this Guarantee but we, the Guarantor, will pay the sum on demand without any objection.
5. Any such demand made by the Company on the Bank shall be conclusive and binding notwithstanding any difference between the Company and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority or any instructions, letter contrarily issued by the Contractor.
6. We agree that Guarantee herein contained shall be irrevocable and shall be kept valid and binding on the Guarantor and shall continue to be in force and enforceable till it is specifically discharged by the Company by issuance of a letter/certificate to such effect. No periodic renewal by the Bank shall be necessary.
7. This Guarantee shall not be terminable by notice or any change in the constitution of the Bank or by any other reason whatsoever and the liability of the Guarantor hereunder shall not be impaired or discharged by any extension or agreed with or without our knowledge or consent by or between the parties to the said Contract.
8. We, the Guarantor, also agree that we shall not during the currency of this Guarantee herein given or during the period of its extension revoke the same even by giving notices to the Company.

9. The Company shall have the fullest liberty, from time to time, without in any way affecting any of its rights under this Guarantee to vary any of the terms and conditions of the said Contract, or extend the time for performance of the Contract by the Contractor, or vary the terms of the Contract, or to postpone, for any time or from time to time, any of the Company's rights or the exercise of power vested in them or of any right which they might have against the Contractor and either to enforce and seek compliance with or forbear to enforce any of the terms, conditions and covenants contained or implied in the Contract between the Company and the Contractor or any other course or remedy or security available to the Company. Notwithstanding any such extension or variation, the Bank shall not be released of its obligations as assumed under these presents by the exercise by the Company of any liberty with reference to matters aforesaid or any of them or by reason of any act or forbearance or other acts of the Company or any other indulgence shown by the Company to the Contractor or by any variation or modification of the said Contract or any other act matter or things whatsoever which under the law relating to sureties would but for the provision hereof have the effect of so releasing us from our liability hereunder provided always that nothing contained herein will enlarge our liability hereunder. We agree that irrespective of such extension of time or any variation in the Contract, our liability to pay the aforesaid amount of INR [●] (Indian Rupees [●] Only) without demur, objection shall continue to remain unaltered, enforceable and valid.
10. The Bank further agrees that the Company, at its option, shall be entitled to enforce this Guarantee against the Bank, without in the first instance proceeding against the Contractor or making any demand upon the Contractor to pay and notwithstanding any security or other Guarantee that the Company may be possessed of in relation to the Contractor's liabilities, either in relation to the Contract or otherwise and our liability to make unconditional payment on demand by the Company shall not be affected or diluted and shall remain valid, enforceable and unaltered.
11. The Bank agrees that the Company shall be the sole judge of as to whether the said Contractor has committed any breach or breaches of any of the terms and conditions of the said Contract and the same shall be final, absolute and unequivocal and further agrees that the liability of the Bank to the Company under this Guarantee shall remain in full force and effect notwithstanding the existence of any difference or dispute between the Contractor and the Company, the Contractor and the Bank and/or the Bank and the Company or otherwise howsoever affecting these presents or the liability of the Contractor to the Company, and notwithstanding the existence of any instructions or purported instructions by the Contractor or any other person to the Bank not to pay or for any cause withhold or defer payment to the Company under these presents. Notwithstanding the existence of such difference, dispute or instruction, the Bank shall be and remain liable to make payment to the Company in terms hereof.
12. The Bank further agree that for the purpose of this Guarantee any notice issued to us by the Company and the amount claimed in such notice as being payable by the Contractor to the Company shall be deemed to be correct and shall not be disputed or questioned by us but shall be paid in the manner herein before stated forthwith and without delay. The Bank agrees that this Guarantee shall not be affected by any change in our constitution or that of the Contractor. We further undertake not to revoke this Guarantee during the period of its validity viz., till the company discharges us, in writing, as aforesaid, notwithstanding any dispute, difference between the Contractor

and ourselves and our bankers' lien either general or particular in relation to the Contractor shall not include the amount guaranteed to the Company under this Guarantee.

13. This Guarantee shall not be determined affected or discharged by the liquidation or winding up, dissolution or due to the change in the constitution or insolvency of the Bank or the Contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to the Company in terms hereof.
14. This Guarantee shall come into force from [●] and shall remain in full force as per the terms of the Contract, i.e upto [●].
15. This Guarantee shall continue and hold good until it is released by the Company on the application by Contractor after Contractor has discharged all its obligations towards warranty under the said Contract or till [●] , whichever is earlier. We, the Guarantor may, at our option, undertake to extend the validity period of this Guarantee for any time or from time to time should it mutually agreed by the Company and the Contractor, become necessarily, for such period(s) as requested in writing by Contractor.
16. In order to give full effect to the Guarantee herein contained the Company shall be entitled to act as if we were your Principal debtors in respect of all your claims against Contractor hereby Guaranteed by us as aforesaid and we hereby expressly waive all our rights of suretyship and other rights if any which are in any way inconsistent with the above or any other provision of the Guarantee.
17. Any notice signed by the representative of the Company by way of request, demand or otherwise hereunder may be sent to by telex, fax or by post to the Bank addressed as aforesaid and, if sent by post, it shall be deemed to have been given at the time when it would be delivered in due course of post and in proving such notice it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an authorized officer of the Company that the envelope was so posted shall be conclusive.
18. The Contractor shall bear the stamp duty in respect of this instrument.
19. The Company shall have a right to invoke this Performance Bank Guarantee, as many times as it deems fit, either in part or in full, as it may deem fit.
20. The Bank shall not be relieved from its liability by reason of any such act or omission on the part of the Company or any indulgence by the Company to the Contractor or other thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of relieving us of our obligations under this Guarantee, including the following:
 - a) any defense based on any legal disability or other defense of the Contractor, by reason of the cessation or limitation of the liability of the from any cause other than full payment of all sums payable under this Guarantee;
 - b) any defense based on any statute or rule of law that provides that the obligation of a surety must be neither larger in amount nor in any other respects more burdensome than that of a principal;

- c) the benefit of any statute of limitations affecting the liability of the Bank or the enforcement of the this Guarantee.
21. Our liability under this Deed of Guarantee is restricted to a sum of INR [●] (Indian Rupees [●] only) and this Guarantee shall remain in force until [●] , and unless a claim under the Guarantee is lodged with us within three month from the date of expiry of the Guarantee, i.e. on or before [●] all your rights under the said Guarantee shall be forfeited and we shall be relieved and discharged from all liability there under.
22. Notwithstanding anything contained herein:
- i. The Bank's liability under the Guarantee shall not exceed INR [●] (Indian Rupees [●] only)
 - ii. The Guarantee shall be valid up to [●] .
 - iii. Bank shall be liable to pay the guaranteed amount or any part thereof under this Guarantee only and only if you serve upon as a written claim or demand on or before [●].

Dated this the _____ day of _____ 2024.

NAME & SIGNATURE OF THE BANK

OFFICIAL WITH SEAL OF THE BANK AND

POA NO. _____ OR AUTHORITY NO. _____

**Schedule 7- PROFORMA OF BANK GUARANTEE FOR MOBILIZATION ADVANCE
("Advance Payment Bank Guarantee)**

(To be executed on non-judicial stamp paper of Rs.100/- or of appropriate value)

Ref: Bank Guarantee No. _____

Date: _____

To:

THIS DEED OF GUARANTEE ("**Guarantee**") is made and executed on this day [●] of [●]2024 at [●] by [Name of the Bank], having its branch office at [Address] and registered office at [●], (hereinafter referred to as the "**Guarantor/Bank**", which expression shall unless repugnant to the context or meaning thereof include its legal representatives, executors, administrators, successors-in-interest, and permitted assigns) through its authorized signatory/representative, [●], duly authorized *vide* bank resolution/circular dated [●]

IN FAVOUR OF

M/s Jaypee Infratech Limited, a company registered under the provisions of the Companies Act, 1956, having its registered office at [Address] and corporate office at [Address] (hereinafter referred to as the "**Company**", which expression shall unless repugnant to the context or meaning thereof include its successor-in-interest and permitted assigns)

WHEREAS M/s. [name of contractor], a company duly incorporated under the provisions of the Companies Act, 1956, having its registered office at [Address] and/or (mention name of the Contractor's Partnership firm with its Registered Office or Proprietorship firm) and (hereinafter referred to as the "**Contractor**" which expression shall unless repugnant to the context or meaning thereof include its successors-in-interest, [partners, only in the case where the Contractor is a firm] and permitted assignees) having entered into Contract No. [●] dated [●] together with other contract documents listed in the contract i.e. the priced Bill of Quantities, Technical Specifications, Drawings, with the Company, for execution of [●] ("**Works**") for an amount of INR [●] (*Rupees [] only*) (hereinafter referred to as "**Contract**" which expression shall include all the amendments thereto);

AND WHEREAS the aforesaid Contract issued by the **Company** to the Contractor is for an estimated amount of INR [●] (**Indian Rupees [●] only**) ("**Contract Price**") and as per the terms of the aforesaid Contract, a sum of INR [●] (Indian Rupees [●]only) being [●]% of the Contract Price is to be released by the **Company** as a mobilization advance ("**Advance**") to the Contractor, in order to facilitate the Contractor in commencing work under the aforesaid Contract;

AND WHEREAS against the Advance being provided to it by the Company, the Contractor has agreed to provide an irrevocable bank guarantee of an amount equal to the Advance (an Advance Bank Guarantee) valid till the end of guarantee/warranty period.

AND WHEREAS under the terms of the aforesaid Contract, the Contractor has authorized the Company to deduct the aforesaid amount of INR [●] (Indian Rupees [●] only) namely, the Advance from all/any amounts that becomes or are due and payable to the Contractor under the said Contract.

AND WHEREAS the Guarantor at the request of Contractor has agreed to give this irrevocable Bank Guarantee.

NOW THEREFORE this deed of Guarantee covenants as follows:

1. That in consideration of the aforesaid premises and in consideration of the said Advance made by the Company to the Contractor which has to be guaranteed by a bank, and at the request of the Contractor, we, the Guarantor, hereby guarantee that the Contractor will duly comply and faithfully repay amounts due to the Company towards the Advance under the said Contract, failing which we, the Guarantor, do hereby unconditionally and irrevocably undertake to pay to the Company forthwith on first demand and without protest or demur or proof or satisfaction and without reference to the Contractor such amount or amounts as the Guarantor may be called upon to pay not exceeding in the aggregate a sum of INR [●] (Indian Rupees [●] only).
2. This Guarantee is issued subject to the condition that the liability of the Bank under this Guarantee is limited to a maximum of INR [●] (Indian Rupees [●] only) and this Guarantee shall remain in full force up to [date] and can be invoked by the Company by a written demand of the relevant amount and stating that the Contractor has failed to fulfill his obligation under the Contract to the Guarantor on or before [●] at its branch at [●].
3. The Bank hereby agrees, guarantees and undertakes that it shall forthwith, immediately upon receipt of written intimation/demand/letter/claim from the Company addressed to the Bank, pay to the Company without any deduction, reservation, protest, demur, delay or reference to the Contractor, the aforesaid sum of INR [●] (Rupees [●] Only).
4. The Bank further undertakes and agrees that it shall make payment to you of the aforesaid amount of INR [●] (Rupees [●] Only) immediately upon demand being made, as aforesaid, without in any manner referring to, or seeking consent of or instructions from the Contractor and without in any manner, explicitly or by conduct, issuing notice of our intent to honor our commitment under this guarantee or on the issue of any instructions to the contrary issued by the Contractor.
5. The Bank further undertakes and agrees that it shall make payment to the Company of the aforesaid amount of INR [●] (Rupees [●] Only) irrespective of and notwithstanding any dispute or demand to the contrary made/raised by the Contractor and without requiring the Company to invoke any legal remedy to compel the Guarantor to pay the same even if Contractor considers such demand of the Company, unjustified. Notwithstanding anything to the contrary, the Company's decision as to whether the Contractor has made any default or defaults under the Contract and the amount to which the Company is entitled by the reason thereof, will be binding on us and we shall not be entitled to ask the Company to establish his claims under this Guarantee but we, the Guarantor, will pay the sum on demand without any objection.

6. Any such demand made by the Company on the Bank shall be conclusive and binding notwithstanding any difference between the Company and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority or any instructions, letter contrarily issued by the Contractor.
7. We agree that Guarantee herein contained shall be irrevocable and shall be kept valid and binding on the Guarantor and shall continue to be in force and enforceable till it is specifically discharged by the Company by issuance of a letter/certificate to such effect. No periodic renewal by the Bank shall be necessary.
8. This Guarantee shall not be terminable by notice or any change in the constitution of the Bank or by any other reason whatsoever and the liability of the Guarantor hereunder shall not be impaired or discharged by any extension or agreed with or without our knowledge or consent by or between the parties to the said Contract.
9. We, the Guarantor, also agree that we shall not during the currency of this Guarantee herein given or during the period of its extension revoke the same even by giving notices to the Company.
10. The Company shall have the fullest liberty, from time to time, without in any way affecting any of its rights under this Guarantee to vary any of the terms and conditions of the said Contract, or extend the time for performance of the Contract by the Contractor, or vary the terms of the Contract, or to postpone, for any time or from time to time, any of the Company's rights or the exercise of power vested in them or of any right which they might have against the Contractor and either to enforce and seek compliance with or forbear to enforce any of the terms, conditions and covenants contained or implied in the Contract between the Company and the Contractor or any other course or remedy or security available to the Company. Notwithstanding any such extension or variation, the Bank shall not be released of its obligations as assumed under these presents by the exercise by the Company of any liberty with reference to matters aforesaid or any of them or by reason of any act or forbearance or other acts of the Company or any other indulgence shown by the Company to the Contractor or by any variation or modification of the said Contract or any other act matter or things whatsoever which under the law relating to sureties would but for the provision hereof have the effect of so releasing us from our liability hereunder provided always that nothing contained herein will enlarge our liability hereunder. We agree that irrespective of such extension of time or any variation in the Contract, our liability to pay the aforesaid amount of INR [●] (Indian Rupees [●] Only) without demur, objection shall continue to remain unaltered, enforceable and valid.
11. The Bank further agrees that the Company, at its option, shall be entitled to enforce this Guarantee against the Bank, without in the first instance proceeding against the Contractor or making any demand upon the Contractor to pay and notwithstanding any security or other Guarantee that the Company may be possessed of in relation to the Contractor's liabilities, either in relation to the Contract or otherwise and our liability to make unconditional payment on demand by the Company shall not be affected or diluted and shall remain valid, enforceable and unaltered.
12. The Bank agrees that the Company shall be the sole judge of as to whether the said Contractor has committed any breach or breaches of any of the terms and conditions of the said Contract and the same shall be final, absolute and unequivocal and further agrees that the liability of the Bank to the Company under this Guarantee shall remain

in full force and effect notwithstanding the existence of any difference or dispute between the Contractor and the Company, the Contractor and the Bank and/or the Bank and the Company or otherwise howsoever affecting these presents or the liability of the Contractor to the Company, and notwithstanding the existence of any instructions or purported instructions by the Contractor or any other person to the Bank not to pay or for any cause withhold or defer payment to the Company under these presents. Notwithstanding the existence of such difference, dispute or instruction, the Bank shall be and remain liable to make payment to the Company in terms hereof.

13. The Bank further agree that for the purpose of this Guarantee any notice issued to us by the Company and the amount claimed in such notice as being payable by the Contractor to the Company shall be deemed to be correct and shall not be disputed or questioned by the Bank but shall be paid in the manner herein before stated forthwith and without delay. The Bank agrees that this Guarantee shall not be affected by any change in its constitution or that of the Contractor. The Bank further undertakes not to revoke this guarantee during the period of its validity viz., till the Company discharges the Bank, in writing, as aforesaid, notwithstanding any dispute, difference between the Contractor and the Bank and bankers' lien either general or particular in relation to the Contractor shall not include the amount guaranteed to the Company under this Guarantee.
14. This Guarantee shall not be determined affected or discharged by the liquidation or winding up, dissolution or due to the change in the constitution or insolvency of the Bank or the Contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to the Company in terms hereof.
15. This Guarantee shall come into force from [●] and shall remain in full force as per the terms of the Contract, i.e upto [●].
16. This Guarantee shall continue and hold good until it is released by the Company the Company on the application by Contractor after Contractor has discharged all its obligations towards warranty under the said Contract or till [●], whichever is earlier. We, the Guarantor may, at our option, undertake to extend the validity period of this Guarantee for any time or from time to time should it mutually agreed by the Company and the Contractor, become necessarily, for such period(s) as requested in writing by Contractor.
17. In order to give full effect to the Guarantee herein contained the Company shall be entitled to act as if we were your Principal debtors in respect of all your claims against Contractor hereby Guaranteed by us as aforesaid and we hereby expressly waive all our rights of suretyship and other rights if any which are in any way inconsistent with the above or any other provision of the Guarantee.
18. Any notice signed by the representative of the Company by way of request, demand or otherwise hereunder may be sent to by telex, fax or by post to the Bank addressed as aforesaid and, if sent by post, it shall be deemed to have been given at the time when it would be delivered in due course of post and in proving such notice it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an authorized officer of the Company that the envelope was so posted shall be conclusive.

19. The Contractor shall bear the stamp duty in respect of this instrument.
20. Our liability under this Deed of Guarantee is restricted to a sum of INR [] (Indian Rupees [●] only) and this Guarantee shall remain in force until [●], and unless a claim under the Guarantee is lodged with us within three month from the date of expiry of the Guarantee, i.e. on or before [●] all your rights under the said Guarantee shall be forfeited and we shall be relieved and discharged from all liability there under.
21. Notwithstanding anything contained herein:
- i) The Bank's liability under the Bank Guarantee shall not exceed INR [●] (Indian Rupees [●] only)
 - ii) The Bank Guarantee shall be valid up to [●].
 - iii) Bank shall be liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon as a written claim or demand on or before [●].

Dated this the _____ day of _____ 20____.

NAME & SIGNATURE OF THE BANK

OFFICIAL WITH SEAL OF THE BANK AND

POA NO. _____ OR AUTHORITY NO. _____

(To be on non-judicial stamp paper of appropriate value as per the stamp act relevant to the place of execution)

SCHEDULE 8 of GCC

DECLARATION-CUM-UNDERTAKING

To,

Jaypee Infratech Limited
Contract Division, J Block,
Sector-128, Noida, UP
201304

Dear Sir,

Sub: Contractor's undertaking in relation to the bidding process for the Balance Civil (Structure and Finishing) Works for Multistoried Group Housing Project, ".....", for Towers at Jaypee Wish-Town, Sector-131, Noida (UP)

1. I/We, [name of the chairman/managing director/director/authorized person of successful bidder], son of [●], aged about [●] years, currently residing at [Address to be inserted] and having Aadhaar / Passport number [●], on behalf of [name of the successful bidder] having registered office at [●] ("**Contractor**"), refer to the Bidding Documents, as amended from time to time, inviting binding offers for submission of Bids:
2. I/We hereby provide our unconditional acceptance of the terms and conditions of the Bidding Documents as amended from time to time, in accordance with the procedure set out under the Bidding Documents, including but not limited to the disclaimers set out in the Bidding Documents.
3. I/We hereby undertake, declare, agree and acknowledge that the Contractor:
 - (a) It has knowledge that in terms of plan approval order dated 07.03.2023 ('Approval Order') passed by the NCLT, Principal Bench New Delhi, Implementation and Monitoring Committee (hereinafter, "**IMC**") was constituted, to *inter alia*, manage the affairs of the company and overseeing the implementation of the Resolution Plan. The said Approval was confirmed and Ratified/upheld by the Hon'ble National Company Law Appellate Tribunal vide its Judgment dated 24.05.2024. Pursuant to the said Judgment, there is now no impediment in implementation of the approved resolution plan of Successful Resolution Applicant and therefore, JIL (through its new Management, as IMC has been dissolved), in the interest of thousands of home-

buyers have carried out this tendering process and awarding the tender / contract to the eligible successful bidder;

- (b) It has conducted its own due diligence before participating in the bid process and this bid is submitted by the Contractor based on its own due diligence without being influenced by the representations made by the JIL having all adequate knowledge of all developments.
4. That the Contractor hereby also declare, agree and acknowledge that in the event the whole bidding process is challenged by any party before any court or the Resolution Plan does not / attained finality or there is a legal embargo in the carrying out / implementation of the Resolution Plan or JIL has decided to not to proceed with all or part of the Project for any reasons whatsoever, as a consequent of which JIL may suspend or terminate the awarded contract.
5. That further on occurrence of any events as mentioned in Para 4 above or on account of any other unforeseen events and circumstances which prevents the JIL to proceed with execution of awarded works, the Contractor in such circumstances shall suspend progress of part or all of the Works upon any issuance of instructions / direction from JIL and / or its Board / Management / Director or its Authorised Representative/Site in Charge/Engineer in Charge. Further the Contractor also undertakes, declare and affirm that in these circumstances:-
- (i) Contractor shall bound by the decision of JIL and/or its Board/Directors/Management or its Authorised Representative/ employees which shall be final and binding in settlement of account pro rata to the amount of work undertaken by the Contractor;
- (ii) Contractor shall not, notwithstanding anything contrary contained herein or in any contract / tender documents or any other documents, upon execution of the Contract, claim any payments or any other monetary entitlements like damages, interest, compensation or any other payment on account of any idle charges resulting from stoppage of work upon issuance of instructions from JIL and/or its members or its Authorised Representative/ employees/Directors/Board;
- (iii) Contractor shall have no right to sue or take any action/ claims against JIL and/or against its Directors/Board/Management or its Authorised Representative/ employees for such period during which no construction activity is possible or to be carried out by the Contractor on account of instructions given by JIL or its Authorised Representative/ employees;
- (iv) Contractor further agrees that idle time period during which no construction activity was carry out at Project site shall be excluded from agreed completion time period;
- (v) Contractor shall have a limited right i.e., the sole resource to seek settlement of account pro rata the amount of work that has been undertaken by the Contractor.

- (vi) waives all or any right to initiate legal proceedings against JIL or its Authorised Representative/ employees/Board/Management/Directors, for damages, payment, claims other than those explicitly outlined in the Bidding documents.

- 6. That Contractor in above events, also acknowledges / admits and affirms the rights of the JIL to make relevant changes in the scope of the awarded works, to alter the timelines set out in the Tender Document or make any changes to the process or procedure set out therein in the interest of the home-buyers/or in the conformity of any court order.

- 7. Contractor further agrees and acknowledges that no payment shall be made to the Contractor in circumstances owing to change in law and force majeure events like Pandemic, Lockdown, Natural Disaster, NGT restrictions, construction ban or any delay caused by the government authorities in granting necessary approvals/sanctions/permits affecting the regular construction activities and overall development of the real estate project and the Contractor shall not claim any idle charges/ damages/penalty for the same period;

- 8. I/We further undertake and confirm that the undertaking submitted is unconditional and irrevocable and acknowledge and agree that JIL or its Authorised Representative/ employees/Management/ Board/Director reserve the right to negotiate better terms with the Contractor and any decision taken by the JIL or its members or its Authorised Representative/ Employees / Board / Management / Director in relation to awarding of the Tender shall be final and binding on the Contractor.

- 9. This undertaking forms an integral part of the Tender Document and any breach hereof would be considered as a breach of the Tender Document.

- 10. Capitalised terms used herein but not defined shall have the meaning assigned to such term in the Bidding Documents.

I/We agree that I/We shall comply with all terms and conditions aforesaid of this Undertaking.

Thank you.

Yours sincerely,

.....

[Signature and name of Authorized Representative]

Rubber stamp/seal of the Contractor

SECTION - III
SPECIAL CONDITIONS OF
CONTRACT (SCC)

These Special Conditions of Contract, hereinafter referred to as the (“SCC”), shall be read as part and parcel of the Contract and in conjunction with the General Conditions of Contract. Should there be any contradiction between the two, the provisions of the Special Conditions of Contract shall prevail.

1. THE CONTRACT

1.1 Definitions

Dates, Times, and Periods

“Completion Date”, “Scheduled Taking-Over Date” and “Taking-Over Date” shall have the same meaning and interpretation as contained in other related tender documents.

2. THE ENGINEER-IN-CHARGE

2.1 Engineer-in-charge’s Duties and Authority

2.1.1 The Engineer-in-charge shall carry out the duties and functions as required of him in the best interest of the project. The detailed duties, function and authority already defined in the related tender documents, and all shall be read together in harmony to each other.

3. CONTRACTOR

3.1 General Obligations

3.1.1 The Contractor shall be deemed to have included in his rates all expenses for dewatering, required for proper execution of the Work. The work shall include but not necessarily be limited to, the safe disposal of the resulting water; removal, replacement and/or reoccupation of the water-logged soils/surfaces; backfilling plugging of all temporary sumps, ditches, temporary materials and devices.

3.1.2 Contractor shall be deemed to have included in his rates all costs associated with removal of flood waters and any associated sludge debris etc. from the basement area or any other part of the work in the event of flooding due to heavy rains during its construction activities and until the Contractor completes and hands over all its works, under the Contract, to JIL.

3.1.3 The Contractor shall execute the majority of mechanised excavation up to bottom of raft, associated dewatering of underground water, manual excavation and related dressing required for commencing the Plain Cement Concrete (PCC) work.

4. ERECTION AND COMMISSIONING:

The Contractor shall carry out the complete erection and commissioning. All the materials shall be moved from their place of storage into the plant by the Contractor. The Contractor shall make his own arrangement to off-load materials received at respective Air/Rail/Road transport terminal points, dispatch to Site and to store all material received at Site. JILs shall provide clear storage and erection space only. All

erection tools and tackles as and when required to suit the erection programme shall be provided by the Contractor. All consumables required for erections such as cotton waste, kerosene, oil, emery paper, coil string, bamboos and planks for scaffolding etc. as well as necessary welding rods, gases etc. shall be provided by the Contractor. Protective and finished painting shall be carried out by the Contractor. Carbon steel surface shall be thoroughly cleaned before painting. The Contractor shall indicate the electricity requirements during erection. The Contractor shall remove all the waste material or rubbish from and about the work Site and leave the job thoroughly cleaned up and ready for use.

5. **METHOD OF MEASUREMENT**

To evaluate Work under this Contract and instructed as per work order/change orders issued, except where any general or detailed description of the Work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the Specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items, which are not covered by Specifications, measurements shall be taken in accordance with the relevant standard method of measurements issued by the Bureau of Indian Standards and for any item where no such standard is available then the decision of the EIC shall be final and binding and no extra claims shall be entertained or allowed at any stage in this regard.

6. **JIL'S PERSONNEL**

- 6.1 The Contractor at his own cost shall provide / erect and maintain where directed simple watertight office fully furnished of minimum 2000 Sft. covered area for JIL's/PMC's Project Staff and the Engineer-in Charge. This accommodation shall be well lit and ventilated with windows, doors with lock. The Engineer -in-charge's office shall be a minimum of 100 Sft. area and shall have a table, chair and drawers for keeping drawings and tack board for displaying drawings. The accommodation shall be demolished when directed by JIL.
- 6.2 The Contractor shall also provide and erect all necessary sanitary convenience for the Engineer -in -Charge, Site staff and the workmen, maintain in a clean orderly condition and clean and deodorize the ground after removal.

7. **BOQ ITEMS**

- 7.1 The quantities mentioned in the BOQ are tentative and may vary as per the Site conditions / directions of JIL. Payment shall be released to you for quantities actually executed at Site and measured for. JIL reserves the right to add/ delete/ alter/ modify/ withdraw any items or part of the item or to reduce or increase any quantity or area to any extent without any limitations. The Contractor will execute the work/ items/ area/ quantity as per actual and final requirement of the work as per instructions of JIL. The Contractor will be bound to execute these items as per contract rates. JIL will entertain no claims or damages or part of the profit (which the Contractor might not make due to change in the quantities). No extra claim is entitled on this account.
- 7.2 Except GST (which shall be paid extra by JIL), all taxes, duties, levies, i.e., labour cess etc., or any other statutory obligation shall be borne by the Contractor and the same

shall be deemed to be included in the BOQ rates. No claim on this account shall be entertained or allowed at any stage subsequently. Taxes shall be deducted as applicable at source in accordance with the statutory requirements of all payments including advances. Any increase/ decrease in the taxes/ duties or any taxes/duties levied/ withdrawn during the period of the Contract or extensions thereof, if any, and related to work, shall be adjusted as per actual. For the purposes of clarity, all labour law compliances, BOCW Act compliances / Cess deposits, liabilities, punitive actions, costs, expenses, fines etc. shall be meted on the Contractor and it will always, indemnify and hold harmless JIL for such actions on that account.

7.3 It is mandatory for the Contractor to get himself registered with concerned authorities and pay all Taxes as applicable.

8. RATES

8.1 The rates quoted shall be deemed to allow for all minor extras and constructional details which are not specifically shown on drawings or given in the specifications but are essential in the opinion of the EIC for the execution of works to conform to good workmanship and sound engineering practices. The EIC reserves the right to make any minor changes during the execution without any extra payment. If any discrepancy is noticed between special conditions, specifications, bill of quantities and drawings, the order of precedence of documents shall be taken in the contract on priority as follows, ONLY IN RESPECT OF THE RATES:

- Bill of quantities (Price-bid).
- Special Conditions of Contract (SCC)
- Specification
- General Conditions of Contract (GCC)
- Drawings (GFC) issued by Architect.
- CPWD Specification

8.2 JIL's decision to clarify any item under minor changes, minor extras and constructional details shall be final, conclusive, and binding on the Contractor.

8.3 The rates quoted by the Contractor shall be net to include all requirements described in the Contract Agreement.

8.4 The rates quoted by the Contractor shall include supply of material and labour, necessary for completing the work in the best and most workmanship like manner to the satisfaction of the EIC and which in the opinion of the EIC cannot be made better. The rates shall be complete in all respects including cost of materials, erection, fabrication, labour, supervision, tools and plant, transport, insurances, sales and other taxes, royalties, duties and materials, contingencies, breakage, wastage, sundries, scaffoldings, etc on the basis of works contract. However, the price shall be subject to adjustment, in case of variation in the rate of excise, customs duty or any taxes / duties due to any act of legislature, within the originally agreed period or any extension thereof.

- 8.5 In case the rates of identical items under different sub-heads/parts are different, the lowest of these will be taken for the purpose of making the payments.
- 8.6 The rates for different items are for all heights, depths, widths, and positions, unless otherwise specified against the item. No claim in respect of any leads for any item specified in the Schedule of Quantities, for which separate items for lead do not exist in that schedule, will be entertained.
- 8.7 The work shall be executed as per the programme drawn up or approved by the EIC and it shall be so arranged as to have full co-ordination with any other agency employed at Site. No claim for idle labour or charges for plant, machinery and equipments shall be entertained nor shall any claim on account of delay in the completion of the work be tenable except extension of time which may be granted to the Contractor on request to be submitted to the EIC.
- 8.8 The Contractor shall permit free access and afford normal facilities and usual convenience to other agencies or departmental workmen to carry out connected work or other services under separate arrangements. The Contractor will not be allowed any extra payment on this account.
- 8.9 The contractor shall provide all equipments, instruments, labour and such other assistance required by the EIC for measurement of the works, materials etc.
- 8.10 Even though the payment shall be effected under different items in the schedule of quantities, the various items in the schedule of quantities shall be deemed to cover all aspects of the work for the completion of the work as per drawings, from excavation to the finishing, notwithstanding any space adjustment of possible omission in the description of the item and specifications thereof regarding incidental items of work, without which the whole work cannot be deemed to be complete. The Contractor is advised to keep this in mind while quoting rates as no claims in this regard shall be entertained.
- 8.11 All tools, tackles & equipments necessary for the work shall be provided by the Contractor. The quoted rates shall take into account for providing any such equipment, which may not form part of the installation, but is necessary for the execution of the job.
- 8.12 Where the Contractor (or its Sub-Contractors) fails to make any payment, JIL has the right (but not an obligation) to make such payments and deduct the same from any payments due to the Contractor.
9. **ESCALATION**
- 9.1 Rates in the contract will remain firm for 12 months from the date of issue of the work order. The contractor will be paid escalation as per 10CC clause of CPWD Specifications for the work executed beyond 12 months from date of commencement onwards. The escalation will be considered for the original contract period only and will not be applicable for the extended period, if time period is extended due to reasons attributable to the contractor.
- 9.2 The compensation for escalation in the prices of materials and labour, when due, shall be worked out based on the following provisions: -

- i) The escalation shall be payable on quarterly basis on 85% Value of work done excluding extra items (except for items, rates of which have been derived from nearest similar item in the BOQ) and the cost of materials of items where basic rates have been fixed in the BOQ (Termed as "W" i.e., Cost of Work).
- ii) Escalation shall be payable exclusively as per 10CC of CPWD as above and nothing extra shall be payable on account of the increase in the cost of fuel, cement & steel.
- iii) The material and labour elements shall be 75% and 25% respectively of 85% value as under para (i) above. For the purpose of labour escalation minimum wage of labour shall be considered.
- iv) The Base month for working out such escalation shall be month of award of work.
- v) Escalation shall be payable to the Contractor, if his progress matches the Miles Stone/ Construction Schedule submitted by him and approved by EIC. Escalation shall also be paid for such period of extension, which is occasioned for reasons attributable to JIL, and not otherwise.
- vi) Escalation will not be payable for part month.
- vii) The contractor shall support his claims with documentary proof.

9.3 The compensation for escalation for materials and labour shall be worked as per the formulae given below: -

A) Adjustment for civil component of construction 'Materials'

$$V_m = 0.85 \times W \times \frac{X_m}{100} \times \frac{(MI-MIO)}{MIO}$$

Where,

V_m = Variation in material cost i.e., increase or decrease in the amount in rupees to be paid or recovered.

W = Cost of Work done as worked out in Bills. This cost of work done will be excluding of value of materials for which base rates are specified in the BOQ / Contract document.

m = Component of 'materials' expressed as percent of the total value of work.

MI = Average value for the period under consideration of All India Wholesale Price Index for Civil Component of Construction Material (except Cement and Steel) as issued by CPWD monthly on the basis of All India Wholesale Price Index, published by Economic Advisor to Govt. of India, Ministry of Industry & Commerce, New Delhi.

MIO = All India Wholesale Price Index for Civil Component of Construction

Material (except Cement and Steel) as issued by CPWD for the base month on the basis of All India Wholesale Price Index, published by Economic Advisor to Govt. of India, Ministry of Industry & Commerce New Delhi.

- B) The following principles shall be followed while working out the indices mentioned in para above.
- i) Quarter means January to March, April to June, July to September and October to December.
 - ii) The compensation for escalation shall be worked out at quarterly intervals and shall be with respect to the cost of work done as per bills paid during the three calendar months of the said quarter. The first such payment shall be made for the quarter beyond 12 months from the date of commencement of work. At the time of completion of the work, the last period for payment might be less than 3 months, depending on the actual date of completion.
 - iii) The index (MI) relevant to any quarter/period for which such compensation is paid shall be the arithmetical average of the indices relevant to the three calendar months. If the period up to date of completion after the quarter covered by the last such instalment of payment, is less than three months, the index MI shall be the average of the indices for the months falling within that period.
- C) The compensation for **escalation for labour** shall be worked out as per the formulae given below: -

$$VL = 0.85 \times W \times \frac{Y}{100} \times \frac{(LI - Llo)}{Llo}$$

Where,

VL = Variation in labour cost i.e., amount of increase or decrease in rupees to be paid or recovered.

W = Value of work done, worked out above.

Y = Component of labour expressed as a percentage of the total value of the work.

LI = Minimum wage in rupees of an unskilled adult male mazdoor fixed under any law, statutory rule or order as applicable on the last date of the quarter previous to the one under consideration

Llo = Minimum daily wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as on the base month.

- D) The following principles will be followed while working out the compensation above.

- i) The minimum wage of an unskilled male mazdoor mentioned above shall be the one notified by Uttar Pradesh Government, both relevant to the place of work and the period of reckoning.
 - ii) The escalation for labour also shall be paid at the same quarterly intervals when escalation due to increase in cost of materials is paid under this clause. If such revision of minimum wages takes place during any such quarterly intervals, the escalation compensation shall be payable at revised rates only for work done in subsequent quarters.
 - iii) Irrespective of variations in minimum wages of any category of labour, for the purpose of this clause, the variation in the rate for an unskilled adult male mazdoor alone shall form the basis for working out the escalation compensation payable on the labour component.
- E) In the event the price of materials and/or wages of labour required for execution of the work decrease/s, there shall be a downward adjustment of the cost of work so that such price of materials and/or wages of labour shall be deductible from the cost of work under this contract and in this regard the formulae herein before stated shall mutatis mutandis apply and the decision of the EIC in this behalf shall be final and binding on the Contractor.

10. Coordination of the Works

- 10.1 The Contractor during the execution of the Works shall co-ordinate with other Contractors, and other Agencies associated with the Project and shall work in harmony with them without causing any hindrance or obstruction or impeding the progress of their work in any way. Shafts/cutouts (sizes) confirmation that specified can be accommodated within the available size of shafts etc.
- 10.2 In respect of the work of other Contractors and Agencies, where the commencement or progress of such work of any other Contractor, or Agency is dependent upon the completion of particular portions of the Contractor's Works or generally upon the Contractor maintaining progress in accordance with the approved construction programme, it shall be the responsibility of the Contractor to complete such portions and maintain such progress.
- 10.3 Should any differences arise between the Contractor and the other Contractors, and Agencies, these shall immediately be brought to the attention of the EIC who after reviewing the matters causing the differences will give his decision which shall be final and binding on the Contractor.

The Contractor shall also ensure:

- a) Co-ordination with Civil Contractors to prepare detailed shop drawings for related works in accordance with the civil construction drawings.
 - b) Co-ordination with Electrical Contractors to co-ordinate all relevant information regarding power and exact location of panels.
- 10.4 Since many other Contractors and Agencies will be engaged at Site and shall be working simultaneously, the Contractor shall always ensure that during the

execution of his work or during the operations and movements of equipments and supply vehicles and machinery, no damage or injury is caused to the work or property or personnel of other Contractors and agencies.

- 10.5 In case of any such loss or damage the Contractor shall take full responsibility for the same and shall bear all cost and expenses thereof. Also, the Contractor shall be responsible and liable for all delays caused due to such damage and or injury and for the consequences which the other Contractors and Agencies may have to face or to which they may be subjected to or be accountable for because of such delays.

11. **Compliance with Statutes, Regulations and Applicable Laws**

The Contractor shall comply with the latest version of, inter alia, the following labour and industrial laws, rules, regulations, orders etc. of various authorities duly updated and any new and existing laws, rules, regulations, orders etc. not listed below but relevant to the execution of works under this contract:

- (i) Minimum Wages Act 1948
- (ii) Employees Liabilities Act 1938
- (iii) Industrial Disputes Act 1947
- (iv) Maternity Benefits Act 1961
- (v) Contract Labour(R&A) Act 1970
- (vi) Workmen's Compensation Act 1923
- (vii) Contract Labour (R&A) Central Rule 1971
- (viii) Child Labour (Prohibition & Regulation) Act 1986
- (ix) Building and other construction workers (Regulation of Employment & Condition of Service Act 1996
- (x) Building & Other Construction Welfare Cess Act 1996
- (xi) Industrial Employment Act 1946.
- (xii) Personal Injuries (Compensation Insurance Act)
- (xiii) Payment of Bonus Act 1965.
- (xiv) UP Contract Labour (R&A) Rules 1975.
- (xv) Environmental Laws,
- (xvi) Provident Fund Act.
- (xvii) C.P.W.D Safety Code
- (xviii) POSH

The Contractor shall at all times be in compliance with the Applicable Laws, with respect to the performance of the Contract including inter-alia all labour Laws safety rules and shall adhere to Minimum Wages Act, Workmen Compensation Act, BOCW Act and Employees Provident Fund Act. Contractor will indemnify Employer in this regard and shall take adequate precautionary measures to avoid any type of accident at Site. JIL shall not be liable for or in respect of any damages or compensation payable according to law in respect or in consequence of any accident or injury to any workmen or other person in the employment of the Contractor or any Sub-Contractor, save and except in case of an accident or injury resulting from any act or default of JIL. In case of accident, compensation to your workmen shall be borne by you. The Contractor shall indemnify and keep indemnified JIL against all such damages and compensation, save and except as aforesaid, and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

JIL will obtain the commencement certificate, no-objection certificate and occupation certificate if applicable for the permanent building works under this Contract.

The Contractor shall be responsible for issuing the required notices to authorities and to obtain and retain with him at his own cost all other approvals from the statutory bodies (Labour, Labour cess, ESI, PF, Tax Department etc.), pertaining to works under this contract and temporary structures to be constructed at Site, and any other approval required to facilitate performance of Contractor's work under the Contract till completion. All the necessary fees and incidental charges required to be paid to obtain the Applicable Permits shall be borne solely by and be the obligation and liability of the Contractor.

Refusal by statutory authorities to issue completion / occupation certificate or any other approvals due to the Contractor's failure to construct the building in accordance with the sanctioned plans and/or specifications shall render the Contractor liable for damages even as the Contractor shall continue to be liable to obtain such certificates at his cost. The Contractor will not engage in any act, commission or omission, which may impact JIL's rights, interests or remedies, under the Applicable Laws or otherwise. The Contractor will indemnify JIL in defending all the notices, claims, demands, suits, etc. as may be raised by any Government against JIL, which may be in deviation of the above representation made by the Contractor, solely at its own cost and risk. However, all liability arising from any untoward incident or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.

12. **Quality Assurance / Quality Control (QA/QC)**

The Contractor shall be liable to maintain the quality as specified in this Contract document and up to the satisfaction of the EIC. The relevant reports to be submitted to the Engineer-In charge by every weekend.

13. **Site Data**

Ratings of all items shall be appropriate to suit the conditions of the particular Site at which the item will be used. All the equipment shall be fit for continuous work under the most severe weather conditions of Site.

14. **Programme**

Schedules to be furnished by the Contractor within 15(Fifteen) days of signing of the Contract Agreement:

- i) The Programme, if any, and the completion schedule showing all the sequential activities of work required to be carried out from the commencement of the work up to its completion based on 15(fifteen) Days or as approved slab casting for typical floors. Works associated with each of the disciplines, civil, water supply and sanitation, firefighting, and electrical works etc., shall be clearly identifiable and interface among them shown.
- ii) Schedule for providing sample materials to be arranged by the Contractor.
- iii) Schedule of materials required from JIL.
- iv) Plant & Equipment mobilization and commissioning Schedule.
- v) Manpower Schedule
- vi) Cash flow Schedule
- vii) Shop drawings Schedule if required (including status and delivery)

The Contractor shall be required to submit detailed construction methodology and get it approved by the EIC no less than 30(thirty) days in advance of each activity in normal course. In the case of activities required at short notice the same shall be provided promptly for approval. The methodology shall contain all necessary information like construction technique, operation details of equipment's to be used, manpower to be deployed, materials to be used, sequence of operations, time schedule, safety measures etc.

Milestones shall be as identified in the Programme, for the Works awarded under the Contract. The Contractor shall submit the milestones for the approval of the EIC within 15(fifteen)days of signing the Contract Agreement and shall be based on 15(fifteen) days of slab casting for typical floors.

15. **Weekly Progress Reports**

In addition to the Monthly Progress Reports, Periodic progress reports, on a weekly basis, shall be prepared and submitted by the Contractor. Reporting shall continue until the contract period is over. Each progress report shall include:

- i. charts showing the scheduled and actual status of the performance of the Works. A detailed description of the completion schedule achieved,

and the details of Works provided prior to the date of the progress report and the extent to which scheduled payments therefore have been received. Appropriate weightage system for percentage progress shall be developed by the Contractor and submitted to the Engineer-in-charge for its approval and upon approval with or without modification by the Engineer-in-charge, the same shall be binding on and be followed by the Contractor and shall not be modified without the prior consent of JIL.

- ii. four (4) sets of photographs taken from pre-determined locations, which illustrate the progress of the Work.
- iii. records of the personnel and the plants and equipment and tools of the Contractor at the Site;
- iv. copies of quality assurance reports with respect to the Works performance of in accordance with quality assurance plan;
- v. safety statistics required under Applicable Laws, including details of any hazardous incidents and activities relating to environmental aspects and public relations;
- vi. comparisons of actual and planned progress, with details of any aspects which may jeopardize the completion in accordance with this Contract, including completion schedule and the measures and/or catch-up plan being (or to be) adopted to overcome such aspects. It shall include a clear identification and evaluation of problems and deficiencies in the Works (including but not limited to, an evaluation of any factors which are anticipated to have a material effect on provision of the Works and the completion schedule);
- vii. certification that all amounts due to all Sub-Contractors prior to the date of the progress reports have been paid;
- viii. all other information reasonably requested by JIL and the Engineer-in-charge;
- ix. a man power status and schedule to the Engineer-in-charge, on the first day of every calendar month, detailing the man hours scheduled for the month, skill wise and area wise;
- x. anticipated delays in the schedule for the month, if any, and action plan to overcome them;
- xi. details of accidents, whether major or minor;
- xii. any deviation in regard to quality or process;
- xiii. any industrial relations problem;
- xiv. weather related information;
- xv. availability of active and non-active labours at the Site, mapped with

the requirement of the labours;

xvi. labour related compliances under the Applicable Laws.

The Contractor shall attend the progress review meetings organized by JIL on periodic basis and provide the complete details with respect to the progress of performance of the Works, resource mobilization, compliance with statutory requirements and permits and provide targets for the future period as required by JIL. Every week, or sooner if required by the EIC, the approved programme charts and various submitted schedules shall be reviewed in relation to the actual progress of the Work and shall be updated as necessary. If at any time it appears to the EIC that the actual progress of the Work does not conform to the approved programme, the Contractor shall produce, at its expense and without reimbursement therefore, a revised programme showing the modifications to the approved programme and the additional input of resources by the Contractor necessary to ensure completion of the Work within the time stipulated for completion. The submission to and approval by the EIC of such programme or the furnishing of such particulars shall not relieve the Contractor of any of his responsibilities, obligations, and liabilities under the Contract.

16. CONDITIONS PRECEDENTS AND MANDATORY OBLIGATIONS TO BE COMPLY, OBSERVE BY THE CONTRACTOR.

16.1.1 That at all times during the term / validity / existence of this Agreement, the Contractor shall maintain minimum of active / working labour of _____ in number at Project site. This strength of labour deployment may increase as per the instructions given to Contractor by JIL to achieve the timelines as agreed between the parties and as per the schedule for completing the development of the Project _____. The Contractor shall maintain its financial resources appropriately to meet the targets set by JIL without depending on payment clearance or any assistance from Company. The Contractor shall also ensure that adequate staff including engineers etc as agreed and stated in schedule shall be fully deputed at site. Further the Contract shall always keep the plant and machinery required for construction of the project at site. In no event the minimum labour, staff, engineer, plant and machinery be less than the minimum schedule as agreed between the parties.

16.1.2 The Contractor shall maintain the quality of construction throughout the term of this Agreement for each and every work assigned as per the tender documents or as per the requirements of JIL.

16.1.3 As time is the essence of this agreement/contract and the project need to completed on or before the timelines as agreed between the parties herein, the Contractor undertake and agree to complete the work as per agreed timelines or monthly progress report. Further the amount of work to be done shall be as per the agreed schedule between the parties and the contract Running account bill shall also be as per the projected timelines and schedule agreed between the parties.

16.1.4 That performance of the Services / Discharging the duties by the Contractor is the essence of this Agreement, in case of any instance of non-performance, negligence of the Contractor/or its Personnel either due to shortage of minimum labour on site, shortage of staff, equipment, plant and machinery etc or due to slow work at site or not as per the agreed schedule of the amount of the work to be done, then, in all such or any event, the same will be considered as an event of default on part of the contractor, giving a right to JIL to terminate this Agreement forthwith or impose any monetary penalty / performance penalty upto 10 percent of the contracted value as stated in this agreement. In case of continuous default of non - compliance of any obligations for more than 3 occasions / or for 3 continuous / consecutive months, JIL have all rights to terminate the Agreement without taking any obligation to give notice and full and final payment will be processed only after taking the consideration of all events of non -performance by the Contractor during the period prior to the termination. The effects / consequences of such termination and rights and obligations of parties will be as per the tender documents or General or Special Conditions. Further the termination of the contract does not bar JIL to recover penalty or liquidated damages as per the contract.

17 Daily Site Reports

The Contractor shall throughout the contract period, submit daily Site reports on an approved/prescribed proforma to the EIC. The reports will include, but not be limited to:

- I. Record of the Site progress.
- II. Number of employees at the Site. The records should include all staff employed by the Contractor or Sub-contractors.
- III. Number of men employed on individual trades.
- IV. Plant and machinery at Site (including an indication as to whether the plant is working or standing).
- V. Notification of accidents, if any.
- VI. Events influencing the progress of the Work.

The Contractor shall maintain the Site order book for the day-to-day records of deficiencies/ rectifications required etc.

The Contractor shall maintain a Site register that records the name and time of arrival and departure, at Site, of any visitor.

Concrete Pour Register- the Contractor shall maintain the concrete pour register for taking the instructions from the EIC or JIL.

18 Protection of the Environment

The Contractor shall make proper arrangements for the treatment and discharge of sewage and drainage from or in connection with the construction and shall maintain the same to the satisfaction of JIL if they may be required. All sanitary waste shall be treated in accordance with the Applicable Law including applicable local regulations. In case the basements of the block are contiguous with its adjoining block proper co-ordination and planning of various activities including interface activities shall be required to be done in such a manner as not to influence the works of other Agencies / Contractors.. The Contractor shall at all times during the term of the contract shall observe, duly compliant with all the applicable laws and regulations, related compliances and immune / indemnify JIL /Management/Board/ Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc. All liabilities/ actions /prosecutions shall solely be attributed upon the Contractor. That whether, it has been specifically contained in the Tender Documents/Contract/in this GCC / SCC or not, the onus and consequences for breach of non – compliance/violation of any law, regulation, govt. order, authority, promulgation, legislative or judicial decision is solely meted out or attributable on the Contractor only. The Contractor shall remain keep JIL or its members/Board of JIL/EIC/Management of JIL/Employees harm-free from any claims, liabilities, criminal action or prosecution and all related consequences for any mishap, accidents, fire, mishappening etc. that occurred on project site resulting in the loss of man and property.

19 Electricity and Water

- 19.1 The Contractor shall make his own arrangements to always have soft water for construction purposes until the contract period is over, in accordance with the Applicable Laws and approvals. The Contractor shall have water storage facilities within the Site for use of water by the Contractor and further distribution at his own cost with the approval of JIL. Any cost towards arrangement, procurement and consumption of water and other associated charges, if any payable to any Government shall be borne by the Contractor. The Contractor shall be required to avoid all wastage and limit the consumption of water to the minimum requirements. The Contractor will install his own pumps, pipelines, buffer storage tanks complete with all fittings, gate valves, standard water meters etc. at his own cost. However, JIL may supply water supply on chargeable basis at one point in case supply is available.
- 19.2 The contractor shall make his own arrangement for electricity for construction purposes. JIL cannot ensure continuous and un-interrupted supply of power which is in the scope of the contractor as the possibility of interruptions/ breakdowns/ shutdowns in the supply of power cannot be ruled out. Contractor shall be responsible for all distribution points as may be required for the Work. However, JIL may supply electricity on a chargeable basis at one point in case supply is available. In case the supply of power is delayed or interrupted for long durations, Contractor shall not claim any compensation on this account.
- 19.3 The Contractor shall also make arrangement for alternative standby services at his own cost in the form of Generators of adequate capacity (day & night) so that there is no delay in progress of Work as per construction schedule submitted by him and approved by the EIC.
- 19.4 The Contractor shall also share electricity from his Generators and electric

connection with other Contractors, Sub-contractors, Vendors & EIC who, except EIC, shall share proportionate cost thereof (the electric supply shall be free for EIC) with them at the prevalent tariff of the State Electricity Board for grid power supply & at mutually agreed rates for captive generation. The cost of the energy meter shall be borne by the Contractor. Contractors shall ensure adequate capacity of generators to support such load sharing with other vendors.

- 19.5 The Contractor shall prepare schematic distribution diagrams of distribution of electricity for construction purposes incorporating the requisite safety measures and get them approved by the EIC. The distribution at Site shall be in accordance with the approved schematic diagrams. The contractor shall ensure incorporation and strict implementation of all safety parameters, equipment's, instruments, and directions given by the EIC from time to time in this regard.
- 19.6 The Contractor shall install temporary distribution lines for electricity, ensuring such that the work of other agencies/vendors is not interrupted or hampered. In case, during construction, these lines foul or interrupt or hamper the work of other agencies/vendors, the Contractor shall remove and relocate the same at his own cost within the time ordered by the EIC.
- 19.7 Subject to the provisions under Clause 18.2 above, all statutory Fees and miscellaneous expenses and costs for electric power and connection for construction purposes shall be borne by the Contractor.

20 **Security of the Site**

Safe custody of all equipments & materials brought at Site by the Contractor and/ or provided by JIL, to be incorporated in the work, shall be the responsibility of the Contractor till the final taking over by JIL. He should therefore employ sufficient staff for watch and ward at his own cost.

The Contractor shall be liable to ensure proper security arrangements for the life of workers employed at Site, materials & work executed at Site till the time it is taken over by JIL.

21 **Opportunities for other contractors**

The Contractor shall permit free use of Scaffolding, Walkways, Working Platforms erected by it in place for its work by the aluminum / glazing installation contractor, lift contractor, heating, ventilation and air conditioning contractor, plumbing contractor, electrical contractor & other Contractors working within the building (s) or on the outer faces of the building(s). The Contractor may shift its scaffolding materials to another location if required with prior information to EIC.

22 **PERFORMANCE GUARANTEE:**

The Contractor shall provide within 15(fifteen) days of signing contract agreement, a Performance Bond for an amount equal to 3% (three percent) of Contract Value as awarded in the form of Bank Guarantee in the approved format (schedule-6) as provided in GCC of the tender documents. The Performance Guarantee shall be initially valid up to the stipulated date of completion of work plus 60 days. In case the time for completion of works gets extended, the Contractor shall get the validity of Performance Guarantee extended up to such an extent as to cover such extended time

for completion of work + 60 days. The performance guarantee shall be returned to the Contractor/ discharged, without any interest thereon, after the satisfactory completion of work (after issuance of Final Completion Certificate).

23 DESIGN

23.1 Construction Documents

On the award of the work, the Contractor shall immediately proceed with the preparation of the Construction Documents showing detailed schematic shop drawings, detailing the components that are to be installed and the ancillary works that are to be carried out. Three sets of all such schematic drawings shall be submitted to the EIC for their approval to ensure that the works will be carried out in accordance with the specifications and drawings, including such changes as may have been mutually agreed upon. All the drawings shall be received by the EICs for their approval, within three weeks of the award of the work. The approval of the drawings by the EIC shall in no way relieve the Contractor of his obligations to execute the work as per intent and purpose as laid down in the specifications. Any omissions and/or errors shall be made good or rectified whether or not the drawings are approved.

23.2 Samples

Before ordering the material necessary for these installations, the Contractor shall submit to the EIC for approval, a sample of every kind of material such as cables, conductors, switches, boxes etc., along with the catalogues with their dimensional details.

24 Operation and Maintenance Manuals

24.1 The Contractor shall prepare and produce instruction, operation and maintenance manuals in English for the use, operation and the maintenance of the supplied equipment and installations and submit to the EIC in (6) copies at the time of handing over. The manual shall generally consist of the following:

- a) Description of the project.
- b) Operating instructions.
- c) Maintenance instructions including procedures for preventive maintenance.
- d) Manufacturers catalogues.
- e) Spare parts list.
- f) Trouble shooting charts.
- g) Drawings.
- h) Type and routine test certificates of major items.
- i) One (1) set of reproducible 'as built' drawings.

25 STAFF AND LABOR**Labor Laws**

- a. The Contractor shall comply, and shall cause its Subcontractors to comply, with all the relevant labor laws including but not limited to labour cess under BOCW act, applying to its employees, and shall duly pay and afford to them all their legal rights under Applicable Laws and Applicable Permits. The Contractor shall apply and obtain registration under Labour Laws, BOCW act etc at its own expenses.
- b. Contractor will take Workmen's Compensation policy for its scope of work at its own cost. Nothing extra shall be payable for this by JIL.
- c. JIL will have the right to pay directly to the labours / workers in case they are not paid as per the prevailing Minimum Wages Act, applicable in Noida, Uttar Pradesh, and / or, for their outstanding for the work done at the Site. The amount so paid shall be recovered from the bills of the Contractor.
- d. The Contractor shall also, at its sole cost, effect and maintain insurance as required by Applicable Laws for all actions, suits, claims, demands, costs, charges and expenses arising in connection with the death of or injury to any person employed by the Contractor or its Sub-Contractors for the purpose of provision of Supplies (including workmen's compensation insurance).
- e. The contractor will submit copies of insurance certificates and all policies etc. as applicable and necessary as per the contract document.

Facilities for Staff and Labor

- a. Only space for the aforementioned temporary structures shall be provided free of cost. The cost of construction, installation, electricity, water, sanitation and all other arrangements whatsoever shall be borne by the Contractor.
- b. The Contractor shall be liable to maintain the proper labour hut arrangement, toilets for staff and labour.
- c. The Contractor shall be liable to maintain the proper housekeeping at Site premises, on a daily basis.

Health and Safety

- a. Adequate sanitary facilities and other utilities requirements for all persons working at the Site in respect of the Project, shall be provided and maintained by the Contractor to the extent and in such manner and at such places as shall be acceptable to JIL, in compliance of the Applicable Laws and Applicable Permits.
- b. The Contractor shall be liable to ensure all safety arrangements (i.e., Fire, electricity, barricading of cutouts, Helmets, safety belts, safety shoes etc) till the completion of the Contract. The Contractor shall provide sufficient fire protection equipment of the type and numbers for the warehouses, office, temporary appropriate structures, labour and work areas, residential and other facilities, etc. Access to such fire protection

equipment shall be easy and always kept open. However, in case any liability arising due to any violation or imposition of any fine, penalty, costs on account of non-compliance and negligence on the part of Contractor shall be solely meted on Contractor and JIL shall not be held liable for the same.

Contractor's Personnel

- a. The Contractor shall deploy adequate numbers of qualified engineers for each tower and a Project Manager at Site for execution of the work under this Contract with prior approval of EIC with minimum experience of 5 to 7 years for engineers and 15 to 20 years for Project Manager.
- b. The contractor shall be liable to deploy Project Manager, Engineer, and adequate numbers of supervisory staff in order to execute the job effectively. The contractor shall employ competent fully licensed qualified, full-time engineer to direct the work in accordance with the drawings and specifications. The engineers shall be always available at Site to receive instructions from the EIC, in the day-to-day activities throughout the duration of contract. The engineer shall correlate the progress of the work in conjunction with all the relevant requirements.

In case of any non-compliance of any applicable law / statute/ rule/ regulations/promulgations/ ordinances/govt. orders etc. all liabilities/ actions /prosecutions shall solely be attributed upon the Contractor. The Contractor shall indemnify JIL/Management/Board/Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc. The same is also applicable in case of any accident, mishapening and untoward event occurred at the Project Site.

26 PLANT, MATERIALS AND WORKMANSHIP

The Works shall be carried out as per Contract specifications, latest CPWD Specifications, IS codes, standard engineering practices and directions of the project - in - charge. The Contractor warrants that the supply, Works and/or Plant and Equipment shall conform to the specifications and requirements as set out in the concerned Contract, be free from defects in engineering, design, execution, materials and workmanship, such defects occurring either directly or as a consequence of a decrease of performances as finally agreed by the Parties, and meet and satisfy all Applicable Laws and other compulsory legal requirements applicable, especially those relating to environment, health and safety. If JIL detects defaults or defects, JIL may reject the Works and/or Plant and Equipment in whole or in part. If rejection seems not to be justified or necessary, JIL may give the Contractor any comments that JIL deems appropriate in order to make the Works and/or Plant and Equipment comply with the quality as agreed by the Parties. The Contractor shall promptly remedy said defaults and defects and carry out any appropriate corrective action. Defective works or bad workmanship shall be redone / repaired by the Contractor to the satisfaction of the Engineer-in-charge and shall be carried out at the Contractor's cost.

All the materials required for completion of work as per BOQ are to be arranged by the Contractor from the designated vendors/manufacturers approved by JIL. Reconciliation of all basic rate materials shall be submitted by

the Contractor along- with monthly running account bills.

The Contractor shall clearly mention, while bidding, the make of material offered by him from the List of approved makes, however JIL reserves the right to choose any make of material.

Where manufacturers have furnished specific instructions relating to the materials used in this job, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases. Where manufacturer's names and/or catalogue numbers are given, this is an indication of the quality, standards and performance required. For items not covered under the 'List of Approved Makes', Contractor shall offer items of first-class quality, standards and performance and obtain the approval of EIC before procuring them. Where interfacing occurs, equipment shall be mutually compatible in all respects.

27 Inspection

Shop assembly of all component parts shall be done to ensure that all parts are properly fitted to minimize installation problems. JILs reserves the right to inspect any machinery, material and component (hereinafter collectively called "apparatus") finished or used by the Contractor under this Contract and may reject which is defective in workmanship or design or otherwise unsuitable for the use and purpose intended or which is not in accordance with the intent of this Contract. The Contractor shall on demand by JILs, remedy/replace at the Contractor's expenses any such defective or unsuitable apparatus. The Contractor shall inform JILs in advance when apparatus is ready for inspection in the Contractor's workshop and/or in his sub supplier's workshop. JILs Representative shall at all times have access to all parts of shops where apparatus is being manufactured and also shall be provided with all reasonable inspection facilities by the Contractor and his sub supplier. None of the apparatus to be furnished or used in connection with this contract will be supplied until shop inspection and performance testing, at the Contractor cost, satisfactory to the Engineer-in-charge has been made. Such shop inspection of the apparatus shall not however, relieve the Contractor from full responsibility for furnishing the apparatus confirming to the requirements of this Contract not prejudice any claim, right or privilege which JILs may have because of the supply of defective or unsatisfactory apparatus. Should JILs waive the right to inspect any apparatus, such waiver shall not relieve the Contractor from his obligation under this Contract.

28 Testing

JIL reserves the right to inspection and testing at manufacturer's works at all reasonable times during manufacture of items for this contract. Tests at the Site of completed works shall demonstrate, among others, the following:

- a) that the equipment installed complies with specifications in all respects and is of the correct rating for duty and site conditions.
- b) that all items operate efficiently and quietly to meet the specified requirements.

- c) that all circuits are correctly protected and that protective devices are properly coordinated.
- d) that all non-current carrying metal parts are properly and safely grounded in accordance with the specifications and codes of practice.

All Tests in relation to the Works and/or Plant and Equipment shall be performed by the Contractor. During the Tests, the Works and/or Plant and Equipment shall be operated under the Contractor's direction and supervision, in accordance with the requirements of the concerned Contract and the operation manuals and instructions of the Contractor. Consequently, the Contractor shall, at its own costs and under its sole responsibility, provide all necessary instruments and a sufficient number of its own skilled employees and/or engineers as deemed appropriate for the safe completion of the Tests as well as for the Tests' direction and supervision.

The Contractor shall make adequate records of test procedures and readings, Any Test which results are not in conformity with the parameters, requirements and performances agreed upon in any Contract shall be performed again under the Contractor's direction and supervision until those parameters, requirements and performances are duly fulfilled. JIL shall reasonably accept further repetitions of the same Tests, provided that such additional Tests shall be performed by the Contractor at its own costs and that the direct costs incurred by JIL in connection therewith shall be reimbursed by the Contractor. Such a test shall be conducted on all materials and plants and equipment and on completed work as called for by the EIC. If it is proved that the installation or part thereof is not satisfactorily carried out, then the Contractor shall be liable for the rectification and retesting of the same as called for by the EIC at the cost of the Contractor. The EIC's decision as to what constitutes a satisfactory test shall be final. The above general requirements as to testing shall be read in conjunction with any particular requirements specified elsewhere. All tests shall be carried out by a test house approved by the EIC. All adjustments, tunings, repairs, etc. shall be performed according to a program established under mutual agreement of both Parties.

The Contractor shall submit test certificates for all the major equipment. Type tests shall be carried out as per relevant standards issued by Bureau of Indian Standards. For other items, such test certificates shall be issued by Government recognized inspection office certifying that all equipment, materials, construction and functions are in compliance with the requirements of these specifications and accepted standards of BIS/International standards.

28

Rejection

If on test any portion of the substation, equipment or components are found to be defective or not fulfilling the intent or the meaning of the specifications, the same shall be replaced or repaired by the Contractor (at its own costs) to the entire satisfaction of the EICs. In case the Contractor fails to remove the defects, within a period considered reasonable, JIL reserves the right to take necessary remedial measures through other agencies and all expenses thus incurred would be recovered from the Contractor. JIL reserves the right to operate all the equipment and complete system whether or not the substation is taken over

after the initial test and commissioning. Any defects found during the initial or running tests shall be removed at a suitable time as decided upon by JIL and/or their EIC. In case any incident/ accident, mishappening and untoward event occurred happens due to default in machines or equipment, then all liabilities/ actions /prosecutions shall solely be attributed upon the Contractor. The Contractor shall indemnify JIL/Management/Board/Employees/Consultant from all punitive actions, civil liabilities and criminal actions/prosecution etc.

29 TIME OF COMPLETION

The date of start of the Works will be reckoned from 15 day of issuance of LOI (Letter of Intent) or the day of signing of Contract agreement whichever comes later, and the Works shall be completed within **12 Months** from the date of signing of Contract agreement.

30. GUARANTEE

The Contractor shall guarantee that all the material, machinery and components supplied, fabricated, designed and installed by him shall be free from defects of any kind including faulty design material and/or workmanship, that the system shall perform satisfactorily and the efficiency and functioning of the system and all the components thereof shall not be less than or inferior to the parameters laid down in the specifications and the Performance shall be safe, satisfactory and within the specified design limits. In case of any shortcoming, the Contractor shall replace the necessary components at no extra cost or alternately JIL shall be entitled to deduct a proportionate amount from payments due to the Contractor.

The period of the guarantee shall be (12) twelve months after the running test performance during which period any or all components found to be defective shall be replaced or repaired free of charge and any shortcomings found in the system functioning shall be promptly removed at no extra cost. The Contractor shall provide the necessary personnel and tools for fulfilling the above guarantee.

If the defects are not removed within three days of having notified, JIL may arrange to do so at the Contractor's risk and cost, without prejudice to any other rights and, in addition, a penalty of Rs. 10,000 (Rupees ten thousand only) per day shall be deducted from the Contractor's Retention Money or any other payment due to the Contractor from the number of days taken to remove the defect.

31. CONTRACT PRICE AND PAYMENT

31.1 The Contract Price

All payments to the Contractor under or pursuant to the Contract, will be subject to deduction of tax at source at the prescribed rates as per the Income Tax Act, 1961 read in conjunction with any/ all amendments/ clarifications as

applicable. Further it is also mandatory for the Contractors to submit their Bills in the printed letter head of the firm. The letter head must contain a PAN number, CGST/SGST/IGST registration number printed on it. The name and address of JIL should be clearly mentioned as: Jaypee Infratech Limited, Sector - 128, NOIDA (U.P.).

31.2 Advance Payment

The mobilization advance @ 5% of contract value against submission of bank guarantee at simple bearing interest @9% per annual in following manner.

- i. The first tranche of mobilization advances i.e., 2.5% of Contract Value as awarded will be released within 15(fifteen) days from signing of contract agreement. The amount of the aforesaid first tranche shall be released after verification of Performance Bank Guarantee submitted as per relevant clause.
- ii. The second tranche of Mobilization Advance i.e., 2.5% of Contract Value, as awarded, will be released on initial mobilization of manpower, submission of shop drawings, and on commencement of work.

The mobilization advance shall be recovered from the Contractor's progress bills through proportional deductions to complete the recovery of the advance by the time work equal to 80% of the Contract Value is completed subject to the Condition that no such recovery shall be commenced from Contractor's progress bills till work equal to 10% of the Contract Value is completed. In case the contractor is unable to furnish a proof of satisfactory utilization of the advance to the entire satisfaction of the EIC, at any stage when asked for by the EIC, the EIC shall be at liberty to recover the entire amount of advance any time thereafter in stages or in one go from the payments due to the Contractor under this Contract, or from payment due to the Contractor under any other Contract or under the law of the land.

The Bank Guarantee / Corporate Guarantee /Undated cheque (as the case may be) as furnished by the Contractor against Mobilization Advance shall be released after the entire advance is recovered from the Contractor.

32. ESCROW ACCOUNT

JIL is committed to complete the Project in accordance with the Programme, for which it is required that the funds released by JIL by way of Mobilization Advance, running account bills payments is utilized in the Project only. For this it is mandatory for the Contractor to open an Escrow account jointly with JIL. The Corporate Guarantee along with undated Cheque of the equivalent amount of the advance to be submitted by the Contractor before taking the advance. In addition, Contractor shall contribute at least 25% (twenty five percent) of the Mobilization Advance paid, in the escrow account as initial investment to complete the Project in the stipulated time period. The Contractor shall be allowed to withdraw up to 10% of the amount in the Escrow Account towards overheads & profit. The remaining amount in the Escrow account shall be returned to the Contractor after all amounts and dues are recovered by JIL from the Contractor, on completion of the Project and issue of the Final Acceptance Certificate.

33. PLANT AND MATERIALS INTENDED FOR THE WORKS

33.1 With respect to reconciliation of JIL supplied materials, the quantities of such materials

allowed towards consumption for the Works by the Contractor shall be the theoretical requirement plus permissible wastage, if any as specified in this contract. The theoretical requirement shall be determined by measurements made in accordance with the dimensions shown on the Drawings according to which the Works shall be executed. JIL supplied materials used due to any reason whatsoever for replacement and/or rectification work shall not be deemed to be theoretical requirement, and the costs in respect of these materials used for such works shall be borne by the Contractor.

33.2 JIL shall provide materials as per Annexure-1 for execution of items as specified in BOQ free of cost. The permissible limit of wastage & penal rate of recovery shall be as per Annexure-1. The requirement of materials for the work shall be projected by the Contractor to the EIC well in advance.

33.3 The Contractor shall give a reconciled statement of issue and consumption of materials supplied by JIL along with each RA Bill.

33.4 Cement shall be supplied by JIL free of cost to the contractor at one point at Site / or near cement go-down as per the availability of approach road. The cement shall be stored by the contractor in such suitable covered and lockable stores, well protected from climate and atmospheric effects. The cement go-down shall be constructed by the contractor as per the drawing in CPWD specifications at his own cost. The cement will remain under double lock, one from JIL and the other from Contractor. The cement in bags shall be stored in go-downs in easy countable position. Cement bags shall be used on a first in first out basis. Cement stored for beyond 90 days will be required to be tested at contractors' cost, before use in works.

33.5 For keeping a record of cement and steel received at Site and consumed in works, the contractor shall maintain properly bound register in the form approved by JIL, showing columns like quantity received and used in work and balance in hand etc. This register shall be signed daily by the contractor's representative and Engineer-in-charge. The register of cement & steel shall be kept at Site in the safe custody of JIL Engineer during progress of the work. This provision will not, however, absolve the contractor of the quality of the final product. In case cement or steel quantity consumed is lesser as compared to the theoretical requirement of the same as per CPWD/MORTH (as the case may be) specifications/norms, the work will be devalued and/ or a penal rate (i.e double the rate at which cement/ steel purchased last) recovery for lesser consumption of cement/steel shall be made in item rates of the work done subject to the condition that the tests results fall within the acceptable criteria as per CPWD/MORTH (as the case may be) specifications otherwise the work shall have to be dismantled and redone by the contractor at no extra cost. In the case of cement, if actual consumption is less than 98% of theoretical consumption, a recovery shall be made from the Contractor's bills at the penal rate for actual quantity which is lower than 98% of theoretical consumption.

33.6 Cement shall be supplied by JIL free of cost to the contractor at one point at Site

34 PAYMENTS:

a) Mobilization Advance:

5% of the Contract value shall be paid to the Contractor as Mobilization Advance as per the Clause no 31.2 of SCC.

b) Secured Advance against construction materials: -

Interest free Secured Advance 70% of the cost of purchase of materials (against submission of substantial documents such as invoices, materials test reports etc.) at site or 60% of item rates; as mentioned in BOQ, whichever is less, required for incorporation in the permanent works and brought to site duly certified by Engineer-in-Charge shall be paid to the Contractor for non-perishable items. The total amount under this Clause at any time shall not exceed 10% (ten percent) of the "Contract Value as Awarded". The amount of advance released shall be recovered from the contractor's bill pertaining to the corresponding items of BOQ involving the use of the materials for which the advance was made. If the Contractor does not consume in works the materials against which secured advance was sanctioned within a period of 3(three) months from date of payment of advance, EIC shall be at liberty to recover the entire amount of advance from the Contractor's Bills or otherwise any time thereafter in stages or in one go.

c) RA (Running Account) Bills:

Payment of RA Bills shall be made in accordance with the items rate specified in the BOQ. The Contractor shall submit Monthly Tax invoice along with all supporting documents and with all necessary attachments and information as prescribed by the EIC (Engineer in charge) of the JIL. The monthly tax invoice shall be based on joint measurement of work done at site. After certification of the bill by "EIC", the JIL shall pay the Contractor amount payable within 30 working days from the date of submission of bill after due checking of the same. However, any procedural delay in payment beyond 30 working days shall not entitle the Contractor to pay interest on delayed payment of the due amount.

d) Retention Money:

Retention money shall be deducted from the Contractor's bill @ 5 % of the value of work paid in the bill, subject to a maximum amount of 5 % of the Contract Value as awarded. The Retention Money shall be refunded to the Contractor after satisfactory completion of the Defect Liability Period or payment of the Final bill whichever is later.

Earnest Money of Rs. 6,50,000/- deposited along with tender shall be retained as a part of the above Retention Money and shall be adjusted in the retention amount of 1st RA Bill.

e) CGST/SGST/IGST as applicable shall be reimbursed on submission of challans showing the amount actually paid under statutory laws. The Contractor shall get the amount, to be deposited as CGST/SGST/IGST vetted by the officer of the JIL.

f) Deduction from the Contractor's bill shall be made on account of TDS (Income Tax) as per the applicable statutory laws, and account of any other dues recoverable from the Contractor.

g) The JIL may withhold or deduct from the payment of any amount otherwise payable to the Contractor under this Work Order and pay on the Contractor's behalf such taxes and other sums, if any as the case may be required to withhold or deduct as provided under applicable laws.

h) All interim payments to Contractor shall be treated as provisional payment and

shall be subject to final adjustment in the payment of the final Bill after completion of the work.

i) **Final Bill:**

The Contractor shall submit to the JIL a detailed account (The final Bill) of the total amount that the Contractor considers payable under the Contract/Work Order after completion of work and removal of all defects, to the satisfaction of the JIL. The Contractor shall also submit the reconciliation statement of FOC (free of cost) materials, and No dues certificate in the prescribed format along with the final Bill.

After issue of Final Acceptance Certificate, the FINAL BILL shall be paid within 60(sixty) working days of submission thereof after affecting all recoveries on account of advance payments, adjustments of the material issued by the JIL to the Contractor and any other charges dubitable to the Contractor.

The final bill shall be submitted by the Contractor within 15 (Fifteen) days from the date of completion of work as certified by the EIL. If Contractor fails to submit the final bill within 15 days from date of completion of work, the JIL has liberty to measure & settle the final bill at his own & Contractor is bound to accept the same.

35 DEFECT LIABILITY PERIOD:

The defect Liability Period shall mean a period of 12 (Twelve) months, reckoned from the certified date of completion of Work after taking over of the works by the JIL. The Contractor shall be responsible for making good, as soon as practicable, for any defect in or damage to any section or part of the Work which may appear or occur during the Defect Liability Period. On noticing the defect/ damage, the JIL shall forthwith inform the Contractor of the nature of the defect/ damage. The Contractor, at his own cost and risk, shall repair, rectify, and replace such defect /damage to the satisfaction of the JIL at his own cost and risk within reasonable time as accepted by the Engineer-in-charge, but before the expiry of the Defect Liability Period. In case of default, the JIL may employ any other person to rectify or make good such defect. All expenses consequent thereon or incidental thereto shall be borne by the Contractor and shall be recoverable from him by the JIL and shall be deducted from any money due or may become due to the Contractor. However, all liability arising from any untoward incident or imposition of any fine, penalty, costs during defect liability Period shall be solely meted on Contractor and JIL shall not be held liable for the same.

36. TAXES

Except CGST/SGST/IGST, all other taxes, duties levies, labour cess, royalties or any other statutory obligation shall be deemed to be included in the quoted rates of the contractor. No claim on this account will be entertained or allowed at any stage subsequently.

CGST/SGST/IGST, if applicable, shall be paid extra as per prevailing norms and certification by Engineering-In-Charge of JIL. The contractor shall pay Labour Cess @ 1% of the Contract Value directly to the concerned Department and documentary evidence for the same shall be submitted to us along with corresponding RA bills and

final bill.

Taxes shall be deducted as applicable at sources in accordance with the statutory requirement from all payments including advances.

It is mandatory for the contractor to get himself registered with the concerned Authorities and pay all taxes as applicable.

Further, it is also mandatory for the Contractors to submit their Tax invoice in the Printed letter head of their firm. The letter head must contain a PAN and GST number printed on it. The name and address of JIL should be clearly mentioned as: Jaypee Infratech Limited, Sector 128, Noida (UP)

37. ALTERATIONS. ADDITIONS AND OMISSIONS

37.1 Variations

The Engineer-in-Charge shall have powers to make any variation of the form, quality or quantity of the Work or any part thereof that may in his opinion be necessary and for that purpose, or if for any other reasons it shall in his opinion be desirable, he shall have power to order the Contractor to do and the Contractor shall do any (one or more) of the following: -

Increase or decrease to any extent the quantity of any item of work included in the Contract.

(b) Omit or substitute any such Work.

(c) Change the character or quality or kind of any such Work.

(d) Change the levels, lines position and dimensions of any part of the Work.

(e) Execute additional Work of any kind necessary for the Completion of the Work and no such variations shall in any way vitiate or invalidate the Contract, but the value, if any of all such variations shall be taken into account in ascertaining the Contract Value.

(f) Change any specified sequence, method, or timing of construction of any part of the Work.

(g) No such variation shall be made by the Contractor without order in writing of the Engineer-in-Charge but no order in writing shall be required for increase or decrease in the quantity of work where such increase or decrease is not the result of an order given under this clause, but is the result of the quantities, computed from the approved drawings, exceeding or being less than those stated in the Bill of Quantities.

38. EXTRA ITEMS

Extra items of Work shall not in any way vitiate the Contract. The Contractor shall be bound to execute extra items of Work as directed by the Engineer-in-Charge. The rate(s) of any additional, altered or substituted item(s) shall be determined by JIL as follows: -

38.1 If the rate of any additional, altered or substituted item(s) of Work is not specified in Bill of Quantities, the rate for such item(s) shall be derived from the rate of nearest similar item specified therein.

38.2 If it is not feasible to derive the rate of such extra item(s) from similar items in Bill of Quantities as per provisions of Sub clause (22.1) herein above, the Contractor shall submit the analysis of rates for extra item with supporting documents, the coefficient of materials in such analysis of rates shall be as per manufacturers specifications or as mentioned in the CPWD analysis of rates whichever is applicable. The provision for the Contractor's profit and overheads (including all taxes, labour cess & duties except GST) shall be limited to 15% of the prime cost. The prime cost shall include all expenditure for materials, labour, and supplies furnished by the Contractor and all expenditure for use of plant & equipment where required but will in no case include any allowance for office expense, general superintendence, or other general expenses. GST shall be paid extra as applicable. These rates shall be checked and decided by the Engineer-in-Charge in consultation with the Contractor and payment for such extra items shall be made at rates as decided by the Engineer-in-Charge.

38.3 Under no circumstances the Contractor shall at any stage suspend the Work on account of non-settlement of rates of such item(s)

38.4 Increase or decrease in specified basic rate of material, as mentioned in BOQ for incorporation in a quoted rate of an item of work shall be accounted for in the payment of the item of the related work only to the extent of the increase/decrease in the basic rate without any other additional cost.

39 INSPECTIONS OF WORK

39.1 The Engineer-in-Charge or any person authorized by him shall, always, have access to the Work and to all Workshops and places where articles or machinery are being obtained for the Work and the Contractor shall provide every assistance in obtaining the right to such access.

39.2 The Engineer-in-Charge or his representative shall have powers at any time to inspect and examine any part of the Work and the Contractor shall give such facilities as may be required for such inspection and examination.

39.3 No Work shall be covered up or put out of view without the approval of the Engineer-in-Charge or the Engineer-in-Charge's representative and the Contractor shall afford full opportunity for the Engineer-in-Charge or the Engineer-in-Charge's representative to examine and measure any Work which is about to be covered up or put out of view and to examine foundations before permanent Work is placed thereupon. The Contractor shall give due notice to the Engineer-in-Charge or the Engineer-in-Charge's representative whenever any such Work or foundations is or are ready or about to be ready for examination and the Engineer-in-Charge or the Engineer-in-Charge's representative shall, without unreasonable delay, unless he considers it unnecessary and advises the Contractor accordingly, attend for the purpose of examining and measuring such Work or of examining such foundations.

39.4 The Contractor shall uncover any part or parts of the Work covered by him without providing full opportunity to the Engineer-in-Charge or his representative to

examine and measure the same, or make openings in or through the same as the Engineer-in-Charge or Engineer-in-Charge's representative may, from time to time, direct and shall, at his own cost, reinstate and make good such part or parts to the satisfaction of the Engineer-in-Charge or the Engineer-in-Charge's representative.

39.5 The Engineer-in-Charge shall, during the progress of the Work, have power to order in writing from time to time:

(a) The removal from the site, within such time as may be specified in the Order, of any materials which, in the opinion of the Engineer-in-Charge, are not in accordance with the Contract.

(b) The substitution of proper and suitable materials and,

(c) The removal and proper re-execution, notwithstanding any previous test thereof or interim payment thereof, of any Work which in respect of materials or workmanship is not, in the opinion of the Engineer-in-Charge, in accordance with the Contract.

39.6 In case of default on the part of the Contractor in carrying out such order, as specified in the preceding sub clause, JIL shall be entitled to employ and pay other person(s) to carry out the same and all expenses consequent thereon or incidental thereto shall be recoverable from the Contractor by JIL or may be deducted by JIL from any amount due or which may become due to the Contractor. However, all liability arising from any untoward incident or imposition of any fine, penalty, costs due to such work shall be solely meted on Contractor and JIL shall not be held liable for the same.

40. DECISION OF ENGINEER-IN-CHARGE IS FINAL

Except where otherwise specified in the Contract, the decision of the Engineer-in-Charge as to the quality of workmanship or materials used on the Work, or as to any other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the Contract documents, designs, drawings, specifications, estimates, instructions, or conditions, or otherwise concerning the Work or the execution or failure to execute the same whether arising during the progress of the Work or after the completion or abandonment of the Contract by the Contractor shall be final conclusive and binding on the Contractor.

41. INSURANCE

(a) The Contractor shall, at his own cost, take all necessary insurances to cover all the plants, machinery, equipment, and workforce before deploying them at the site of work and also for third-party damages to property and to any person.

The Contractor shall maintain the insurance cover till all his obligations under the Contract is over.

(b) Contractor's All Risk Policy (CAR): - The Contractor shall, at his own cost, take Contractor's All Risk Policy (CAR Policy). The insurance cover shall be for the amount

equal to the sum of Contract Value and Cost of Materials to be supplied by the JIL free at site for use in said work and shall cover the total period of the contract i.e completion period plus 12 months of Defect Liability Period. The CAR insurance Policy must include the JIL as a co-insured. The insurance cover shall be in the name of the Employer.

(c) The Contractor shall take appropriate Workmen's Compensation Insurance Policies to cover Contractor's Liability under various relevant Acts in accordance with Law in force from time to time.

Failure of the Contractor to maintain adequate insurance coverage shall not relieve him of any of his responsibilities accruing to him under the contract or under the Law.

Insurance against Accident etc. to workmen: The Contractor shall insure against such liability with an insurer approved by JIL, which approval shall not be unreasonably withheld, and shall continue such insurance during the whole of the time that any persons are employed by him or by his Subcontractor on the Work in such manner that JIL is indemnified under the policy.

Remedy on Contractor's Failure on Insurance: If at any time, it comes to the notice of the Engineer-in-Charge that the Contractor has failed to affect and keep in force the insurance which he is required to affect under the terms of the Contract or under the law, then JIL may affect and keep in force any such insurance and pay such premium or premia as may be necessary for that purpose and from time to time deduct the amount so paid by JIL as aforesaid from any amount due or which may become due to the Contractor or recover the same as a debt due from the Contractor.

42. LIQUIDATED DAMAGES

42.1 If the Contractor fails to achieve completion of work within the specified time of Completion or such extended period of completion, for which time extension is granted by JIL, then the Contractor shall pay to JIL as Liquidated Damages, and not as penalty, for every week of delay in completion of the Work, an amount equal to 0.5% (half percent) of the contract Value as Awarded. The total amount of liquidated damages under this Contract shall be limited to 10% (Ten Percent) of the Contract Value as awarded.

42.2 JIL may recover the Liquidated Damages from the Contractor from any amounts due or which may subsequently become due to the Contractor under the Contract.

43. BASE RATE DIFFERENCE

Increase or decrease in specified base rate of materials as mentioned in BOQ for incorporation in a quoted rate of an item of work with wastage shall be accounted for in the payment of the item of the related work only to the extent of the increase/decrease in the base rate (excluding GST but including all other taxes duties, loading, unloading, transit insurance freight etc.) without any other additional cost. To ascertain the current base rates of the items procured, proper GST invoices shall be

submitted by the contractor. Wherever vendors and rates negotiated and finalized by JIL for base rate items covered in BOQ, such items shall be purchased by the contractor from above vendors only at finalized rates unless otherwise approved by JIL.

44. DRILLING/CUTTING

The Contractor shall have to do all drilling and cutting of walls or other elements of the building for the complete and proper installation of the conduits, and other equipment's etc. by using electrically operated tools. Manual drilling or chiseling shall be permitted on special request only. Beams, girders, and other principal structural members shall not be cut or drilled unless prior permission has been granted by the EIC. If such drilling and cutting are made on finished surfaces, any marring of the surfaces shall be made good by repair at the contractor's expense.

45. PLASTERING OF WALL CHASES/OPENING ETC.,

All chases and openings made by the Contractor for his conduits, boxes etc., shall be filled/covered over with cement plaster in a reasonable manner, to be finished by the Civil Contractor. Before rough plastering on the conduit surface the concealed conduits shall be secured to the wall by using saddles and nails.

SECTION -IV -
TECHNICAL
SPECIFICATIONS

ELECTRICAL WORKS

1. GENERAL

1.1 SCOPE OF WORKS

INTERNAL ELECTRICAL WORKS

The scope of work under the sub head 'Internal Electrical Works' includes the following:

- (a) Installation of Internal Lighting & Power Supply System comprising of conduit work on surface or in recess, wiring, wiring accessories, distribution boards, switch boards etc.
- (b) Installation of light fittings and other electrical appliances, as specified
- (c) Installation of conduits, junction boxes, tag blocks, telephone outlets, TV outlets,
- (d) wiring and other wiring accessories for Telephone System and TV System.

The Tenderer shall include for the supply (unless specified otherwise), delivery, installation, connection, commissioning and testing of all materials and equipment to provide a complete internal electrical system as described here

EXTERNAL ELECTRICAL WORKS

The scope of work includes the following:

- (a) Supply and laying of H.T. & L.T. cables on cable tray ground/trench/open duct.
- (b) Installation of Street Lights pole & Fixture.

The Tenderer shall include for the supply (unless specified otherwise), delivery, installation, connection, commissioning and testing of all materials and equipment to provide a complete internal electrical system as described hereunder.

1.2 STANDARDS AND CODES OF PRACTICE

The electrical Installation work shall be carried out in accordance with Indian Standard Code of Practice. It shall also be in conformity with the current Indian Electricity rules and regulations and requirements of the Local Electricity Supply Authority and Fire Insurance regulations so far as these become applicable to the installation. Electrical work in general shall be carried out as per following CPWD Specifications.

- (a) General Specifications for Electrical Works (Part-I) Internal Work - 2013
- (b) General Specifications for Electrical Works (Part-II) External Work - 1995
- (c) General Specifications for Electrical Works Part VIII Gas Based Fire Extinguishing System - 2013
- (d) General Specifications for Heating, Ventilation & Air-Conditioning (HVAC) - 2004

The work shall be carried out as per the enclosed Specifications of Work and the construction drawings to be issued from time to time. These specifications shall be read in conjunction with

relevant Codes of Practice and Standards as issued by BIS (all with the latest amendments) and with 16th edition of wiring regulation of I.E.E.

Wherever these specifications calls for a higher standard of material and or workmanship than those required by any of the above mentions regulations and specification then the specification here under shall take.

1.3 I.E. RULES COMPLIANCE

The installations and equipment supplied shall comply in all respects with the Indian Electricity Act and the Indian Electricity Rules (1956) amended as on date.

1.4 ELECTRICAL DRAWINGS

The electrical drawings issued from time to time to the Contractor are diagrammatic but shall be followed as closely as actual construction and work will permit. Any deviation from the drawings required to conform to the building construction shall be made by the Contractor at his own expenses. The architectural drawings shall take precedence over the services drawings as far as the Civil and other trade works are concerned.

DISCREPANCY IN DRAWINGS

Should there be any discrepancy due to in-complete description, ambiguity or omission in the drawings and other documents relating to this Contract found by the Contractor either before starting the work or during execution or after completion, the same shall be immediately brought to the attention of the Engineer-in-Charge and his decision would be final and binding on the Contractor.

1.5 INSTRUMENTS FOR MEASUREMENT AND TESTING

The Contractor shall provide, free of cost, all equipments, instruments, labour and all other allied assistance required by the Engineer-in-Charge for measurement and testing of the works.

1.6 CO-ORDINATION WITH OTHER TRADES

The Contractor shall be responsible for coordinating this work with works of other trades sufficiently ahead of time to avoid unnecessary hold ups. Hangers, sleeves, recesses etc. shall be left in time as the work proceeds.

1.7 PROTECTION

All work shall be adequately protected, to the satisfaction of the Engineer-in-Charge, so that the whole work is free from the damage throughout the period of construction upto the time of handing over.

Special care must be taken to prevent damage and scratching of all fittings and fixtures. Tool marks on exposed fixtures shall not be accepted. Protective paper on fixtures shall be removed with hot water only at the final completion of the work.

Before handing over the work, the Contractor shall clean all elements of the complete installation, remove plasters, splashes, stickers, rust stains and all other foreign matter and leave every part in acceptable condition and ready for use to the satisfaction of the Engineer-in-Charge.

1.8 SAFETY PRECAUTIONS

The Contractor shall take all reasonable safety precautions during construction and testing of the works. Particular attention shall be paid to the following:

- a) Precautions to the Engineer's approval shall be taken to prevent any conductor or apparatus becoming accidentally or inadvertently charged when persons are working thereon.
- b) Prior to the electrical installation (or part thereof being contractor shall ensure that all main switches on equipment in his supply are padlocked off, so that un-commissioned or incomplete circuits cannot be used without the Engineer's consent.

During testing and commissioning or at any other time, when live conductors may be temporarily exposed (e.g. control panel doors open) the Contractor shall provide danger boards and warning signs to the approval of the Engineer to prevent any possibility of accidental electric shock.

1.9 'AS-FITTED' DRAWINGS

The Contractor shall submit, after the completion of the work, one set of originals and two sets of prints of the 'As-Fitted' drawings, giving the following information.

- (a) Position of all light, fan and other outlets, MDBs & SDBs.
- (b) Conduit layout.
- (c) Single line diagram for internal works.
- (d) Lighting schemes, cable route etc.

1.10 OPERATION & MAINTENANCE MANUALS

The Contractor shall hand over to the Owner all operation and maintenance manuals of the plant and equipment supplied and installed by him. Only manufactures catalogues wiring diagrams and installation drawings, relevant to particular items of equipment concerned shall be submitted. General catalogues will not be accepted.

1.11 INSTALLATION

The foundations prepared as per the manufacturers drawings shall be levelled, checked for accuracy and thereafter the Switchgear Panels installed. All busbar connections shall be checked with a feeler gauge after installation. The cable end boxes shall be sealed to prevent the entry of moisture. The main earth bars shall be connected to the sub-station earths.

A 12mm thick rubber matting of approved make shall be provided in front of the Switchgear Panels and along its entire length. The width of the rubber matting shall be 1000mm. The rubber mat shall withstand 12kV for 1 minute and leakage current shall not exceed 160-mA/sq. meter. After installation of the Switchgear Panels, these shall be tested prior to commissioning.

1.12 TESTING AND COMMISSIONING

Prior to commissioning the following tests shall be carried out:

- 1) Mechanical operation of the Circuit Breakers.
- 2) Insulation resistance test shall be carried out between phases and phases and earth.
- 3) Accuracy and operation of all control and protection relays and tripping sequences shall be checked.

2. MEDIUM VOLTAGE AIR CIRCUIT BREAKERS

2.1 Technical parameters

The Circuit Breaker shall be of air break type of robust and compact design, suitable for indoor mounting and shall comply with the requirement of IS: 13947 : 1993. Symmetrical rupturing capacity shall be as per schedule of quantities.

2.2 Constructional features

The Circuit Breaker shall be flush front, metal clad, horizontal draw-out pattern, three/four pole as required and fully interlocked. Each Circuit Breaker shall be housed in a separate compartment enclosed on all sides.

The Circuit Breaker cradle shall be designed and constructed to permit smooth withdrawal and insertion. The movement shall be free of jerks, easy to operate and positive.

All current carrying parts in the breaker shall be silver plated and suitable arcing contacts shall be provided to protect the main contacts which shall be separate from the main contacts and easily replaceable. In addition, Arc chutes shall be provided for each pole, and these shall be suitable for being lifted out for the inspection of the main and the arcing contacts.

Self-aligning cluster type isolating contacts shall be provided for the Circuit Breaker, with automatically operated shutters to screen live cluster contacts when the Breaker is withdrawn from the cubicle. Sliding connections including those for the auxiliary contacts and control wiring shall also be of the self-aligning type. The fixed portion of the sliding connections shall have easy access for maintenance purposes.

The automatic shutters shall be earthed with no. 8 SWG GI wire connected to the earth bus. The cubicle for housing the Breaker shall be free standing dead front pattern, fabricated from the best quality sheet steel.

2.3 Operating Mechanism

The Circuit Breaker shall be trip free with independent manual spring operated and/or motor wound spring operated mechanism as specified and with mechanical ON/OFF indication. The

operating mechanism shall be such that the circuit breaker is at all times free to open immediately the trip coil is energised.

The operating handle and mechanical trip push button shall be at the front of and integral with the Circuit Breaker.

The Circuit Breaker shall have the following four distinct and separate positions which shall be indicated on the face of the panel.

"Service" -- Both main and secondary isolating contacts closed

"Test" -- Main isolating contacts open and secondary isolating contacts closed "Isolated" -- Both main and secondary isolating contacts open

"Maintenance" -- Circuit Breaker fully outside the panel ready for maintenance It shall be possible to close the breaker in any of the positions.

2.4 Circuit breaker interlocking

Sequence type strain free interlocks shall be provided to ensure the following:

- a) It shall not be possible for the Breaker to be withdrawn from the cubicle when in the "ON" position. To achieve this, suitable mechanism shall be provided to lock the Breaker in the tripped position before the Breaker is isolated.
- b) It shall not be possible for the Breaker to be switched "ON" until it is either in the fully inserted position or, for testing purposes, it is in the fully isolated position.
- c) It shall not be possible for the Circuit Breaker to be plugged in unless it is in the OFF position.
- d) A safety catch shall be provided to ensure that the movement of the Breaker, as it is withdrawn, is checked before it is completely out of the cubicle, thus preventing its accidental fall due to its weight.

2.5 Anti-pumping

Mechanical and electrical anti-pumping devices shall be incorporated in the ACB's as required.

2.6 Circuit breaker auxiliary contacts

The Circuit Breaker shall have minimum 6 N.O. and 6 N.C. auxiliary contacts rated at 16 A 415 volts 50 Hz. These contacts shall be approachable from the front. They shall close before the main contacts when the Circuit Breaker is plugged in and vice versa when the Circuit Breaker is Drawn Out of the cubicle.

2.7 Type test certificates

The Contractor shall submit type test certificates from a recognised test house for the Circuit Breakers offered.

2.8 Metering

The metering required to be provided for each Circuit Breaker shall be as per the Schedule of Quantities. Such metering shall not be provided on the front panel of the Circuit Breaker compartment. A separate compartment shall be provided for the metering and Protective relays as required. Instrument testing plugs shall be provided for testing the kWh meters.

Square pattern flush mounting meters complying with the requirements of the relevant Indian Standards shall only be used.

Selector switches of the three way and OFF pattern complying with the relevant Indian Standards shall be used.

2.9 Indicating lamps

Neon type indicating lamps shall be provided for indication of phases and Breaker position as required in the Schedule of Quantities.

2.10 Control wiring

All wiring for relays and meters shall be of copper conductor PVC insulated and shall be colour coded and labelled with appropriate plastic ferrules for identification. The minimum size of control wires to be used shall be 2.5 sq mm. All control circuits shall be provided with protective H.R.C. fuses. Instrument testing plugs shall be provided for testing the meters.

2.11 Earthing

The frame of the Circuit Breaker shall be positively earthed with GI earthing conductor when the Circuit Breaker is racked into the cubicle.

3. SWITCH FUSE UNITS

Switch fuse units, incorporated in switchboards wherever required shall conform in all respects to IS 13947 : 1993. Switch fuse units shall be suitable for 415 Volts 3 Phase 50 HZ AC supply.

The Switch fuse unit housing shall be of robust construction designed to withstand arduous conditions and shall be constructed from 2 mm thick CRCA sheet steel. Sheet steel used shall be given rigorous rust proofing treatment before fabrication and painting Units shall have double break per phase in order to isolate fuse links when the switch is in OFF position.

Operating mechanism of units shall be crisp and positive in action with quick- make and quick-break silver plated contacts. Operating handle shall be suitable for rotary operation unless otherwise specified. Position of handle such as ON and OFF shall be clearly indicated.

All live parts inside the switch fuse units shall be shrouded to prevent any accidental contact. All the terminals shall be liberally designed. All units shall be provided with integral Grouping type cable sockets.

All switch units shall be provided with suitable interlocks such that the door of the switchboard panel shall not open unless the switch is in OFF position. Provision for padlocking the switch in OFF position shall also be provided.

Routine and type tests as per IS 13947: 1993 shall be conducted at works and test certificates furnished.

4. MOULDED CASE CIRCUIT BREAKERS

Moulded case circuit breakers (MCCB) incorporated in switchboards wherever required, shall conform to IS 13947 : 1993 in all respects. MCCBs shall be suitable either for single phase 240 Volts or 3 Phase 415 Volts AC 50 HZ supply.

MCCB cover and case shall be made of high strength heat resisting and flame retardant thermosetting insulating material. Operating handle shall be quick make/break, trip - free type. Operating handle shall have suitable ON, OFF and TRIPPED indicators. Three phase MCCBs shall have a common handle for simultaneous operation and tripping of all the three phases. Suitable arc extinguishing device shall be provided for each contact. Tripping unit shall be of thermal/magnetic type provided on each pole and connected by a common trip bar such that tripping of any one pole causes three poles to open simultaneously. Thermal/magnetic tripping device shall have IDMT characteristics for sustained overloads and short circuits.

Contact trips shall be made of suitable arc resistant sintered alloy. Terminals shall be of liberal design with adequate clearances. MCCBs shall be provided with the accessories, as specified in the Schedule of quantities:

MCCBs shall be provided with following interlocking devices with the compartment door.

- a) Door interlock to prevent door being opened when the breaker is in ON position
- b) Interlock to prevent the Breaker being switched ON with the door open MCCBs shall have rupturing capacity as specified in drawings/schedule of quantities.

5. POWER FACTOR CORRECTION CAPACITORS

Power factor correction capacitors shall conform to IS 2834 in all respects. Capacitors shall be based on two layer dielectric film/paper/foil design. Capacitors shall be suitable for 3 phase 415 volts 50 HZ supply and shall be available in single and three phase units of 5,10,15,20,25 and 50 kVAR sizes. Capacitor shall be usable for indoor use, permissible overloads being as below:

- a. Voltage overloads shall be 10% for continuous operation and 15% for 6 hrs in a 24 hrs cycle
- b. Current overloads shall be 15 % for continuous operations and 50% for 6 hrs in a 24 hrs cycle
- c. Overload of 30% continuously and 45% for 6 hrs in a 24 hrs cycle
- d. Capacitors shall be hermetically sealed in sturdy corrosion proof sheet steel containers and impregnated with non-inflammable synthetic liquid. Every

element of each capacitor unit shall be provided with its own built in silvered fuse. Capacitors shall have suitable discharge device to reduce the residual voltage from crest value of the rated voltage to 50 volts or less within one minute after capacitor is disconnected from the source of supply. The loss factor of capacitor shall not exceed 0.005 for capacitors with synthetic impregnates. The capacitors shall withstand power frequency test voltage of 2500 volts AC for one minute. Insulation resistance between capacitors terminals and containers when a test voltage of 500 volts DC is applied shall not be less than 50 meg.ohms.

6. SWITCH BOARD CONSTRUCTION

6.1 General

All medium voltage switchboards shall be suitable for operation at three phase/three phase 4 wire, 415 volt, 50 Hz, neutral grounded at transformer system with a symmetrical short circuit level as per schedule of quantities.

The Switch Boards shall comply with the latest edition with upto date amendments of relevant Indian Standards and Indian Electricity Rules and Regulations.

6.2 Switch board configuration

The Switch Board shall be configured with Air Circuit Breakers, MCCB's, Switch Fuse units and other equipment as called for in the Schedule of Quantities and on the drawings.

The MCCB's and Switch Fuse units shall be arranged in multi-tier formation whereas the Air Circuit Breakers shall be arranged in Single tier formation only to facilitate operation and maintenance.

6.3 Constructional features

The Switch Boards shall be metal enclosed, sheet steel cubicle pattern, single front, extensible, dead front, floor mounting type and suitable for indoor mounting.

The Switch Boards shall be totally enclosed, completely dust and vermin proof. Synthetic rubber gaskets between all adjacent units and beneath all covers shall be provided to render the joints dust and vermin proof to provide a degree of ingress protection. All doors and covers shall also be fully gasketed with synthetic rubber and shall be lockable.

The Switch Board shall be fabricated with CRCA Sheet Steel of thickness not less than 2.0 mm and shall be folded and braced as necessary to provide a rigid support for all components. The doors and covers shall be constructed from CRCA sheet steel of thickness not less than 1.6 mm. Joints of any kind in sheet metal shall be seam welded and all welding slag ground off and welding pits wiped smooth with plumber metal.

All panels and covers shall be properly fitted with the square frame. The holes in the panel shall be correctly positioned.

Fixing screws shall enter holes tapped into an adequate thickness of metal or provided with hank nuts. Self-threading screws shall not be used in the construction of the Switch Boards.

6.4 Switchboard dimensional limitations

A base channel 100mm x 6 mm thick shall be provided at the bottom for main panels and 75/50mm for small panels and per the approved GA drawings. A minimum of 300 mm blank space between the floor of switch board and bottom most unit shall be provided for Main LT panels. For small panels its shall be 75 to 100mm depending upon the switchboard's heights. The overall height of the Switch Board shall be limited to 2400 mm. The height of the operating handle, push buttons etc shall be restricted between 300 mm and 1900 mm. from finished floor level.

6.5 Switch board compartmentalisation

The Switch Board shall be divided into distinct separate compartments comprising A completely enclosed ventilated dust and vermin proof bus bar compartment for the horizontal and vertical busbars. Each circuit breaker, switch fuse units and MCCB shall be housed in separate compartments enclosed on all sides. Sheet steel hinged lockable doors for each separate compartment shall be provided and duly interlocked with the breaker/switch fuse unit in "on" and "off" position. For all Circuit Breakers separate and adequate compartments shall be provided for accommodating instruments, indicating lamps, control contactors and control fuses etc. These shall be accessible for testing and maintenance without any danger of accidental contact with live parts of the circuit breaker, busbars and connections. A horizontal wire way with screwed cover shall be provided at the top to take interconnecting control wiring between vertical sections. Separate cable compartments running the height of the Switch Board in the case of front access Boards shall be provided for incoming and outgoing cables. Cable compartments shall be of adequate size for easy termination of all incoming and outgoing cables entering from bottom or top. Adequate and proper support shall be provided in cable compartments to support cables. All identical feeder compartments shall be inter-changeable.

6.6 Switch board bus bars

The Bus Bar and interconnections shall be of electrolytic Aluminium and of rectangular cross sections suitable for full load current for phase bus bars and half rated current for neutral bus bar. The maximum current density for Aluminium shall be 1 amp per Sq. mm. and suitable to withstand the stresses of a 50/35 KA as per BOQ sustained symmetrical fault level at 415 volts for 1 second or as per schedule of quantities. The momentary dynamic withstand level shall be based on this.

The bus bars shall be insulated with heat shrinkable PVC Sleeves. Accessible bus bar joints shall be shrouded in an approved manner. Minimum clearances between phase to phase and between phases and neutral (including protruding nuts and bolts if any) shall be 19 mm. minimum clearance between phases and earth (including protruding nuts and bolts if any) shall be 25 mm.

The bus bars shall be extensible on either side of the Switch Board.

The bus bars shall be supported on non-breakable, non-hygroscopic insulated supports at regular intervals, to withstand the forces arising from a symmetrical fault level at 415 volts for 1 second. All bus bars shall be colour coded.

All bus bar connections in Switch Boards shall be bolted with bolts and nuts. Additional cross section of bus bars shall be provided wherever holes are drilled in the bus bars. No insulation tape shall be used in the busbars / interconnections.

6.7 Switch board interconnections

All connections between the bus bars/Breakers/cable terminations shall be through solid copper strips of adequate size to carry full rated current and PVC/fibre glass insulated. For unit ratings upto 63A PVC insulated copper conductor wires of adequate size to carry full load current shall be used. The terminations of all such interconnections shall be crimped.

6.8 Draw out features

Air Circuit Breakers shall be provided in fully draw out cubicles. These cubicles shall be such that draw out is possible without disconnection of the wires and cables. The power and control circuits shall have self-aligning and self-isolating contacts. The fixed and moving contacts shall be easily accessible for operation and maintenance. Mechanical interlocks shall be provided on the draw out cubicles to ensure safety and compliance to relevant Standards. The MCCB's/SFU's shall be provided in fixed type cubicles.

6.9 Instrument accommodation

Instruments and indicating lamps shall not be mounted on the Circuit Breaker Compartment door for which a separate and adequate compartment shall be provided and the instrumentation shall be accessible for testing and maintenance without danger of accidental contact with live parts of the Switch Board. For MCCB's/SFU's instruments and indicating lamps can be provided on the compartment doors. The current transformers for metering and for protection shall be mounted on the solid copper/aluminium busbars with proper supports.

6.10 Wiring

All wiring for relays and meters shall be with PVC insulated copper conductor wires. The wiring shall be coded and labelled with approved ferrules for identification. The minimum size of copper conductor control wires shall be 2.5 sq. mm.

6.11 Cable terminations

Knockout holes of appropriate size and number shall be provided in the Switch Board in conformity with the location of incoming and outgoing conduits/cables. The cable terminations of the Circuit Breakers shall be brought out to terminal cable sockets suitably located at the rear of the panel.

The cable terminations for the MCCB's shall be brought out to the rear in the case of rear access switchboards or in the cable compartment in the case of front access Switch Boards. The Switch Boards shall be complete with tinned brass cable sockets, tinned brass compression glands,

gland plates, supporting clamps and brackets etc for termination of 1100 volt grade aluminium conductor PVC/PVCA cables.

6.12 Space heaters

The Switch Board shall have in each panel thermostatically controlled space heaters with a controlling 15 amp 230 volt switch socket outlet to eliminate condensation. For main LT panel where there are ACB and other equipment needed to be heated up during chilled winter days.

6.13 Earthing

A main earth bar of G.I. as required shall be provided throughout the full length of the Switch Board with a provision to make connections to the sub-station earth's on both sides.

6.14 Sheet steel treatment and painting

Sheet Steel materials used in the construction of these units should have undergone a rigorous rust proofing process comprising of alkaline degreasing, descaling in dilute sulfuric acid and a recognised phosphating process. The steel work shall then receive two coats of oxide filler primer before final painting. Castings shall be scrupulously cleaned and fettled before receiving a similar oxide primer coat. All sheet steel shall after metal treatment be powder painted with two coats of shade 692 to IS 5 on the outside and white on the inside. Each coat of paint shall be properly stoved and the paint thickness shall not be less than 60 microns.

6.15 NAME PLATE AND LABELS.

Suitable engraved white on black name plates and identification labels of metal for all Switch Boards and Circuits shall be provided. These shall indicate the feeder number and feeder designation.

6.16 TESTING AND COMMISSIONING

Copies of type tests and routine test as per relevant specification, carried out at manufacturer's work shall be submitted to the client as required. Wiring and connections including earthing shall be checked for continuity and tightness. Insulation shall be measured with a 500 V megger and insulation resistance shall not be less than 100 Mega ohms Tests shall be performed in presence of authorised representative of the Client/ Engineer-in- Charge for which the contractor shall give due prior notice.

6.17 MINIMUM CLEARANCES

Apparatus forming part of the power control centres shall have the following minimum clearances:

- | | | | |
|-----|----------------------------|---|-------|
| (a) | Between phases | - | 25 mm |
| (b) | Between phases and neutral | - | 25 mm |
| (c) | Between phases and earth | - | 25 mm |
| (d) | Between neutral and earth | - | 19 mm |

7. RISING MAIN BUSDUCT

Rising Main system shall be complete assembly consisting of Bus Duct, end feed units, end covers, fire barrier, expansion joints, thrust pads and mounting brackets etc. Rising Main system shall be air insulated compact type compact design. Rising Main shall be suitable for indoor / outdoor application. Rising Main shall be of rating as specified in Schedule of Rates.

7.1 RISING MAINS

The rising mains shall be supplied in convenient sections which can be connected to form a vertical straight run and each section should be provided with a number of wall straps or floor mounting arrangement as per site requirement, for fixing the rising mains. It should be provided with front and rear CRCA sheet steel covers of 1.5mm so that it forms a totally metal clad enclosed construction. The side channels of the rising mains shall be of 2mm CRCA sheet steel.

The CRCA sheet shall be given rigorous rust-proofing process which should comprise of alkaline degreasing, descaling in diluted sulphuric acid and a recognized phosphating process, given two coats of oxide primer before two coats of (IS 631) painting or powder coating as approved. A built in fire proof barrier shall be provided, wherever the rising mains passes through a floor and shall be marked on rising mains. These shall be with supports made of fire-resistant material and danger plates at a suitable interval as approved by Engineer in charge.

- | | | | |
|-----|----------------------------|---|--|
| (a) | Rating | : | 415V, 3phase, 4 wire system, 50HZ
Insulation voltage is 660V. |
| (b) | Nominal current Rating | : | As per requirement |
| (c) | Ambient temperature rating | : | 45°C.
(No bus bar deration upto 45°C Ambient temperature) |
| (d) | Short circuit rating | : | 50 KA for 1 Sec. |
| (e) | Maximum Temp. rise | : | (40°C. above ambient.) |

7.2 BUS BARS

The bus bars shall be made out of High conductivity aluminium alloy strips equivalent to 63401-WP of IS:5082/1969. The bus shall be individually insulated with an approved non deteriorating insulating material so as to prevent any possibility of an electrical fault due to presence of vermin. Expansion joints shall be provided at suitable intervals to allow expansion of bus bars upwards. The current density shall not be more than 1 Amp per sq.mm. Each section bus bar must be suitably supported to prevent from sliding downwards. Connections between adjacent sections should be adequately insulated. In each vertical run the bus bar should rest rigidly on a thrust pad at the bottom, thereby allowing expansion of the bus bar upwards, with the provision of suitable expansion joints. The top end of the mains should be closed by a blank end cover, as it must be possible to extend the mains easily at a later date. The cover of rising mains shall be of screwed removable type provided with ventilation louvers with aluminium

wire mesh at suitable intervals. Main bus bar connections and auxiliary wiring etc. shall conform to IS 375 - 1963, revised and amended to date.

7.3 TAP-OFF BOXES

Fixed type tap-off boxes are provided to the floor distribution as per requirement. Proper tapping arrangement as shown in schedule of quantities / drawing shall be incorporated in tap off boxes, suitable to tap TPN supplies. Detachable end plates shall be provided which can be drilled to suit conduit/compression glands.

Tap of boxes required to be fitted to the rising mains shall comprise of:

- a) Tap off arrangement with bolted type rigid connection
- b) Isolating switches MCCB-FP as required.
- c) TPN BUS BARS - ALUMINIUM
- d) Separate earth links / studs (2Nos) to be provided on each floor.
- e) Danger plates.

7.4 END FEED UNIT

The incoming supply to the rising mains shall be controlled by a suitable rated moulded case circuit breakers having fault level not less than 35 KA. This includes incoming and outgoing links of rated capacity and connecting the same with rising mains.

7.5 ACCESSORIES

All accessories such as reducers, bends, tees & end covers, expansion joints, adapter box, danger plates as required shall be provided and included in the cost of Rising Mains.

7.6 SUPPORTS/ FIXING ARRANGEMENTS

Proper supporting brackets are provided at appropriate intervals as approved by the Engineer in charge for firmly grouting the rising main in position, with hold the total load of the rising main and sliding of the same down wards.

7.7 EARTHING

The entire length of the rising mains shall be fitted with two runs of earthing strips of suitable size.

7.8 TESTS

The rising mains shall be CPRI type tested for a fault level of 35 KA for 1 sec. All relevant test including temperature rise test as per IS codes shall be carried out in the presence of owner's representative at manufacturers works.

8. CABLE TRAYS

8.1 GENERAL SCOPE:

Supply, installation, storing, laying, fixing, jointing / termination, testing and commissioning of Medium Voltage PVC /XLPE insulated extruded PVC inner sheathed PVC overall Sheathed armoured aluminium/ copper conductor cables laid in built up trenches, directly buried underground, on cable trays, in pipes, clamped directly to wall or Structures etc. as called for in the drawing.

a) Type:

Medium voltage cables shall be circular, multicore annealed copper or aluminium conductor, XLPE insulated, PVC extruded inner sheathed an PVC overall sheathed and steel wire armoured or steel tape armoured construction or unarmoured. The conductors of cable shall be stranded. Sector shaped stranded conductors shall be used for cables of 50 sqmm size and above. The cables shall conform to IS:1554 part-I in all respects.

MV power cables shall be 2, 3, 3.5 or 4 cores, as required and shall have conductors made from electrical purity aluminium conductors conforming to IS:8130-84.

Conductors shall be insulated with high quality compounded XLPE by extrusion process. A common covering shall be applied over the laid-up cores by an extruded PVC inner sheath. Armouring of galvanised round steel wires or galvanised flat steel strips shall be provided over the inner sheath.

Outer sheath of PVC shall be extruded over the armouring. Cables shall be manufactured and tested in accordance with IS 7098 Part I.

Unless otherwise specified, all control cables shall be multicore, 1100V grade PVC insulated; armoured and overall PVC sheathed with stranded copper conductors of 2.5 sq.mm, conforming to IS 1554 Part I. Cores shall be identified by colour scheme of PVC insulation.

b) Rating:

The cables shall be rated for a voltage of 1100 Volts.

c) Core Identifications:

Cores shall be provided with the following colour scheme of PVC insulation

- | | | |
|----------------|---|--|
| 1. Single Core | : | Green, yellow for earthing. |
| 2. Two Cores | : | Red and Black, Blue & Black, Yellow & Black. |
| 3. Three Cores | : | Red, Yellow & Blue |
| 4. Four Core | : | Red, Yellow, Blue & Black |

d) Selection of Cable:

- Cables sizes shall be selected considering the current carrying capacity, voltage drop, maximum short circuit duty and the period of short circuit to meet the present and future anticipated loads.
- While deciding cable sizes, the derating factors for type and depth of laying, grouping, ambient temperature, ground temperature and soil resistivity shall be taken into account.

8.2 STANDARDS:

The following standards and rules shall be applicable.

IS 1554: PVC insulated (heavy duty) electric cables Part I for working voltages upto and including 1100 V.

IS 7098 -I : XLPE insulated, Aluminium conductor, PVC sheathed, 1100V cables. IS 8130: Conductors for insulated electric cables and flexible cords.

IS 3961: Recommended current ratings for cables:(Part 2) PVC Insulated and PVC sheathed heavy duty cables.

IS 5831: PVC insulation and sheath of electric cables.

The individual cores shall have continuous numbering of the core all along its length and also be provided with identification ferrules at both ends. Individual control cables shall have 20% spare cores.

PVC / XLPE cables shall be used for all electrical works to prevent flame propagation, smoke reduction and to avoid toxic gas emission in the event of a fire. FR compound shall be tested rigorously for oxygen index as per ASTM D2863, acid gas generation to IEC 754-1, smoke density to ASTM D 2843 and flammability SS 424 1475 class F3, IEEE 383 and IEC 332-1.

Manufacturer's name, ISI Mark, cable size and type shall be clearly embossed at regular intervals on all cables.

8.3 INSPECTION:

All cables shall be tested inspected at manufacturer's works. However, upon receipt at site cables shall be checked for physical damages during transit.

8.4 JOINTS IN CABLES:

The contractor shall take care to see that all the cables received at site are apportioned to various locations in such a manner as to ensure maximum utilization and avoidance of straight cable jointing. This apportioning shall be got approved by the Engineer-in-Charge before the cables are cut to lengths.

Where straight joints in cable are unavoidable, the use and location of such straight joints shall be got approved by Engineer-in-Charge.

8.5 JOINTING BOXES FOR CABLES:

Cable joint boxes shall be of appropriate size, suitable for XLPE insulated PVC Sheathed armoured cables of particular voltage rating.

8.6 JOINTING OF CABLES:

All cable joints shall be made in suitable, approved cable joint boxes, jointing of cables in the joint boxes and the filling in of compound shall be done in accordance with manufacturer's instructions and in an approved manner. All straight joints shall be done in epoxy mould boxes with epoxy resin (Tropolin/M-Seal resin or approved equal). All jointing accessories shall be of CCI/INCAB or approved equal. All terminal leads of conductors shall be heavy soldered upto at least 50mm length.

All cables shall be joined colour to colour and tested for continuity and insulation resistance before jointing commences. The seals of cables shall not be removed until preparations for jointing are completed. Joints shall be finished on the same day as commenced and sufficient protection from the weather shall be arranged. The conductors shall be efficiently insulated with high voltage insulating tape and by using spreaders of approved size and pattern. The joints shall be completely filled with epoxy compound and tapped so as to ensure that the box is properly filled.

Epoxy compound shall be filled as follows :

Equal quantities of resin and hardener shall be mixed thoroughly by hand until the mixture is free from white patches and has uniform colour. No water, oil or any other liquid shall be added to the mixture to make it soft as this will affect the properties of the compound. The mixture shall be used within 30-40 minutes of mixing. The surface on which epoxy compound is to be used, shall be free from dust, rust, oil, grease and shall be dry. The joint shall neither be disturbed nor moved till the epoxy compound is completely hardened. A smooth surface can be made by rubbing a damp cloth smoothly on the compound before it sets. The joints shall be painted after it has completely hardened.

Alternatively, ready mix of epoxy cable jointing compound may also be used.

8.7 CABLE MARKERS/ CABLE TAGS:

Cable Markers: All underground cables and cable joints shall be marked on the surface by markers generally manufactured and tested to the requirements of relevant ISS. Approved CI cable markers shall be provided at every 30m along the route of the cables and at both ends of road crossing, indicating cable joints and cables as applicable. Special CI markers shall be provided at all buried cable joints indicating "Electrical Cable Joints". CI plates duly engraved with the size of the cable and the place it serves shall be tied to the cable at regular intervals of 5m for easy identification of cables.

Cable Tags: Cable tags shall be made out of 2 mm thick aluminium sheets, each tag 32 mm in dia with one hole of 2.5 mm dia. 6 mm below the periphery shall be provided for clamping the same with cables. Cable designation are to be punched with letter/number punches and the tags are to be tied to cables with piano wires of approved quality and size. Tags shall be tied inside the panels beyond the glands as well as below the glands at cable entires. Along trays, tags are to be tied at all bends on straight lengths, tags shall be provided at every 5 meter.

8.8 TERMINATION OF CABLES:

Cable termination shall be done in terminal box or cable end box or distribution boards, or apparatus/equipments. Terminations are to be made with mechanical gland and of the tinned nickel plated, anti- corrosive, three piece improved pattern which is to grip inner and outer PVC

sheaths as well as the armour of the cable. The cable ends or the core conductor are to be connected by solderless lugs or sockets using crimping tool of approved make for all cables. All terminations of cable conductors and base conductors shall be mechanically and electrically sound and shall comply with the requirements of relevant Standards and Indian electricity regulations.

The connectors or connecting sockets are to have such dimensions so as to limit temperature rise.

When required the water tightness of the terminal boxes may be obtained by filling with a compound preferably plastic flame retarding and non-dripping type within the normal range of temperatures.

When the cable is cut during the course of installation the open ends are to be sealed immediately by means of self-adhesive non hygroscopic tape over a wax water seal to make an air and watertight joint.

8.9 INSTALLATION OF CABLES:

Cable shall be laid in a manner as indicated on the drawings. Generally cables are laid in the following manner.

- i. In the underground masonry trench.
- ii. On the cable tray/or on cable ladders.
- iii. Buried underground.
- iv. Through pipe sleeves.

Various installation methods are discussed in the following paragraphs.

Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cable. The cable drums shall be placed on jacks before unwinding the cable. The cable drums shall be rotated in a direction as indicated by the manufacturer. Care shall be exercised in laying cables to avoid forming kinks. The drums shall be unrolled and cables run over wooden rollers, placed at intervals not exceeding 2 meters.

8.9.1 General

All cables shall be adequately protected against any risk of mechanical damage to which they may be liable in normal conditions of service.

When cable pass through holes in metal work, precautions shall be taken to prevent abrasion of the cables on any sharp edges.

In every vertical cable ladders, channel or duct or trunking or cable trench containing cables and exceeding three meters in length, internal barriers shall be provided so as to prevent the air at the top of the unit from attaining an excessively high temperature. In every vertical cable shaft, cable trench or any passage of cable through wall, ceiling, floor barriers against spread of fire and smoke shall be provided for compliance with IEE regulations. Fire resistant painting shall be applied on all power cables.

Where cable passes through walls, ceiling, floor, it shall run through sleeve of PVC pipes/ GI Pipes or hume pipes of adequate diameter. After pulling the cable through sleeve, both the ends of the sleeve shall be sealed water tight with fire resistance material to prevent spread of fire and seepage of water.

Generally along each cable route either in trench or in cable trays/ladders or in pipe separate

Two Nos. of earth strips/ wires shall run exposed.

Where an installation comprises medium voltage cables as well as extra low voltage circuits,

precaution shall be taken in accordance with relevant regulations and shall be physically separated by minimum of 300mm distance.

Metal sheaths and armour of all cables, metal conduits, ducts, trunking, and bare earth continuity conductors associated with such cables, which might otherwise come into fortuitous contact with other fixed metal work shall be effectively bonded there to earth so as to prevent appreciable potential difference at such possible points of contact.

8.9.2 Underground Installations

The cables shall be laid in an excavated trench. The depth of the trench shall be minimum 750 mm below the final ground level but shall be decided on the number of cables to be laid in the trench so that the vertical distance between two adjacent layers of cables shall not be less than 350mm. The width of the trench shall be decided on the number of cables to be laid in the trench so that the distance between two adjacent cables shall not be less than one cable diameter.

a) Width of Trench:

- i) The minimum width of trench for laying single cable shall be 350 mm.
- ii) Where more than over cable is to be laid in the same trench in horizontal formation, the width of trench shall be increased such that the inter axial spacing between the cables, except whether otherwise specified shall be at least 200 mm.
- iii) There shall be clearance of at least 150 mm between axis of the end cables and the sides of the trench.

b) Depth of Trench:

- i) Where cables are laid in single tier formation, the total depth of the trench shall not be less than 750 mm.
- ii) When more than one tier of cables is unavoidable and vertical formation of laying adopted, depth of trench in (i) above shall be increased by 300 mm for each additional tier to be formed.

In addition to above, where gradients and changes in depth are unavoidable, these shall be gradual. The cables shall be protected by placing precast concrete tiles or burnt bricks over the cables on top layer of sand and for the full length of underground cables. Where more than one cable is running in the same trench, the concrete tiles/bricks shall cover all the cables and shall project a minimum of 150mm on either side of the cables.

In any case the top layer of the cables shall be minimum 600 mm below the finished level of the ground.

The top of the cable trench shall be well compacted till the finished level of the ground and shall be approved by the Engineer-in-Charge. If required a laboratory compaction test shall be carried out in presence of Engineer-in-Charge.

H.V., M.V., cables shall not be laid in the same trench/cable tray and/ or alongside of water main.

Cables under road crossings and any surfaces subjected to heavy traffic shall be protected by running them through Hume pipes of suitable size.

Where cables cross one another, the cables of higher voltages shall be laid at lower level than the cable of lower voltage.

The relative position of the cables laid in the same trench shall be preserved and the cables shall not cross each other as far as possible. At all changes in direction in horizontal and vertical planes, the cable shall be bent smooth with a radius of bend not less than 15 times the diameter of the cable. Minimum 3 meters long loop shall be provided at both sides of every straight joint and 5 meters at each end of the cable. Distinguishing marks shall be made at the cable ends for identification.

Proximity to Communication Cables:

MV Cables and communication cables shall as per as possible cross at right angles where power cables are laid in proximity to communication cables the horizontal and vertical clearance shall not normally be less than 600 mm.

Insulation tapes of appropriate voltage and in red, yellow, and blue colours shall be wrapped just below the sockets for phase identification.

All the excavation and back fill including timbering, shoring, and pumping required for the installation of the cables shall be carried out as indicated on the drawing and as per requirements laid down elsewhere or as per Engineer-in-Charge direction. Trenches shall be dug true to line and grades. Back fill for trenches shall be filled in layers not exceeding 150mm. At each layer compaction test shall be carried out in presence of Engineer-in-Charge Each layer shall be properly rammed and consolidated before laying the next layer. The contractor shall restore all surfaces, roadways, side walls, curbs, walls, landscaping or other works cut for excavation to their original condition, the satisfaction of the Engineer-in-Charge. Suitable approved

type cable markers shall be installed along the cable route & wherever change of direction takes place.

8.9.3 Cables Installed Inside the Building

The cables inside the building shall be installed in one of the following manner, as indicated in the drawing and approved by the Engineer-in-Charge.

8.9.3.1 Installed in Built-up Trench

The cables laid on the bottom of the structural trenches shall not lay freely upon the trench bottom. They shall be raised to prevent the possibility of their coming into contact with deleterious materials.

The cables laid in the trench shall be laid on angle iron brackets/cable tray/cable ladder/cable troughs/cable racks as indicated on the drawings, and as approved by the Engineer-in-Charge. Where cables are clamped to the wall a minimum clearance of 100mm shall be maintained between wall and cable and minimum 150mm vertical clearance shall be maintained between two cables. Where cables are laid on brackets the brackets shall not be fixed more than 500mm apart to avoid sag in the cables. Where the cables are laid on cable tray/ladder/troughs /racks, minimum 300mm distance shall be observed between adjacent tier of tray/ladder/troughs/racks, and cable shall be fixed minimum 25mm away from the wall, and minimum of one cable diameter distance shall be observed between two adjacent cables. Cables shall be properly fixed with the tray/ ladder/ troughs/ racks with cable tie or saddles or straps.

8.9.3.2 Cables on Cable Trays/Ladders under the Ceiling or on Wall

Where cables are installed under above suspended ceiling or below ceiling or on wall, they shall be laid on a ladder/perforated G.I. cable tray and shall be run in such positions that they are not liable to be damaged by contact with the floor or the ceiling or other fixtures.

The ladder/perforated cable tray shall be properly fixed with channels, angles, tie rod, flats to the ceiling. The metal inserts for fixing channels, angles, tie rod, flats shall be put in place while casting the slab. If insert plates are not placed in position, Anchor fasteners shall be used to support cable trays if required. The cable tray route shall be co-ordinated with other services to avoid crisscross of all the services. While laying the cables on the tray minimum one cable diameter distance shall be observed between two adjacent cables about 20% space shall be kept spare for any future installation.

The trays shall be made of 2mm thick perforated sheet having minimum 75 mm depth. The width of perforation shall be maximum 10mm spaced at maximum 20mm distance. The width of the cable tray shall be selected so as to accommodate required number of cables to be laid on it, with minimum separation of minimum one cable diameter between two adjacent cables. The cables shall be tied with the cable tray with nylon strip/ Aluminium clamps/GI clamps.

Wherever, MS painted cables tray to be used, all steel work shall be treated in accordance with the following procedure and in accordance with IS : 6005 "Code of Practice for Phosphate Iron and Steel". Oil, grease, dirt and swab shall be thoroughly removed by emulsion cleaning.

Rusting and scale shall be removed by Pickling with dilute acid followed by washing with running water, rinsing with slightly alkaline hot water and over drying.

The phosphate coating shall be sealed by the application of two coats of ready mixed stoving type zinc chromate primer.

After application of the primer, two coats of finishing stove enameled paint shall be applied. The final finished thickness of paint film on steel shall not be less than 50 microns and shall not be more than 100 microns.

Finish painted surface of steel shall present an aesthetically pleasing appearance free from uneven surface.

The finish painting shall be black matt as per ISS or as approved by Engineer-in-Charge.

8.9.3.3 Cables Installed in the Mechanical Room

The cable reaching the motors in the mechanical room or plant room or machines room or service area shall be laid on cable tray except where indicated in masonry underground trenches.

The cable reaching the motors shall be protected by rigid galvanized conduits up to a height of 300mm above the floor. Above that height, the cable shall be protected by means of oil tight flexible metallic G.I. conduits to the terminal box of the motor. The connection between the rigid conduit and the flexible conduit shall be done by a screwed coupling of an approved type. The flexible conduit shall be properly fixed with the terminal box of the motor by means of double hexagonal check nut.

8.10 CABLE TRAY SPECIFICATION:

The cable tray shall be fabricated out of slotted/perforated MS sheets as channel sections, single or double bended. The channel sections shall be supplied in convenient lengths and assembled at side to the desired lengths. These may be galvanised or painted to the desired lengths. Alternatively, where specified, the cable tray may be fabricated by two angle irons of 50mm x 50mm x 6mm as two longitudinal members, with crosses bracings between them by 50mm x 5mm flats welded/bolted to the angles at 1 m spacing. 1.6 mm thick MS perforated sheet shall be suitably welded/bolted to the base as well as on the two sides.

Typically, the dimensions, fabrication details etc. are shown in CPWD General Specification for Electrical Works - Part II -External, 1994.

The jointing between the sections shall be made with coupler plates of the same material and thickness as the channel section. Two coupler plates, each of minimum 200mm length, shall be bolted on each of the two sides of the channel section with 8mm dia round headed bolts, nuts and washers. In order to maintain proper earth continuity bond, the paint on the contact surfaces between the coupler plates and cable tray shall be scraped and removed before the installation.

The maximum permissible uniformly distributed load for various sizes of cables trays and for different supported span are as per CPWD General Specification of Electrical Work Part II - 1994. The sizes shall be specified considering the same.

The width of the cable tray shall be chosen so as to accommodate all the cable in one tier, plus 30 to 50% additional width for future expansion. This additional width shall be minimum 100mm. The overall width of one cable tray shall be limited to 800mm.

Factory fabricated bends, reducers, tee/cross junctions, etc. shall be provided as per good engineering practice. (Details are typically shown in figure3) of CPWD General Specification of Electrical Work Part II -1994. The radius of bends, junctions etc. shall not be less than the minimum permissible radius of bending of the largest size of cable to be carried by the cable tray.

The cable tray shall be suspended from the ceiling slab with the help of 12mm dia Electro Galvanized MS rods or 25mm x 5mm flats at specified spacing as per of CPWD General Specification of Electrical Work Part II -1994. Flat type suspenders may be used for channels upto 450mm width bolted to cable trays. Round suspenders shall be threaded and bolted to the cable trays or to independent support angles 50mm x 50mm x 5mm at the bottom end as specified. These shall be grouted to the ceiling slab at the other end through an effective means, as approved by the Engineer, to take the weight of the cable tray with the cables.

The entire tray (except in the case of galvanized type) and the suspenders shall be painted with two coats of red oxide primer paint after removing the dirt and rust, and finished with two coats of spray paint of approved make synthetic enamel paint.

The cable tray shall be bonded to the earth Terminal of the switch bonds at both ends. The cable trays shall be measured on unit length basis, along the center line of the cable tray, including bends, reducers, tees, cross joints, etc, and paid for accordingly.

9. U-PVC RACEWAY:

UPVC trunking comprises of Base, flexible cover, partitions if required for separation, and all accessories like end Cap, base joint, cover joint, flat junction etc, with flat angles and junctions having partitions in them for separation of data and power cables.. The material of the Trunking shall be UPVC with White RAL 9010, Factory Finish, system with independent cover, Conforms to NFC 68-104 - U-PVC Trunking.

10. CABLE TAGS:

Cable tags shall be made out of 2mm thick aluminium sheets. Each tag shall be 2" in dia or 3" x 3" square with one hole of 2.5mm dia, 6 mm below the periphery, or as approved by Engineer-in-Charge. Cable designations are to be punched with letters / number punches and the tags are to be tied to cables with piano wires of approve quality & size. Tags shall be tied inside the

panels beyond the glanding as well as above the glands at cable entries. Along trays tags are to be tied at all bends. On straight lengths, tags shall be provided at every 5 meters.

Cables shall be secured to cable trays with 3mm thick x 25mm wide aluminium strips/suitable GI clamp, or as approved by Engineer-in-Charge, at 1000 mm intervals and screwed by means of rust proof screws, washers and bolts, of adequate but not excessive lengths. Cable trays for horizontal runs suspended from the ceiling will be supported with mild steel straps or brackets, at 1000 mm intervals and the overall tray arrangement shall be of a rigid construction. Cabling route marker with GI plate marked with "DANGER 1.1 KV CABLE" with 1 meter long GI angle iron grouting bracket including 1:3:6 ratio cement concrete base block of minimum size 200 x 200 x 350 mm to be provided or as approved by Elect. Supply Company.

11. WIRING SYSTEM

11.1 SCOPE:

The scope of work under this section covers installation and wiring for lights, fans, exhaust fans, call bells, fan coil units, geysers and power sockets etc., The wiring shall generally be done using FR PVC insulated copper conductor multi strand wires in M.S./PVC conduits as called for including providing switches, sockets, plug tops, electronic fan regulators, outlet boxes etc.

11.2 STANDARDS:

The following latest standards and rules shall be applicable:

IS : 732 Code of practice for electrical wiring installation (System voltage not Exceeding 1100 V).

IS : 1646 Code of practice for fire safety of buildings (General) Electrical installation.

IS: 9537 Conduits for Electrical installations (Part 1-4)

IS: 2667 Fittings for rigid steel conduits for electrical wiring. IS: 3480 Flexible steel conduits for electrical wiring.

IS: 3837 Accessories for rigid steel conduit for electrical wiring. IS: 694 PVC insulated cables.

IS : 6946 Flexible (Pliable) non-metallic conduits for electrical installation.

IS : 1293 Plugs and sockets outlets of rated voltage upto and including 250 V.

IS : 8130 Specifications for conduits for electrical installation.

IS: 3854 Switches for domestic and similar purposes. IS : 3419 Fittings for rigid non-metallic conduits.

IS : 4648 Guide for electrical layout in residential building. IS : 4649 Adapters for flexible steel conduits.

IS : 5133 Boxes for enclosures of the Electrical. IS : 4615 Switch socket outlets.

IS : 8884 Code of practice for installation of Electric bells and call system. IS :
2551 Electric Danger notice plates.

IS : 3646 Code of practice for interior illumination. IS : 371 Ceiling Roses.

IS : 302 General and safety requirements for household and similar electrical
appliances. IS : 3043 Code of practice for earthing.

IS : 5216 Guide for safety procedures and practices in electrical work. Indian
Electricity Act and Rules.

Regulations for the electrical equipment in buildings issued by the concerned
Electrical Authorities.

11.3 POINT WIRING FOR LIGHTS, CEILING FANS, EXHAUST FAN AND CALL BELL POINTS:

11.3.1 GENERAL

A point wiring shall consist of the wiring from the switch board together with a switch as required, including providing conduit & accessories, connector, ceiling rose, with suitable termination. The item will also include looping between switch boards of the same circuit. A point wiring shall include, in addition, the earth continuity conductor/wire from the switch board to the light fitting & fans & all other such non-current carrying metals shall be earthed. No tee jointing or looping of wires shall be done anywhere except at a switch box or a light fitting. No joint shall be permitted above false ceiling.

The point wiring shall be carried out in the under mentioned manner:

- (a) Supply, installation, fixing of conduits and Steel wire/ G.I. Pull wire with necessary accessories, junction/ pull/ inspection/ switch boxes and outlet boxes etc.
- (b) Supplying and drawing of wires of required size including earth continuity FR PVC insulated wire.
- (c) Supply, installation and connection of modular type switches, sockets, cover plates, switch plates & fixing fan regulator, lamp holder, ceiling rose etc.
- (d) The point shall be complete with the loop wiring from the switch board to the switch board of same circuit.

11.3.2 POINT RATE:

For the purpose of measurements and payments the points shall be designated as follows:

- i) One light controlled by one switch.
These points are light/fan points of any length from the switch boards to the first point.
- ii) Two nos. of lights controlled by one switch and so on.

These points include wiring for first point as mentioned above and subsequent points looped from the first point to next light points and are controlled from the same switch as the first point. Such points shall be treated as separate but secondary light point as mentioned in BOQ even when no switch has been provided.

11.3.3 The Circuit Main:

The circuit main for lights/fan/6A sockets (where 6 A sockets connected to light circuit) shall include the wiring from the MCB distribution boards up to the first switch/light point/fan point. The scope of work shall include the following:

- i) Supply and wiring in concealed/surface conduit from DB's to first switch/light/fan point.
- ii) Providing FR PVC insulated copper conductor earth wire.
- iii) Providing Steel/G.I. fish wire (pull wire) in the conduit.
- iv) Termination of wires in DB's & switches using proper tinned copper lugs of soldering/crimping type.
- v) Providing necessary pull/junction boxes where necessary.
- vi) Identification of circuits shall be done with ferrule nos.

11.4 SYSTEM OF WIRING:

Unless otherwise mentioned on the drawings, the system of internal wiring shall be as follows: The system of wiring shall consist of single core, FR PVC insulated, 1100 Volt grade, stranded copper conductor wires/cables laid through concealed or exposed PVC / MS conduits as mentioned elsewhere or as directed by Engineer-in-Charge.

Prior to laying and fixing of conduits and light outlet boxes, contractor shall carefully examine the layout drawings and prepare detailed shop drawings, indicating the exact location of light outlets, with distances marked, conduit routing, with sizes, No. of wires run in each conduit, control switch location etc. The contractor shall obtain the approval of all shop drawings by the Engineer-in-Charge prior to the installation of conduits. Any discrepancy noticed in the design drawings shall be brought to the notice of the Engineer-in-charge. Any suggestions or modifications suggested by the contractor shall have the approval of Engineer-in-charge before execution.

11.5 CONDUITS:

11.5.1 Type of Conduit

Unless otherwise specified all conduits for concealed/ surface/exposed installation including conduits running above false ceiling shall be of heavy gauge rigid black enamelled MS conduits. All conduits installed below ground level or in the damp/wet area shall be 'A' Class G.I. pipes. All conduits for fire alarm system irrespective of surface or concealed shall be of MS conduits painted with post office red colour as specified in the BOQ.

11.5.2 PVC Conduits:

If specified to be provided in any special area the Non-metallic conduits and accessories shall conform to IS 9537 (part 3), IS 3419 and each conduit shall bear the ISI Mark. PVC conduits shall be of black, round, heavy gauge polyvinyl chloride (PVC). The conduit shall be plain end type as specified in IS:9537 (Part-3). The conduits internal surface shall be smooth. Only approved quality factory made bends/accessories shall be used unless otherwise stated. Minimum size of conduits shall be 20 mm diameter PVC conduits shall be rigid unplasticised, heavy gauge having 1.8mm wall thickness upto 20 mm diameter conduit and 2.0 mm wall thickness for all sizes above 20mm diameter.

11.5.3 Metal Conduits:

Conduits and Accessories shall conform to IS:9537 (Part-2). Solid drawn 16 gauge screwed steel conduits protected by black bituminous enamel shall be used in all situations except where galvanized steel conduits are called for. Where conduits for buried wiring are passing underground they shall be of galvanized steel conduit. Joints between conduits and accessories shall be securely made to ensure earth continuity.

No steel conduit less than 20mm in diameter shall be used. Conduits shall be solid drawn, lap welded, with minimum wall thickness of 1.6mm for conduits up to 20mm diameter and 2mm wall thickness for conduits having 25mm and above diameter.

The conduits shall be delivered to the site of construction in original bundles and each length of conduit shall bear the label of the manufacturer & ISI Mark (Engraved Markings) or painted markings. Conduit accessories such as bends, coupling etc., shall be conforming to relevant Indian Standard Specifications.

The number of 1100 volt grade PVC insulated copper conductor wires that may be drawn in the conduits of various size shall be in conformity with code of practice for electrical wiring installation IS 732.

11.6 CONDUIT ACCESSORIES**11.6.1 PVC Conduit Bends & Collars:**

If PVC conduits are used then the PVC conduit bends & collars shall preferably be of the same make as of conduit. This shall conform to IS 9537/3412 with ISI Mark where necessary bends or diversion may be achieved by means of using bends and or circular inspection boxes with adequate and suitable inlet and outlet termination. In case of recessed installation system, the bends shall be properly secured & flush with the finished wall surface. Elbows shall not be used. No bends shall have radius less than 2 1/2 times the outside diameter of the conduit. Readymade factory bends shall be used where required.

11.6.2 Metal Conduit Bends & Collars:

The MS conduit bends and collars shall be of MS black enamelled coated having internal threading for screwed joints of the conduits. The bends and collars shall conform to IS 2667 & having ISI mark. The conduit bends & collars shall preferably be of the same make as of conduit. The minimum radius of conduit bend shall be 2 1/2 times the outer diameter of the conduit pipe. Where necessary conduit bends with inspection door shall be used, only factory made readymade bends shall be used.

11.6.3 PVC/ Inspection/ Junction/ Pull Boxes:

The Inspection/pull box/junction boxes where used with PVC conduit installation shall be of heavy gauge PVC & conform to IS specification and shall match with the conduit sizes. The box shall be of round/square rectangular shape with conduit stub projection for termination of conduit. The box shall be minimum 50mm deep and the size of box shall be suitable to pull/make necessary joints of wires inside the boxes. Extra deep boxes are preferred. The boxes shall have flush type cover. The colour of plate shall match the colour of paint of the surface where installed. The boxes shall have concealed screwed socket for fixing the ceiling rose.

11.6.4 Metal Conduit/ Junction/ Pull/ Inspection Boxes:

The boxes for junction/pull/inspection boxes to be used with M.S. conduit installation shall be heavy gauge black enamelled M.S. boxes. These boxes shall be manufactured in conformity with ISI specification and to match the type of conduit used.

The boxes shall be of round/square or rectangular shape and shall have minimum 50mm depth. The box shall have threaded stub projection to terminate M.S. conduits. The boxes shall have concealed screwed sockets for fixing the ceiling rose or cover plate.

11.7 SWITCH OUTLET & SOCKET OUTLET BOXES:

11.7.1 Concealed Type outlet Boxes

The concealed outlet boxes for switches, sockets, power outlets, telephone outlet, fan regulator etc., shall be of same make as of switches/sockets etc. to match the exact requirement of combination of outlets. The boxes shall be fabricated out of heavy gauge CRCA cold rolled carbon alloy sheet steel with zinc plating (G.I). The size of boxes should match the type of outlet/switch plate to be mounted on the box. The adequate No. & size of knockout holes shall be provided to terminate the conduits in the box. These boxes shall be standard factory made product of same make as of switch plates & sockets. Separate screwed earth terminal shall be provided in the box for earthing. The outlet box shall be of minimum depth of 50mm. Boxes shall be suitable for grid mounting type of accessories. Long screw shall be provided to take care of the extra plaster thickness to mount the switch plates. Provision shall be made in the box & switch plate to have the minor adjustment of alignment of switch plate to plumb level.

11.7.2 Surface Type Boxes:

The boxes for mounting switches, sockets and other wiring devices shall be either moulded plastic or heavy gauge CRCA sheet steel painted to match the colour of wall. The box shall be suitable to terminate the M.S. surface conduit into the box. The size and shape of box shall match the exact type and combination of switch plates, receptacles & wiring devices. Deep boxes shall be used to facilitate easy termination of conduit & wires/cables. Separate screwed earth terminal shall be provided in the box for earthing.

11.7.3 Light Outlet Boxes :

For concealed PVC conduit installation the light outlet box shall be of PVC (round/square) with knock out holes, conduit projection suitable to terminate the conduit to the box. The box shall be made of heavy gauge PVC & the sample to have the approval of Engineer-in-Charge before use. The boxes shall have concealed screwed socket to fix the ceiling rose. The boxes shall be minimum 50 mm deep.

For surface conduit installation the light outlet box shall be of black enamelled M.S. boxes. The boxes shall have threaded stub projection having internal threading to terminate the conduit of different sizes. The boxes shall be minimum 50mm deep.

11.7.4 Ceiling Fan Hook Boxes:

The ceiling fan hook box shall be fabricated of 2mm thick M.S. with adequately sized M.S. rod/hook to fix the ceiling fan. The hook shall be concealed within the fan hook box. The side extensions of rod shall be sufficiently long enough to provide adequate anchorage in the

concrete. The size of the box shall be such that it should be totally covered by the plastic canopy of the ceiling fan. The box shall have anticorrosive primer coating.

11.8 COVER PLATES FOR SWITCHES & OUTLETS

Switches/socket/wiring devices plates shall be the same product as of switches/ sockets/wiring devices. This shall be of best quality moulded plastic grid mounting type device plates/ frames and shall match with the type of switches/ sockets & boxes.

11.9 COVER PLATES FOR INSPECTION/JUNCTION/PULL BOXES

The cover plate for PVC boxes shall be minimum 3mm thick of perspex/ formica sheet cover. For M.S. boxes cover plate shall be black enamelled M.S. plates. The shape of the plate shall match that of the box.

11.10 RECEPTACLES

The sockets shall conform to IS 1293. Each socket shall be provided with control switch of appropriate rating. The sockets shall be moulded type rated for 250 volts and of full 6 Amp or 16 Amp capacity as mentioned on the drawings.

The 6/16 Amps sockets shall be multi-pin (6 pin) automatic shutter type suitable for plugging 6 Amps/16 Amps tops. The shutter shall open when the earth pin of the plug top inserts in the socket. Where called for the 16 Amps socket shall have indicating lamp. The socket outlets & switches shall be of grid mounting type. Where called for sockets shall be provided with three pin plug top suitable to the socket & of the same make as of socket. The socket outlets installed outside the building/open to sky or in damp/wet areas shall of weatherproof water tight type.

11.11 INDUSTRIAL TYPE SOCKETS

The socket outlets single phase or three phase installed in basement area, kitchen etc., shall be three pin or 5 pin industrial type with MCB (Single phase or three phase) control. The socket & MCBs shall be mounted in a sheet steel enclosure and shall be the standard factory made product.

11.12 CONDUCTORS

All PVC insulated Copper conductor wires shall conform in all respects to standards as listed under sub-head 'Regulations and Standards' and shall be of 1100V Grade.

11.12.1 FR PVC insulated wires (for light & small power wiring)

a) For all internal wiring FR PVC insulated cables of 1100V grade, single core shall be used. The conductors shall be plain annealed copper conductors complying with relevant ISS.

The conductors shall be circular stranded copper conductor.

b) The minimum number and diameter of wires for circular stranded conductor shall meet the requirements set out in the relevant Indian Standards.

c) The insulation shall be PVC compound complying with the requirements of relevant ISS. It shall be applied by an extrusion process and shall form a compact homogeneous

body.

The thickness of PVC insulation shall be as set out in the relevant standards.

d) The cores of all cables shall be identified by colours in accordance with the following sequence. Single phase - Red

Three phase - Red, Yellow, Blue Neutral - Black

Earth - Green or Green/Yellow

A means of identifying the manufacturer shall be provided throughout the length of cable.

11.12.2 Wire Sizes:

Unless otherwise specified in the drawings the size of the cable/wires used for internal wiring shall be as follows:

In case of circuit wiring for lights, exhaust fans, ceiling fans, bell, convenience socket outlet points:-

1.5 Sq. mm - From DB's to the junction boxes, FCU, first switch board etc. with no joints. In between joints may be at switches, socket outlet, light points only.

2.5/4.0 Sq. mm - From junction boxes to 16 A / 20 A sockets outlets etc. In case of power socket outlet circuit.

6.0 Sq. mm - From D.B. 25/30 Amps Industrial type sockets.

4.0 Sq. mm - From DBs to 16/20 Amps sockets.

The earth continuity conductor size as indicated in the drawing/BOQ shall be drawn through conduit along with other circuit cables/wires. For general guidance the size of the earth continuity conductor shall be as follows:-

Unless otherwise Specified Minimum Size Of Earth Continuity Conductor Wires Not Forming Part Of The Same Cable As The Associated Circuit Conductor.

NOMINAL Cross-sectional area of largest associated copper circuit conductor in Sq.mm	NOMINAL Cross-sectional area of earth continuity Conductor in sqmm (PVC insulated green colour wire
2.5	1.5
4.0	2.5
6.0	2.5
10.0	4.0
16.0	6.0
25.0	10.0
35.0	10.0
50.0	10.0

Separate circuit shall run for each water heater, pantry/kitchen equipment, window air conditioner and similar outlets at location as shown on drawings.

11.13 INSTALLATION OF CONDUIT

11.13.1 Concealed Conduit System with PVC Conduit:

a) Unless otherwise Specified all wiring shall be in heavy gauge black enamelled MS conduit embedded in wall, or ceiling and concealed in the false ceiling as specified in case of PVC conduit the size of the conduit shall be selected in conformity with I.S. code and as specified in the table given below. Factory made conduit bends and accessories shall be used. PVC Conduit shall be joined using coupler as supplied by the conduit supplier. The conduit in ceiling slab shall be straight as far as possible. Before the conduits are laid in the ceiling, the position of the outlet points, controls, junction boxes shall be set out clearly as per the dimensions and to minimize off-sets and bends. Before the reinforcement rods are kept in position electrical contractor should mark in paint the position of outlet points and conduit drop on the shuttering. When the outlet boxes are kept in position & before pouring the concrete, all outlet boxes shall be filled with paper to avoid entry of concrete inside the box. Conduits in ceiling shall be bonded to the reinforcement rods with Steel wire bonding wire at intervals not more than 1000mm, to secure them in position. PVC deep light outlet / pull boxes shall be provided as required. The conduit in ceiling slab shall be laid above the first layer of reinforcement rods to avoid cracks in the ceiling surface. In general the conduit shall not be laid directly on the shuttering surface to avoid cracks in the ceiling surface.

b) Conduits Concealed in the wall shall be secured rigidly by means of steel hooks / staples at min. 750 mm intervals. Before conduit is concealed in the walls, all chases, grooves shall be neatly made to proper required dimensions using electrically/manually operated groove cutting tools to accommodate number of conduits. The outlet boxes for control switches, inspection and draw boxes shall be fixed as and when conduits are being fixed. The recessing of conduits in walls shall be so arranged as to allow at least 12mm plaster cover on the same. All grooves, chases etc. shall be refilled with 1:4 cement mortar and finished up to wall surface before plastering of walls is taken up by the general civil contractor. Horizontal chase in walls are not allowed. Where, unavoidable prior permission of Engineer-in-Charge shall be obtained before making any chasing. Where conduits pass through expansion joints in the building, adequate expansion fitting or other approved devices shall be used to take care of the relative movement. Whenever the conduits terminate into Control Boxes, distribution boards etc. conduits shall be rigidly connected to the boxes/boards with check nuts on either side of the entry. After conduits, junction boxes, outlet boxes etc. are fixed in position, their outlets shall be properly plugged with PVC stoppers or any other suitable material so that water, mortar, vermin or any other foreign materials do not enter into the conduit system. All conduit ends terminating into an outlet shall be provided with bushes of PVC or rubber after the conduit ends are properly filed to remove burrs and sharp edges. Necessary G.I./Steel wire pull wires shall be inserted into the conduit for drawing wires before concreting. Insulated earth wires shall be run in each conduit originating from the panel board upto the Light, Socket and Switch boxes. If the Electrical Contractor forgets to install any conduit/ boxes etc., before the

plastering/ painting work is done by other agencies, he may be permitted to install the same with prior permission of Engineer-in- Charge and he shall be liable to make good the wall, floor, ceiling etc. at his own cost.

c) Conduits shall be so arranged as to facilitate easy drawing of wires through them. Entire conduit layout shall be done in such a way as to avoid additional junction boxes other than light points. The wiring shall be done in a looping manner. All the looping shall be done in either switch boxes or outlet box. Joints in junction or pull boxes are strictly not allowed.

d) All conduits shall be installed so as to avoid touching of steam and hot water pipes. Conduits shall be installed in such a way that the junction and pull boxes shall always be accessible for repairs and maintenance work. The location of junction/pull boxes shall be marked on the shop drawings and approved by the Engineer-in-Charge. A separation of 200mm shall be maintained between electrical conduits and hot water lines in the building.

e) No run of conduit shall exceed ten meters between adjacent draw in points nor shall it contain more than two right angle bends, or other deviation from the straight line.

f) Caution shall be exercised in using the PVC conduits in location where ambient temperature is 50 degree Celsius or above. Use of PVC conduits in places where ambient temperature is more than 60 degree C is prohibited. The entire conduit system including boxes shall be thoroughly cleaned after completion of installations and before drawing of wires. Conduit system shall be erect and straight as far as possible. Traps where water may accumulate from condensation are to be avoided and if unavoidable, suitable provision for draining the water shall be made.

All jointing method shall be subject to the approval of the Engineer-in-Charge.

g) Separate conduits shall be provided for the following system.

- Lighting wiring
- 16 Amp power outlets.
- Telephone/intercom system.
- Fire Alarm system.
- Cable TV/Music system.
- Computer data cabling system.
- Equipment wiring/Cabling.

h) Conduit Joints

Conduits shall be joined by means of plain couplers. Where there are long runs of straight conduit, pull/inspection boxes shall be provided at intervals, as approved by the Engineer-in-Charge. The conduits shall be thoroughly cleaned before making the joints. In case of plain coupler joints, proper jointing material like vinyl solvent cement

(grey in colour) or any material as recommended by the manufacturer shall be used.

i) Bends in Conduit

Wherever necessary, long bends or diversions may be achieved by bending the conduits or by employing normal bends. No bends shall have radius less than 2.5 times outside diameter of the conduit. Heat may be used to soften the PVC conduit for bending, but while applying heat to the conduit, the conduit shall be filled with sand to avoid any damage to the conduit. Kinks in the conduit bends shall not be acceptable.

j) Bunching of Cables:

Cables of AC supply of different phase shall be bunched in separate conduits. The number of insulated wires/cables that may be drawn into the conduits shall be as per the following table. In this table, the space factor does not exceed 40%. However, in any case conduits having lesser than 20 mm diameter shall not be used.

Maximum number of PVC insulated 650/1100 V grade aluminium/ copper conductor cable conforming to IS : 694 - 1990, that can be drawn into rigid PVC/ MS Conduit.

Nominal Cross-Sectional Area of Conductor	Conduit Size											
	20m m		25m m		32m m		38m m		51m m		64m m	
	S	B	S	B	S	B	S	B	S	B	S	B
1	3	2	5	4	7	6	9	8	11	10	13	12
1.50	5	4	10	8	18	12	-	-	-	-	-	-
2.50	5	3	8	6	12	10	-	-	-	-	-	-
4	3	2	6	5	10	8	-	-	-	-	-	-
6	2	-	5	4	8	7	-	-	-	-	-	-
10	2	-	4	3	6	5	8	6	-	-	-	-
16	-	-	2	2	3	3	6	5	10	7	12	8
25	-	-	-	-	3	2	5	3	8	6	9	7

Nominal Cross-Sectional Area of Conductor	Conduit Size					
	20mm	25mm	32mm	38mm	51mm	64mm

r												
35	-	-	-	-	-	-	3	2	6	5	8	6
50	-	-	-	-	-	-	-	-	5	3	6	5
70	-	-	-	-	-	-	-	-	4	3	5	4

NOTE:

1. The above table shows the maximum capacity of conduits for a simultaneous drawing in of cables.
2. The columns headed 'S' apply to runs of conduits which have distance not exceeding 4.25m between draw in boxes and which do not deflect from the straight by an angle of more than 15 degrees. The columns headed 'B' apply to runs of conduit which deflect from the straight by an angle of more than 15 degrees.
3. Conduit sizes are the nominal external diameters.

11.13.2 Open/Surface Conduit System with M.S. Conduits:

- a) Wherever specifically called for, surface conduit system shall be adopted. All conduits shall be of rigid MS. pipe. All conduits and its accessories shall be of threaded type. Conduits shall run in square and Symmetrical lines. Before the conduits are installed, the exact route shall be marked at the site and approval of the Engineer-in-Charge shall be obtained. Conduits shall be fixed by heavy gauge PVC saddles, secured by suitable rawl plugs, at an interval of not more than 1 meter. Wherever, couplers, bends, or similar fittings are used saddles shall be provided at either side at a distance of 300 mm from the centre of such fittings. Conduits shall be joined by means of screwed couplers and screwed accessories only. In long distance straight runs of conduit, inspection type couplers /junction boxes shall be provided. Threading shall be long enough to accommodate pipe to the full threaded portion of the couplers and accessories. Cut ends of conduits shall have neither sharp edges nor any burrs left to avoid damage to insulation of wires.
- b) Bends in conduit runs shall be done by using pipe bending machine. Sharp bends shall be accomplished by introducing solid bends, inspection bends or PVC inspection boxes. Radius of solid bends shall not be less than 75mm. Not less than 90 degree bend shall be used in a conduit run from outlet to outlet.
- c) Wherever conduits terminate into control boxes, outlet boxes, distribution boards etc, they shall be rigidly connected to the box with checknuts on either side of the entry.
- d) Steel wire /fish wire shall be drawn in each conduit.
- e) Separate PVC insulated copper conductor earth wire shall be drawn in each conduit.
- f) Draw boxes shall be located at convenient location for easy drawing of wires.
- g) Every mains and sub-mains shall run in an independent conduit with an independent earth wire of specified capacity along the entire length of conduit.
- h) The conduit to be installed shall be of ample cross section area to facilitate the

drawing of wires. The diameter of the conduit shall be selected as per table specified in this specification. But in no case it shall be less than 20 mm diameter.

- i) Entire conduit layout shall be done such as to avoid additional junction boxes other than for outlet points. Conduits shall be free from sharp edge and burrs. Conduits shall be laid in a neat and organized manner as directed and approved by the Engineer-in-Charge. Conduit runs shall be planned so as not to conflict with any other services pipe, lines/duct.
- j) The conduit shall be painted with two coats of enamel paint, colour as approved by the Engineer-in-Charge after installation.
- k) If required, connection between PVC and steel conduits shall be through a junction box. Direct connection between PVC and steel conduits are not allowed.
- l) Where exposed conduits are suspended from the structure, they shall be clamped firmly and rigidly to hangers of design to be approved by the Engineer-in-Charge where hanger supports are to be anchored to reinforced concrete, appropriate inserts and necessary devices for their fixing shall

be left in position at the time of concreting, making holes and opening in the concrete will generally not be allowed. Where inserts are not provided, contractor shall use only anchor fasteners. In case, it is unavoidable, prior permission of the Engineer-in-Charge shall be obtained to make any openings in the concrete surface.

m) Conduit Joints:

Conduit pipes shall be joined by means of screwed couplers and screwed accessories, as per IS : 2667. The threads shall be free from grease or oil. In long distanced straight runs of conduit, inspection type couplers at reasonable intervals shall be provided or running threads with couplers and lock nuts shall be provided. The bare threaded portion shall be treated with anti-corrosive paints. Threads on conduit pipes in all cases shall be between 11mm or 27mm long, sufficient to accommodate pipes to full threaded portion of couplers or accessories. Cut ends of conduit pipes shall have neither sharp edges nor any burrs left, to avoid damage to the insulation of conductors while pulling them through such pipes.

Brass female bushes shall be used in each conduit termination in a switch box, outlet box, electrical panel or any other box. Conduit shall be secure in each outlet box, switch box, electrical panel or any other box by means of one G.I. hexagonal lock nut and bush, outside and inside the box. At each building expansion joints, approved oil tight double wire wound flexible steel conduit or any other approved method shall be used. This shall be united on both sides with the rigid conduits by suitable union. Conduits installed in the plant room for mechanical equipment shall be properly clamped with the mechanical supports, but in no case, it shall be fixed with the body of the equipment.

The connection of conduit to the mechanical equipment shall be through oil tight double wire wound flexible steel conduit. In any case the length of the flexible conduit shall not exceed one meter. The flexible conduit shall be properly clamped with the body of the equipment. They shall not in any case be clamped to any cover or any removable parts of the equipment.

n) Bends of Conduits:

All necessary bends in the system including diversion shall be done by bending pipes or by inserting suitable solid or circular inspection type normal box or similar fittings. Conduit fittings shall be avoided as far as possible on conduit system exposed to weather, where necessary, solid type fittings shall be used. Radius of such bends in conduit pipes shall be not less than 75mm. No length of conduit shall have more than the equivalent of four quarter bends from outlet, the bends at the outlets not being counted.

o) Protection against Dampness:

In order to minimize condensation or sweating inside the conduit, all outlets of conduit system shall be properly drained and ventilated, but in such a manner as to prevent the entry of insects, as far as possible.

p) Protection of Conduit Against Rust:

The outer surface of the conduits including bends, junction boxes, etc., forming part of the conduit system shall be adequately protected against rust, particularly when such system is exposed to weather. In all cases, no bare/ threaded portion of conduit pipe shall be allowed unless such bare threaded portion is treated with anti-corrosive coating or covered with approved plastic compound. All screwed and socket connections shall be adequately made fully water tight by the use of proper joining material i.e. white lead for metal conduits.

q) Bunching of Cables:

Unless otherwise specified, insulated conductors of different phases shall be bunched in separate conduit. Wires carrying current shall be so bunched in the conduit that the outgoing and return wires are drawn in to the same conduit. Wires originating from two different phases shall not be run in the same conduit.

11.14 WIRING**11.14.1 GENERAL**

All final branch circuits for lighting and appliances shall be single conductor cables run inside conduits. Branch circuit conductor sizes shall be as shown in the load analysis of drawing and conforming to the requirements of the I.E. Regulations & I.S. Code. Home runs indicated on the drawings for the final branch circuits shall be kept in a separate conduit upto the panel board via switches wherever called for. No other wiring shall be bunched in the same conduit unless the other circuit main of same phase run in the conduit. For each lot of wire supply, Contractor shall supply a certificate issued by the Manufacturer stating its origin, date of manufacture, constitution and standards to which it complies and the test certificates. Looping system of wiring shall be used. Wires shall not be jointed inside the conduit or pull boxes. Where joints are unavoidable, they shall be made through approved mechanical connectors with prior permission of Engineer-in-Charge. Control switches shall be connected in the phase conductors only and shall be 'ON' when knob is down. Switches shall be fixed in galvanised steel boxes. Chromium plated screws shall be used. Power wiring shall be distinctly separate from lighting wiring. Each circuit phase wire from the distribution boards should be followed with a separate neutral wire of the same size as the circuit wire.

11.14.2 Drawing of Conductors:

- a) The drawing and jointing of PVC insulated copper wire and cables shall be executed with due regard to the following precautions. While drawing wires through conduits, care shall be taken to avoid scratches and kinks which causes breakage of conductors. There shall be no sharp bends.
- b) Insulation shall be shaved off like sharpening of a pencil and it shall not be removed by cutting it square.
- c) Strands of wires shall not be cut for connecting terminals. The terminals shall have sufficient cross sectional area to take all strands and shall be soldered. Connecting brass screws shall have flat ends. All looped joints shall be soldered and connected through block/connectors. The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less. Conductors having nominal cross sectional areas exceeding 10 sq. mm. shall always be provided with cable sockets. At all bolted terminals, brass flat washer of large area and approved steel spring shall be used. Brass nuts and bolts shall be used for all connections.
- d) Only certified wiremen and cable jointers shall be employed to do jointing work. All wires and cables shall bear the manufacturer's label and shall be brought to site in original packing. For all internal wiring, PVC insulated wires of 1100 volts grade shall be used. The sub-circuit wiring for point shall be carried out in loop system and no joints shall be allowed in the length of the conductors. If the use of joint connection is unavoidable due to any specific reason, prior permission, in writing, shall be obtained from the Engineer-in-Charge. No wire shall be drawn into any conduit, until all work of any nature, that may cause injury to wire, is completed. Care shall be taken in pulling the wires so that no damage occurs to the insulation of wire. Before the wires are drawn into the conduits, the conduits shall be thoroughly cleaned of moisture, dust, dirt or any other obstruction by forcing compressed air through the conduits. The minimum size of PVC insulated conductor wires for all sub-circuit wiring for light points shall be 2.5 sq. mm as indicated in the drawing.

11.14.3 Joints:

All joints shall be made at main switches, distribution boards, socket outlets, lighting outlets and switch boxes only. No joints shall be made in conduits and in junction boxes. Conductors shall be continuous from outlet to inlet.

11.15 MAINS AND SUB-MAINS

Mains and sub-mains cable or wires where called for shall be of the rated capacity and approved make. Every main and sub-main wire shall be drawn into an independent adequate size conduit. An independent earth wire of the proper rating shall be provided for every single phase sub main. For every 3- phase sub main, 2 nos. earth wires of proper rating shall be provided along with the sub main. The earth wires shall be fixed to conduits by means of clips at not more than 1000 mm distance. Where mains and sub- main cables are connected to switchgear, sufficient extra lengths of cable shall be provided to facilitate easy connections and maintenance.

11.16 LOAD BALANCING:

Load balancing of circuits in three phase installation shall be planned before the commencement of wiring and shall be strictly adhered to.

11.17 COLOUR CODE OF CONDUCTORS:

Colour code shall be maintained for the entire wiring installation: red, yellow, blue for three phases, black for neutral, green/ yellow green for earthing.

The control wire from light control switches to the light/ fan points shall be the same colour as that of the phase/ circuit wires feeding that particular loop.

11.18 EARTHING

All earthing system shall be in accordance with IS 3043 code of practice for earthing. The type and size of earthing wire shall be as specified under the heading of cables. Each conduit originating from the DB to various outlets shall have one earth wire (PVC insulated copper conductor green colour wire).

11.19 TESTING OF INSTALLATION

Before a completed installation is put into service, the following tests shall be complied with.

11.19.1 Insulation Resistance:

The insulation resistance shall be measured by applying 500 volt megger with all fuses in places, circuit breaker and all switches closed.

The insulation resistance in megohms of an installation, measured shall not be less than 50 megohms divided by the number of points on the circuit.

The insulation resistance shall be measured between

- Earth to Phase
- Earth to Neutral
- Phase to Neutral

11.19.2 Earth Continuity Path:

The earth continuity conductors shall be tested for electrical continuity and the electrical resistance of the same along with the earthing lead but excluding any added resistance or earth leakage circuit-breaker measured from the connection, with the earth electrode to any point in the earth continuity conductor in the completed installation and shall not exceed one ohm.

11.19.3 Polarity of Single Pole Switches:

A test shall be made to verify that every non linked, single pole switch is connected to one of the phase of the supply system.

11.20 COMPLETION CERTIFICATES:

All the above tests shall be carried out in presence of Engineer-in-Charge and the results shall be recorded in prescribed forms. Any default during the testing shall be immediately rectified and that section of the installation shall be re-tested. The completed test results forms shall be submitted to the Engineer-in-Charge for approval.

On completion of an electric installation a certificate shall be furnished by the contractor, countersigned by the certified supervisor under whose direct supervision the installation was carried out. This certificate shall be in a prescribed form as required by the local electric supply authority.

12. LIGHT FIXTURES

12.1 SCOPE

Scope of work under this section shall include supply inspection/ testing at suppliers/ manufacturer's premises at site, receiving at site, safe storage, transportation from point of storage to point of erection, erection and commissioning of light fittings, fixtures and accessories for back of

the house area including all necessary supports, brackets, down rods and painting etc. as required.

12.2 STANDARDS

The lighting and their associated accessories such as lamps, reflectors, housings, ballasts etc., shall comply with the latest applicable standards, more specifically the following:

Electric light fittings General and safety requirements lighting fittings with metal reflectors	IS - 1913. Industrial IS - 1777
Decorative lighting outposts	IS - 5077
Flood Lights	IS - 10322 (Part-5, Section 5)
Luminaries for street lighting	IS - 10322 (Part-3)
Bayonet lamp holders	IS - 1258
Bi-pin lamp holders for tubular- fluorescent lamps use in fluorescent light fittings	IS - 3323 Ballasts for IS - 1534
Starters for fluorescent lamp	IS - 2215
Ballast for HP MV lamps	IS - 6616
Capacitors for use in fluorescent, HPMV & LP sodium Vapour lamps circuits	
Tubular Fluorescent lamps	IS 2418 (Part I)
High pressure mercury vapour lamps	IS 9900 (Part I)
Tungsten filament general electric lamps	IS 418

12.3 LIGHT FITTINGS-GENERAL REQUIREMENTS

a) Fittings shall be designed for continuous trouble free operation under atmospheric conditions without reduction in lamp life or without deterioration of materials and internal wiring. Outdoor fittings shall be weather - proof and rain proof.

b) Fittings shall be so designed as to facilitate easy maintenance including cleaning, replacement of lamps/ starters etc.

- c) All fittings shall be supplied complete with lamps. All mercury vapor and sodium vapor lamp fittings shall be complete with accessories like ballasts, power factor improvement capacitors, starters, etc. Outdoor type fittings shall be provided with weather proof boxes.
- d) Fluorescent lamp fittings shall be complete with all accessories like ballasts, power factor improvement capacitors, starters capacitors for correction of stroboscopic effect.
- e) Each fitting shall have a terminal block suitable for loop-out connection by 1100 V PVC insulated copper conductor wires upto 4 sq.mm the internal wiring should be completed by the manufacturer by means of standard copper wire and terminated on the terminal block.
- f) All hardwires used in the fitting shall be suitably plated or anodised and passivated.
- g) Earthing Each lighting fitting shall be provided with an earthing terminal. All metal or metal enclosed parts of the housing shall be bonded and connected to the earthing terminal so as to ensure satisfactory earthing continuity throughout the fixture.
- h) Painting/Finish All surfaces of the fittings shall be thoroughly cleaned and degreased and the fittings shall be free from scale, rust, sharp-edges, and burrs.
- i) The housing shall be stove-enamelled or anodised as required. The surface shall be scratch resistant and shall show no sign of cracking or flaking when bent through 90 deg. over 12 mm dia mandrel.

12.3.1 Decorative Type Fittings:

Decorative fluorescent fittings shall be provided with mounting/housing channel cum reflectors of CRCA sheet steel. Stove enamelled diffusers or louvers shall be translucent white polystyrene.

12.3.2 Accessories for Light Fittings Reflectors:

The reflectors shall be made of CRCA sheet steel/aluminium /Silvered glass/Chromium plated sheet copper as required. The thickness of reflectors shall be as per relevant standards. Reflectors made of steel shall have stove enamelled/ vitreous enamelled/ epoxy coating finish. Aluminium used for reflectors shall be anodised/epoxy stove enamelled/ mirror polished. The finish for the reflector shall be as specified. The reflectors shall be free from scratches/ blisters and shall have a smooth and glossy surface having optimum light reflecting coefficient. Reflectors shall be readily removable from the housing for cleaning and maintenance without use of tools.

12.3.3 Lamp/Starters Holders:

Lamp holders shall have low contact resistance and shall be resistant to wear. They shall hold lamps in position under normal conditions of shock and vibration prevalent in an industrial atmosphere.

Lamp holders for fluorescent lamps shall be of spring loaded bi-pin rotar type. Live parts of the lamp holder shall not be exposed during insertion or removal of the lamp or after the lamp has been taken out.

Lamp holders for incandescent and mercury vapour lamps shall be bayonet type upto 100 W and Edison screw type for higher wattages.

Starter holders for fluorescent lamps shall be so designed that they are mechanically robust and shall be capable of withstanding shocks during transit, installation and use.

12.3.4 Ballasts:

The ballasts shall be designed for long life and low power loss. They shall be mounted using self- locking, anti -vibration fixtures and shall be easy to remove without dismantling the fittings. The enclosures shall be dust tight and non-combustible.

Ballasts shall be inductive, heavy duty type, filled with thermosetting, insulating, moisture repellent polyester compound filled under pressure or vacuum. Ballasts shall be provided with taps to set the voltage. The ballast wiring shall be of copper and they shall be free from dust.

Separate ballast shall be provided in case of multi-lamp fittings, except in case of 2 x 20 W fittings.

12.3.5 Starters:

Starters shall have bi-metal electrodes and high mechanical strength. Starters shall be replaceable without disturbing the reflector of lamps and without use of any tool. Starters shall have brass contacts and radio interference capacitor.

12.3.6 Capacitors:

The Capacitors shall have a constant value of capacitance and shall be connected across the supply of individual lamp circuits.

The capacitor shall have a value of capacitance so as to correct the power factor of its corresponding lamps circuit to 0.95 lag or better. Capacitor shall be hermetically sealed preferably in a metal enclosure to prevent seepage of impregnate and ingress of moisture.

12.3.7 Lamps:

Incandescent lamps shall be clear type unless otherwise specified. Fluorescent lamps shall be "day- light colour" type unless otherwise specified and shall be provided with features to avoid blackening of lamp ends.

Mercury vapour lamps shall be of high pressure, colour corrected type.

Lamps shall be capable of withstanding vibrations prevalent in an industrial atmosphere and connections at bend in wires and filament/electrodes shall not break under such circumstances. PL Lamps shall be energy effective compact single ended light sources in 9 to 11W ratings consisting of two narrow glass tubes welded together.

The lamp shall be complete with integral glow switch starter and capacitor and two pin electrical connections.

The lamp shall be colour rendered to give warm colour impression. The comptalux lamp shall have a long life and shall be energy efficient.

12.4 INSTALLATION

12.4.1 The light fixtures and fittings shall be assembled and installed in position complete and ready for service, in accordance with details, drawings, manufacturer's instructions and to

the satisfaction of the Engineer-in-Charge. Pendent fixtures specified with overall stem lengths are subject to change and shall be checked with conditions on the job and installed as directed. All suspended fixtures shall be mounted rigid and fixed in position in accordance with drawings, instructions and to the approval of Engineer-in-Charge. Fixtures shall be suspended true to alignment, plumb level and capable of resisting all lateral and vertical forces and shall be fixed as required.

12.4.2 All suspended light fixtures, fans etc, shall be provided with concealed suspension arrangement in the concrete slab/roof members. It is the duty of the Contractor to make these provisions at the appropriate stage of construction. Exhaust fans shall be fixed at location shown on drawings. They shall be wired to a plug socket outlet at a convenient location near the fan. All switch and outlet boxes, for fans and light fittings shall be bonded to earth. The recessed type fixtures shall not be supported into the false ceiling frame work. This shall have independent support from the socket of ceiling using conduit down rods/steel chain with provision for adjusting the level of fitting. Wires shall be connected to all fixtures through connector blocks. Wires brought out from junction boxes shall be encased in flexible pipes for connecting to fixtures concealed in suspended ceiling. The flexible pipes shall be checknut to the junction box with a brass bush. Double checknut at the fixture and flexible pipes, wherever used shall be of make and quality approved by Engineer-in-Charge.

13. EARTHING:

13.1 SCOPE

All the non-current carrying metal parts of electrical installation shall be earthed as per IS:3043. All equipment, metal conduits, rising main cable armour, switch gear, distribution boards, meters, all other metal parts forming part of the work shall be bonded together and connected by two separate and distinct conductors to earth electrodes. Earthing shall be in conformity with the provisions of Rules 32, 61, 62, 67 and 68 of IER 1956.

13.2 G.I. PIPE EARTH STATION

G.I. pipe shall be of medium class, 40 mm dia and 4.5 m length. Galvanising shall conform to relevant Indian Standards. G.I. pipe electrode shall be cut tapered at the bottom and provided with holes of 12 mm dia drilled not less than 7.5 cm from each other up to 2 M of length from bottom. The pipe electrode shall be as far as practicable embedded below permanent moisture level. Except where rock is encountered, pipes shall be driven to a depth of at least 4.5 mtr. Where rock is encountered at a depth of less than 2.5mtr the electrode may be buried inclined to the vertical and the inclinations shall not be more than 30 deg from the vertical. The pipe electrode shall be made of one piece. Earth leads to the electrode shall be laid in a heavy duty GI pipe and connected to the pipe electrode with brass bolts, nuts and washers. GI pipe shall be terminated in a wire meshed funnel. The funnel shall be enclosed in a masonry chamber of 450 mm x 450 mm dimensions. The chamber shall be provided with C.I. frame and CI inspection cover. The earth station shall also be provided with a suitable permanent identification label tag. The earth electrode shall conform to IS:3043 latest edition. The soil around the earthing electrode shall be treated to reduce the resistivity of the soil by filling the complete depth of electrode with alternative layers of charcoal and salt.

13.3 PLATE EARTH STATION

Plate electrodes shall be made of G.I./copper (CU) plate of 6.30mm/3.15mm thick and 600 x 600mm size. The plate shall be buried vertically in ground at a depth of not less than 4.5 meters to the top of the plate, the plate being encased in charcoal to a thickness of 300 mm all round. It is preferable to bury the electrode to a depth where subsoil water is present. Earth leads to the electrode shall be laid in a heavy duty GI pipe and connected to the plate electrode with brass bolts, nuts and washers. A GI pipe of not less than 20 mm dia shall be clamped with bolts vertically to the plate and terminated in a wire meshed funnel. The funnel shall be enclosed in a masonry chamber of 450 mm x 450 mm dimensions. The chamber shall be provided with GI frame and CI inspection cover. The earth station shall also be provided with a suitable permanent identifications label

tag. The earth electrode shall conform to IS: 3043 latest edition.

13.4 EARTHING CONDUCTORS

All earthing conductors shall be of high conductivity copper/or GI as specified and shall be protected against mechanical damage and corrosion. The connection of earth electrodes shall be strong secure and sound and shall be easily accessible. The earth conductors shall be rigidly fixed to the walls, cable trenches, cable tunnel, conduits and cables by using suitable clamps.

Main earth bus shall be taken from the main medium voltage panel to the earth electrodes. The number of electrodes required shall be arrived at taking into consideration the anticipated fault on the medium voltage network.

Earthing conductors for equipment shall be run from the exposed metal surface of the equipment & connected to a suitable point on the sub main or main earthing bus. All switch boards, distribution boards and isolators disconnect switches shall be connected to the earth bus. Earthing conductors shall be terminated at the equipment using suitable lugs, bolts, washers and nuts.

All conduits cable armouring etc., shall be connected to the earth all along their run by earthing conductors of suitable cross sectional area. The electrical resistance of earthing conductors shall be low enough to permit the passage of fault current necessary to operate a fuse/ protective device or a circuit breaker and shall not exceed 2 Ohms.

13.5 LOCATION FOR EARTH ELECTRODE:

Normally an earth electrode shall not be situated less than 2 M from any building. Care shall be taken that excavation for earth electrode may not affect the column footings or foundation of the building. Further the location shall be such where the soil has reasonable chance of retaining moisture as far as possible. Entrances, pavements and roadways are definitely to be avoided for locating the earth electrode.

13.6 EARTHING SYSTEM

Main earthing grid shall be of 50 x 6 GI strip laid in a grid formation. All other equipments shall be earthed to this strip. All panels, equipments and non-current carrying conductor shall be earthed through the strip/wire of suitable size.

Main panels	- 32 x 6
Main panels to sub panels	- 32 x 3
Sub panel to DB	- 25 x 3
DBs to sub DBs	- 8 SWG G.I.

Earthing system shall be mechanically robust and the joints shall be capable of retaining low resistance even after subjection to fault currents.

Joints shall be tinned, soldered and/or double rivetted. All the joints shall be mechanically and electrically continuous and effective. Joints shall be protected against corrosion.

13.7 TESTING

On the completion of the entire installation, the following tests shall be conducted:

- i) Earth resistance of electrodes.
- ii) Impedance of earth continuity conductors.
- iii) Effectiveness of earthing.

All meters, instruments and labour required for the tests shall be provided by the contractor. The test results shall be submitted in the prescribed tabulated form in triplicate to the Engineer- in-Charge for approval.

14. LIGHTNING PROTECTION SYSTEM

The lightning protection system shall comply with IS: 2309/ 1989 and Indian Electricity Act and Rules.

The lightning protection system shall be installed as indicated on the drawings or in case such is not available the contractor shall prepare one as per IS-2309/1989 and get the same approved by Engineer-in-charge.

15. ERECTION, TESTING AND COMMISSIONING

15.1 GENERAL

This section shall cover erection, testing and commissioning of all electrical equipment such as HT & L.T. Switchgear Transformers, earthing etc. to the satisfaction of the Engineer-in-charge, IS codes and authorities. Requisite number of copies and of test reports shall be furnished to the Engineer-in-charge and local authorities.

All such tests shall be carried out by the Contractor with his own instruments in the presence of the Engineer-in-charge. Necessary fees, if any to be paid to the authorities, shall be borne by the Contractor.

If special tests in addition to the standard given below are required by the Engineer-in-charge, the Contractor shall carry out the same at his own cost to the satisfaction of the Engineer-in-charge. Three copies of test certificates showing readings and details of tests carried out as above, duly signed and dated by the Contractor and the Engineer-in-charge's Representative shall be bound in neat folder and submitted to the Engineer-in-charge.

Upon completion of the installation or part thereof, the Contractor shall test the equipment installed under this contract in presence of the Engineer-in-charge. Tests shall include those specified in the Indian Electricity Rules and relevant Indian Standards as detailed below in addition to a through visual inspection to check compliance with this specification and to ensure that no part of the installation is damaged or otherwise defective.

15.2 Cable Work

Megger test of cores of cables before termination, after termination and before commissioning. Testing of the complete cable installation shall be as per CPWD General Specifications for Electrical Works (Part II-External) 1994 as amended upto date.

15.3 Earthing System

- a) Earth continuity for all earthing circuits.
- b) Earth electrode resistance.

15.4 Capacitor Banks

Insulation resistance with 500 VDC megger shall be carried out and test results recorded.

15.5 POLARITY TEST OF SWITCH

In a two wire installation a test shall be made to verify that all switches in every circuit have been fitted in the same conductor throughout and such conductor shall be labeled or marked for connection to the phase conductor or to the non-earthed conductor of the supply.

A verification of polarity shall be made and shall be ensured that all fuses and single pole control devices are connected in the live conductor only and for socket outlets that the wiring is correctly connected.

15.6 EARTH ELECTRODE RESISTANCE TEST

The earth resistance of the earth electrode is to be measured by an earth testing "Megger" provided with a direct reading ohm-meter. Readings obtained in ohms shall not be more than 1 ohms. If necessary, with the approval of Engineer-In-Charge additional electrode shall be provided away for the resistance area and linked to the electrode and inter-connecting tape/wire will be paid on unit or linear basis.

15.7 INSULATION RESISTANCE TEST.

Insulation resistance test should be made before the installation is permanently connected to the electric supply. The insulation resistance is to be measured by using an approved portable hand operated insulation resistance tester reading directly in ohms. The voltage of this tester

shall be about 500 volts. The insulation resistance to earth shall not be less than 1 mega ohm when measured with all fuse links in place, all switches closed and all poles or phase of wires are electrically linked.

15.8 EARTH CONTINUITY TEST

The earth continuity conductor should be tested for continuity to ensure that there is no breakage or loose connections in the system.

16. FIRE DETECTION SYSTEM**16.1 GENERAL**

a. Provide Fire Detection and Alarm System in accordance with NFPA 72 (Latest edition) and requirements of the Contract Documents. Provide a complete operable and intelligent analog addressable Fire Alarm and Detection System with associated communication and notification systems. The system shall include interfaces for foreign systems, as described herein and in accordance with the

Contract

Documents, and all applicable Codes, Standards and local Regulations, and be approved by Fire Services.

- b. All Plant furnished shall be new and the latest state-of-the-art, products of a single Manufacturer engaged in the manufacturing of analog fire detection devices for at least 5 years.
- c. All software licenses shall be supplied as part of the contract. Renewable & subscription license are not acceptable.
- d. The system shall be supplied, installed, tested, and approved by the local Authority Having Jurisdiction, and turned over to the Contractor in an operational condition.
- e. The subcontractor shall contract with a single supplier for the fire alarm Plant, engineering, programming, inspection and tests, and shall provide a "UL Listing Certificate" for the complete system.
- f. Drawings: The Drawings shall serve to indicate the general arrangement of the various Plant and their generic functional interconnections. However, layout of Plant, accessories, specialties, conduit system and wiring, are diagrammatic and do not necessarily indicate every required device, fitting, etc., required for the complete installation.

16.2 DRAWINGS & TECHNICAL SUBMITTALS

16.2.1 General:

Two copies of all submittals shall be submitted to the Engineer-in-Charge for review.

All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality. Equivalent compatible UL-listed equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met.

For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

16.2.2 Shop Drawings:

Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.

Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts. Show annunciator layout, configurations, and terminations.

16.2.3 Manuals:

Submit simultaneously with the shop drawings, complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets.

Wiring diagrams shall indicate internal wiring for each device and the interconnections between the items of equipment.

Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.

16.2.4 Software Modifications

Provide the services of a factory trained and authorized technician to perform all system software modifications, upgrades or changes. Response time of the technician to the site shall not exceed 4 hours.

Provide all hardware, software, programming tools and documentation necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications on- site.

16.2.5 Certifications:

Together with the shop drawing submittal, submit a certification from the major equipment manufacturer indicating that the proposed supervisor of the installation and the proposed performer of contract maintenance is an authorized representative of the major equipment manufacturer. Include names and addresses in the certification.

16.3 WARRANTY

All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance.

16.4 APPLICABLE STANDARDS AND SPECIFICATIONS

The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards, if applicable.

- A. National Fire Protection Association (NFPA) - USA: NFPA 13
Sprinkler Systems
 - NFPA 16 Foam/Water Deluge and Spray Systems
 - NFPA 17 Dry Chemical Extinguishing Systems NFPA
 - 17A Wet Chemical Extinguishing Systems

NFPA 2001 Clean Agent Extinguishing Systems NFPA 72
National Fire Alarm Code NFPA 76
Telecommunication Facilities NFPA 318 Clean
Room Applications

NFPA 101 Life Safety Code

NFPA 90A Air conditioning & ventilation system

B. Underwriters Laboratories Inc. (UL) - USA:

UL 268 Smoke Detectors for Fire Protective Signaling Systems

UL 864 Control Units for Fire Protective Signaling Systems 9th
Edition Listed UL 268 A Smoke Detectors for Duct Applications

UL 521 Heat Detectors for Fire Protective Signaling Systems UL 464
Audible Signaling Appliances

UL 38 Manually Actuated Signaling Boxes

UL 346 Waterflow Indicators for Fire Protective Signaling Systems

UL 1971 Visual Notification Appliances

UL 228 Door Holders NATIONAL BUILDING CODES IS CODES

The Video Display Terminal (VDT) shall comply with Swedish magnetic emission and X- radiation guidelines MPR 1990:10.

APPROVALS:

The system shall have proper listing and/or approval from the following nationally recognized agencies:

UL Underwriters Laboratories Inc (9th Edition)

The fire alarm control panel shall meet UL Standard 864 9th Edition (Control Units).

The system shall be listed by the national agencies as suitable for extinguishing release applications. The system shall support release of high and low pressure CO₂.

16.5 PRODUCTS (EQUIPMENT AND MATERIAL)

All equipment and components shall be new, and the manufacturer's current model. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approvals agency for use as part of a protective signaling system, meeting the National Fire Alarm Code.

All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.

All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.

16.6 CONDUIT AND WIRE

16.6.1 Conduit:

Conduit shall be in accordance with The National Electrical Code (NEC), local and state requirements.

Where required, all wiring shall be installed in conduit or raceway. Conduit fill shall not exceed 40 percent of interior cross sectional area where three or more cables are contained within a single conduit.

Cable must be separated from any open conductors of power, or Class 1 circuits, and shall not be placed in any conduit, junction box or raceway containing these conductors, per NEC Article 760-29.

Wiring for 24 volt DC control, alarm notification, emergency communication and similar power- limited auxiliary functions may be run in the same conduit as initiating and signalling line circuits. All circuits shall be provided with transient suppression devices and the system shall be designed to permit simultaneous operation of all circuits without interference or loss of signals.

Conduit shall not enter the fire alarm control panel, or any other remotely mounted control panel equipment or back boxes, except where conduit entry is specified by the FACP manufacturer.

Conduit shall be 3/4-inch (19.1 mm) minimum.

16.6.2 Wire:

All fire alarm system wiring shall be new.

Wiring shall be in accordance with local, state and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the fire alarm system. Number and size of conductors shall be as recommended by the fire alarm system manufacturer, but not less than 18 AWG (1.02 mm) for Initiating Device Circuits and Signalling Line Circuits, and 14 AWG (1.63 mm) for Notification Appliance Circuits.

All wire and cable shall be listed and/or approved by a recognized testing agency for use with a protective signalling system.

Fiber optics cable: 62.5/125 micrometers (multi-mode); 50/125 micrometers (multimode), or 9/125 micrometers (single mode). Maximum attenuation is 10 dB with 62.5/125 μ m cable, The single/Multimode fibre optics network shall be used for Fire detection, Digital Voice & Fire fighters Telephone for data transfer.(100 Mb). The Cable shall be laid underground from one block to another block underground with all accessories.

16.7 FINAL INSPECTION

At the final inspection, a factory-trained representative of the manufacturer of the major equipment shall demonstrate that the system functions properly in every respect.

16.8 INSTRUCTION

Instruction shall be provided as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.

The contractor and/or the systems manufacturer's representatives shall provide a typewritten "Sequence of Operation."

The entire Fire alarm System components shall be of same make and Listed. The data sheets of each equipment shall be submitted along with offer.

17. STREET LIGHTING**17.1 SCOPE**

The specifications cover the supply, installation, testing and commissioning of the following items:

- i. Street lighting poles complete with all accessories e.g. looping box, clamps MCBs and required hardwares etc.
- ii. Street lighting fixtures complete with all accessories e.g lamps, holders, choke, upto terminal box etc.
- iii. Wiring of street light fixtures.
- iv. Cable laying, earthing and inter connection. G.I. pipes for cable entry to looping box.
- v. Foundation of poles and erection.

All the items should be tested and installed as per the latest Indian standards specifications and all the sundry items such as clamps, bolts, nuts, racks, support miscellaneous wiring etc., required to make the installation complete shall be taken care while quoting the major items.

17.2 GALVANISED CONICAL POLES

Design: The Conical Poles shall be designed to withstand the maximum wind speed of 160 km / hr. The top loading i.e. area and the weight of fixtures are to be considered to calculate maximum deflection of the pole and the same shall meet the requirement of BS: 5649 / BSEN 40.

Pole Shaft: The pole shaft shall have circular cross section and shall be continuously tapered with single longitudinal welding. There shall not be any circumferential welding. The welding of pole shaft shall be done by Submerged Arc Welding (SAW) process.

All conical pole shafts shall be provided with the rigid flange plate of suitable thickness with provision for fixing foundation bolts. This base plate shall be fillet welded to the pole shaft at two locations i.e. from inside and outside. The welding shall be done as per qualified MMAW process approved by Third Party Inspection agency.

Door opening: The conical poles shall have door of approximate 500 mm length at the elevation of 500 mm from the Base plate. The door shall be vandal resistance and shall be weather proof to ensure safety of inside connections. The door shall be flush with the exterior surface and shall have suitable locking arrangement. There shall also be suitable arrangement for the purpose of earthing.

The pole shall be adequately strengthened at the location of the door to compensate for the loss in section.

Material: Conical Poles shaft HT steel Conforming to grade S355JO, Base Plate Fe 410 conforming to IS 226 / IS 2062, Foundation Bolts EN 8 Gr. As per IS 1367

Welding: The welding shall be carried out conforming to approved procedures duly qualified by third party inspection agency. The welders shall also be qualified for welding the conical shafts.

Pole sections: The conical poles shall be in single section (upto 11 mtr). There shall not be any circumferential weld joint.

Galvanization: The poles shall be hot dip galvanised as per IS 2629 / IS 2633 / IS 4759 standards with minimum coating thickness of 65 micron. The galvanizing shall be done in single dipping.

Manufacturing: The manufacturing unit shall be ISO 9001: 2000 & ISO 14001

Pole Testing Facility: The manufacturing unit shall have in-house pole testing facility for validation of structural design data. The pole testing facility shall conform to BS EN 40-3-2-2000 part 3-2.

Fixing Type: The conical poles shall be bolted on a pre-cast foundation with a set of foundation bolts for greater rigidity.

17.3 ERECTION OF POLE

While loading, transporting, unloading and erecting the poles care shall be taken so that the poles do not get bent. Out of shape and where necessary such defects shall be rectified before the poles are erected in position. The poles shall be erected in plumb line and correct level as indicated in the drawing and to the satisfaction of the Engineer-in-charge. They shall be kept in this position with the help of manila

ropes until the foundation are constructed (for a minimum period of 10 days) and the back filling is complete. Foundation shall be made with reinforced cement concrete (1:2:4) and not less than 200 mm thick all round. The pole base plate shall be fixed over 150 mm thick concrete bed. Foundation shall be continued upto 300 mm or more above ground level as per location of the pole to avoid ingress of water logging etc. The foundation shall be tapered suitably into a collar. The excavated portion shall be filled back with earth and consolidated. The cement concrete foundations shall be cured properly by covering the same with water soaked or moist gunny bags at least two weeks before loading the pole.

17.4 ERECTION OF LIGHT FIXTURES

Each light fixture shall be connected to the supply through MCB of a suitable rating mounted in the looping box. The fitting shall be fixed to the pole properly and securely.

17.5 WIRING OF LIGHT FIXTURES

The wiring of lighting fixtures from terminal block by means of 2.5 Sq.mm PVC insulated two core copper conductor through a suitable rated MCB and neutral. Cost of two core connecting cable from junction box to lighting fixture and earth wire complete with connections are included in the quoted rate.

17.6 CABLING WORKS

All cable installation work shall be done as per relevant clauses of section cable work.

17.7 TESTS

The following tests shall be carried out before handing over the installation, tests on all fittings and cables as per IS specification:

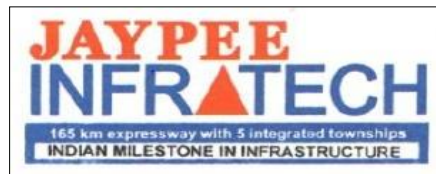
- Meggar test
- Continuity test
- Polarity test and phase sequence test

VOLUME - III

Bill Of Quantity (BOQ)

**Name of Work : Electrical Works for Multistoried Group Housing Project,
"KASA ISLES", for Towers KSI-1, 2 & 3 (2B+G+23) and KSI-4 & 5 (2B+G+25)
of Cluster B-44 at Jaypee Wish-Town, Sector-129, Noida (UP)**

Jaypee Infratech Limited
J- Block, Sector 128, Noida – 201304
Uttar Pradesh, India



PREAMBLE TO BILL OF QUANTITIES

1. This Bill of Quantities ("BOQ") shall be read in conjunction with all Volumes of the tender documents as listed out at Clause 1.1 of the Contract Agreement.
2. Rates shall include the cost of all labour, materials, tools, plants and machinery, equipment, tower cranes/hoists, all form of works, steel scaffoldings, transportation and wastages etc. and testing of materials with Contractor's testing appliances (as required), all other taxes, duties, levies, royalties, any other statutory obligations, Electricity, water, Contractor's overheads & profit etc. Only GST shall be paid extra, as applicable.
3. The items of work set out herein which are further detailed in the work order, shall be carried out as per the approved drawings, specifications and directions of the Engineer-in-charge of Jaypee Infratech Limited (hereinafter called as JIL).
4. The Contractor shall be deemed to have studied the drawings, specifications and details of work to be completed within the time schedule and to have acquainted itself with the conditions prevailing at Site. The quoted rates shall be applicable for all works in any shape/size/section and desian etc.
5. The quantities shown against various items, as provided by JIL, are estimated and provisional and are given to provide a common basis for bidding. Any increase or decrease in the quantities shall not form the basis for alteration of the rates quoted and accepted. The basis of payment will be actual quantities of work ordered and carried out.
6. In cases where the specifications given in the Description of the item of work in BOQ are found wanting, the CPWD Specifications-2019 (with up-to-date correction slips) shall be followed; and where not specified, specifications of the latest edition of relevant IS codes shall be applicable. In case of any ambiguity in interpretation. JIL's decision shall be final and bindina.
7. The rates and the prices shall hold good for all heights/ depths leads, lifts and levels from foundation level to the Top Roof Structure, working in all conditions including in/under water, liquid mud, foul conditions etc. unless otherwise specifically stated against an item in the BOQ.
8. Materials that will be supplied free of cost by JIL, will be delivered to a single designated location at the Site. Transportation within the Site, re-handling, storage and all other costs shall be to the account of the Contractor. JIL reserves the right to withdraw any part of the Works from the scope of work of the Contractor, and to do or engage one or more agencies to perform for any item or part of the scope of work, as it deems necessary. Any action taken under this Clause 8 shall not constitute a breach of the Contract.

9. Rates include all costs for disposal of surplus earth within site as per instructions of Engineer-in-Charge and any dismantled R.C.C./Cement Concrete rubbish or malba etc. outside the site premises; all form work, removal of labour, hutment, any temporary structure etc., demobilization from site/any premises provided by JIL. Nothing extra shall be payable on any such account.
10. The anti-termite treatment shall be carried out through an approved and registered agency and strictly in accordance with IS: 6313 Part-II: 1981. The specialized agency shall furnish the guarantee in the name of JIL for a period of not less than 10 years from the Completion Date. Notwithstanding this, the responsibility of the effectiveness of the treatment shall be entirely and unqualifiedly be of the main Contractor of the work.
11. The water-proofing treatment shall be carried through an approved and registered agency and strictly in accordance with manufacturer specifications. The specialized agency should furnish the guarantee (through the manufacturer) in the name of JIL for a period of not less than 10 years from the Completion Date. Notwithstanding this, the responsibility for the effectiveness of the treatment shall be entirely and unqualifiedly be of the Contractor.
12. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
13. All materials samples to be submitted and got approved from JIL before execution of work.
14. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of Work.
15. The method of measurement of completed work for payment shall be in accordance with the Technical Specifications & IS Codes.
16. Errors will be corrected by JIL for any arithmetic errors in computation or summation in accordance with this clause:
 - 16.1. only for unit price contracts, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of JIL there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected:
 - 16.2. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - 16.3. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to sub-clauses 16.1 and 16.2 above.

INTERNAL ELECTRICAL WORKS FOR THE KASA ISLES, AT JAYPEE GREENS, NOIDA(U.P)		
PACKAGE-I (KSI 1,2,3,4,5)		
GENERAL TERMS		
1	The work to be executed by approved "A" class electrical contractor only valid upto date. The copy of above licence shall be provided along with Tender.	
2	B & L form duly filled and signed shall be provided along with handing over of each unit/area as per SEB/PVVNL requirement.	
3	The items given in this schedule are provisional. The tenderer shall be paid for the actual quantity of work executed and measured at the site at the rates tendered. The client reserves the right to increase or decrease any of the quantities, or omit totally any item of work. Any claim by tenderer on these accounts will not be entertained.	
4	All the items of work given in the schedule of quantities shall be executed strictly in accordance with the latest Indian standards, specifications and the requirements of the electricity supply authority, read in conjunction with the relevant drawings and specifications.	
5	The tenderer should visit the site and shall satisfy himself as to the conditions under which the work is to be performed/executed. He shall also check and ascertain the location of any existing structure or equipment or any other situation which may affect the work at any stage. No extra claim as a consequence of ignorance or on ground of insufficient description will be allowed at any stage/date.	
6	All equipment, and material shall be ISI approved or as per Relevant IS whichever applicable.	
7	All approval shall be obtained from owner's site representative/consultant/Project manager before starting of execution.	
8	All equipment and material shall be inspected at manufacturer's works as per relevant IS by the client or his authorised representative before dispatch. However, client reserves the right of waiver of inspection for any material if he feels so but contractor shall be responsible for the quality of material as supplied at all time and material can be inspected at any time.	
9	All shop drawings, vendor's drawings shall be approved by the Owner's site representative/consultant/Project manager before fabrications.	
10	All testing and commissioning shall be as per relevant IS for equipments and as per IS:732 for the installation. All test records shall be maintained and submitted to Owner's representative.	
11	All materials manufacturer's Test certificates, O&M manuals, data sheets shall be submitted along with supply.	
12	The deduction of already executed item/stage i.e. Slab conduit, wall conduit etc. shall be made in each item wherever applicable.	
13	any item if supplied by client shall be recovered from payments of contractor.	
14	All safety Norms shall be followed during execution of work /stage.	
GRAND SUMMARY		
BILL OF QUANTITIES		
INTERNAL ELECTRICAL WORKS FOR THE KASA ISLES, AT JAYPEE GREENS, NOIDA(U.P)		
S.NO	Description	Amount (RS)
1	Super structure	-
2	Basement	-
3	fire alarm & detection	-
		-
	GRAND TOTAL	-

BILL OF QUANTITIES					
INTERNAL ELECTRICAL WORKS FOR THE KASA ISLES, AT JAYPEE GREENS, NOIDA(U.P)					
SUBHEAD :-INTERNAL ELECTRICAL WORK FOR TOWERS					
PACKAGE-I (KSI 1,2,3,4,5)					
S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
	General notes:-				
	The work to be executed by approved "A" class electrical contractor only valid upto date. The copy of above licence shall be provided along with Tender.				
	B & L form duly filled and signed shall be provided along with handing over of each unit/area as per SEB/PVVNL requirement.				
a	The items given in this schedule are provisional. The tenderer shall be paid for the actual quantity of work executed and measured at the site at the rates tendered. The client reserves the right to increase or decrease any of the quantities, or omit totally any item of work. Any claim by tenderer on these accounts will not be entertained.				
b	All the items of work given in the schedule of quantities shall be executed strictly in accordance with the latest Indian standards, specifications and the requirements of the electricity supply authority, read in conjunction with the relevant drawings and specifications.				
c	The tenderer should visit the site and shall satisfy himself as to the conditions under which the work is to be performed/executed. He shall also check and ascertain the location of any existing structure or equipment or any other situation which may affect the work at any stage. No extra claim as a consequence of ignorance or on ground of insufficient description will be allowed at any stage/date.				
d	All equipment, and material shall be ISI approved or as per Relevant IS whichever applicable.				
e	All approval shall be obtained from owner's site representative/consultant/Project manager before starting of execution.				
f	All equipment and material shall be inspected at manufacturer's works as per relevant IS by the client or his authorised representative before dispatch. However, client reserves the right of waiver of inspection for any material if he feels so but contractor shall be responsible for the quality of material as supplied at all time and material can be inspected at any time.				
g	All shop drawings, vendor's drawings shall be approved by the Owner's site representative/consultant/Project manager before fabrications.				
h	All testing and commissioning shall be as per relevant IS for equipments and as per IS:732 for the installation. All test records shall be maintained and submitted to Owner's representative.				
i	All materials manufacturer's Test certificates, O&M manuals, data sheets shall be submitted along with supply.				
j	The deduction of already executed item/stage i.e. Slab conduit, wall conduit etc. shall be made in each item wherever applicable.				
k	any item if supplied by client shall be recovered from payments of contractor.				
l	All safety Norms shall be followed during execution of work /stage.				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
	General requirements for point wiring				
1	All wiring shall be of 1100 volts grade.				
2	All wiring shall be FR PVC insulated unsheathed, flexible, copper conductor, single or multi core as called for.				
3	Earth wiring shall also be FR PVC insulated unsheathed, flexible, copper conductor, single core as called for.				
4	Size of earth wire shall be the same as of the phase conductor or as specified otherwise.				
5	All Switches & Sockets shall be of modular design complete with modular plate and suitable sized GI/ moulded boxes as called for and shall be suitable upto 250V, AC supply.				
6	The recessed Switches and Socket outlet boxes shall be of 1.2 MM thick pre-galvanized sheet and of the same make / manufacturer as of the switches and sockets. Local make boxes are not to be used.				
7	The surface mounted Switches & Sockets outlet boxes shall be moulded and of the same make / manufacturer as of the Switches & Sockets.				
8	PVC Conduits shall be of FR type and shall be of minimum wall thickness shall be IS. (Rigid Heavy duty Conduit) unless otherwise specified. Company specified adhesive to be used for joining/ fixing of PVC conduits				
9	GI and MS Conduits shall be of min. 16 G thickness . Metallic conduit work shall be complete with proper threads, check nuts/ lock nuts etc.				
10	Flexible conduits, where ever required, shall be of heavy duty and complete with couplers.				
11	Minimum diameter of the conduit to be used shall be 20mm . Conduit less than 20mm dia is not to be used unless otherwise specified.				
12	Conduiting may be concealed or surface mounted (Exposed) as the case may be.				
13	Circuit cum point wiring for light points, ceiling fan points & exhaust fan points, 6A raw light plug sockets, 16A raw power Sockets, Raw moulded socket outlets shall include:				
a	Circuit Wiring (Phase & Neutral) of required length from DB / board to switch.				
b	Point Wiring (Phase & Neutral) of required length from switch board to point.				
c	Insulated Green Colour earth wire for earthing of light fixture, switch and socket outlet box and 3rd pin of socket. Each circuit will have a separate earth wire from the DB.				
d	Conduits, bends, junction boxes, pull boxes and GI pull wire as required.				
e	Switch / Switches/ socket outlets/electronic fan regulator/dimmer with GI outlet boxes/ moulded outlet boxes of suitable sizes, heavy duty 'MS' hexagonal hook box with hook for ceiling fans/modular blanker plates.etc				
f	All hard ware and civil work etc.				
14	Circuit cum point wiring for UPS points shall include:				
a	Circuit Wiring (Phase & Neutral) of required length.				
b	Point Wiring (Phase & Neutral) of required length.				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
c	Insulated green colour earth wire for socket outlet box and furniture and a separate green colour earth wire with yellow band for 3rd pin of the socket outlet. Each circuit will have separate earth wires for 3rd pin earthing and box/ furniture earthing from the DB.				
d	Conduits, bends, junction boxes, pull boxes and GI pull wire as required.				
e	Switch / Switches/ socket outlets with GI/ moulded outlet boxes of suitable sizes as called for.				
f	All hard ware and civil work etc.				
15	Wiring terminations shall be made using proper sized thimbles/ lugs.				
16	All circuit & point wiring shall be colour coded & shall have ferruling on either end for circuit identification.				
17	The rates shall include material & labour for necessary length of circuit and point wiring, earth wiring, rigid and flexible conduiting, bends, junction boxes, pull boxes, screws, washers, check nuts, couplers, saddles, hangers supports, GI pull wire, civil work comprising chipping, cutting chases, fixing conduits & making good or surface clamping of conduit work as the case may be, modular switches, socket outlets, Electronic fan regulators surface or recessed outlet boxes as the case may be, ceiling rose, rigid and flexible conduit (PVC), connectors and terminal blocks of proper rating etc. & sleeves etc. including lugs/ thimbles for terminations . Fan points wiring shall include switch as well as electronic speed regulator, and fan hook box with fan hook.Wiring shall include conduiting and wiring (Phase, Neutral, Earth) of light points/ fan points/ UPS and raw sockets outlets of required length from the distribution board via switch to the point				
18	Cost of circuit cum point wiring shall include everything and all items and accessories to make the job complete in all respects.				
	Important Notes:				
a	For Indoor Units of VRV System, 6A or 16A switched socket outlets to be used depending upon the load.				
b	For 1 Phase window AC Units, moulded socket outlets to be used.				
c	For 1 Phase & 3 Phase Split Units, moulded socket outlets to be used (weather proof). Wiring and conduiting upto outdoor unit to be considered in the point rate.				
1.0	For Light Points, Ceiling Fan Points, Exhaust Fan Points & 6A Socket Outlet Points:				
i)	<u>For switch Controlled light points.</u>				
ii)	<u>For switch Controlled Ceiling Fan points.</u>				
iii)	<u>For switch Controlled Exhaust Fan points.</u>				
iv)	<u>For 6A switched socket outlets.</u>				
v)	<u>For MCB Controlled Light points.</u>				
vi)	Wiring with 2x1.5 sqmm + 1x1.5 sqmm (earth wire).				
vii)	Wiring of required length from DB to point via switch for switch controlled points.				
viii)	Modular switch & plate for light points				
ix)	Modular switch & plate and electronic fan regulator for Ceiling Fan points				
x)	Modular switch and plate for Exhaust Fan point and modular unswitched socket near Exhaust Fan				
xi)	Modular 6A, 5 pin switched socket outlets				
xii)	Suitable sizes of GI outlet boxes.				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
xiii)	PVC conduiting of required length complete with bends, junction boxes and pull boxes.				
xiv)	Surface or recessed conduiting including civil work like chase cutting and making good as required (as the case may be).				
xv)	PAYMENT TERMS shall be as follows(100%) (for wiring items)				
a.	Slab conduiting -15%				
b.	Wall conduiting-15%				
c.	Wiring-35%				
d.	Fixing of switches-20%				
e.	Testing & Commisioning-10%				
f.	Handing Over-5%				
	PAYMENT TERMS (100%) (panels ,meter boards,rising mains,major equipments etc.)				
a.	Supply -50%				
b.	Installation-35%				
c.	Testing & Commisioning-10%				
d.	Handing Over-5%				
	PAYMENT TERMS (100%) (for DB items)				
a.	Supply -30%				
b.	Installation-55%				
c.	Testing & Commisioning-10%				
d.	Handing Over-5%				
	PAYMENT TERMS (100%) (for Free for fixing items)				
a.	installation - 85%				
b.	Testing & Commisioning-10%				
c.	Handing over -5%				
A.1	Wiring for the following light points with 3 x 1.5 sq. mm FR PVC insulated copper conductor 1100 volts grade stranded flexible wires of approved make in consealed or surface PVC conduit heavy duty .The rates should include the modular switch ,modular switch plate ,modular GI box of 1.20 mm thick and approved make,earthing of Switch box and Point.				
A.1.1	Primary point as above.	Pt.	11435		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	11435		
c	wiring	Pt.	11435		
d	sheet & switches etc.	Pt.	11435		
e	testing & commissioning	Pt.	11435		
f	handing over	Pt.	11435		
A.1.2	Same as item above but secondary point looped with primary point(with out controlling switch)	Pt.	389		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	389		
c	wiring	Pt.	389		
d	sheet & switches etc.	Pt.	389		
e	testing & commissioning	Pt.	389		
f	handing over	Pt.	389		

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
A.2	Wiring for the <u>twin control light points</u> with 1.5 sq. mm FR PVC insulated copper flexible wires 1100 volt grade in concealed or surface PVC conduit of Heavy duty including providing and fixing of 2 nos 6Amp 2 way modular switches, modular switch plates ,GI modular switch plates etc. complete as required.the rates shall include the earthing of point/fixture and switch boxes and circuit wiring from DB to switch boards etc. complete				
A.2.1	point as above.	Pt.	304		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	304		
c	wiring	Pt.	304		
d	sheet & switches etc.	Pt.	304		
e	testing & commissioning	Pt.	304		
f	handing over	Pt.	304		
A.3	Wiring for the following light points with 3 x 1.5 sq. mm FR PVC insulated copper flexible wires in concealed or surface MS conduit of min 1.6 mm thick . Light point controlled by SPMCB provided in the DB (Cost of MCB not to be included here). (LIFT SHAFT)				
A.3.1	Primary point controlled by one SPMCB.	Pt.	15		
A.3.2	Same as item above but secondary point i.e. point to be looped with primary point on alternate floors	Pt.	411		
A.3.3	Supply & Wiring for the following light points with 3 x 1.5 sq. mm FR PVC Insulated copper flexible wires 1100 v grade of approved make in concealed or surface MS Conduit of minimum 1.6 mm thick. Light point controlled by SPMCB provided in the DB (Cost of MCB not to be included here). (COMMON AREA)				
A.3.4	Primary point controlled by one MCB.	Pt.	233		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	233		
c	wiring	Pt.	233		
d	sheet & switches etc.	Pt.	233		
e	testing & commissioning	Pt.	233		
f	handing over	Pt.	233		
A.3.5	Same as item above but secondary point i.e. point to be looped with primary point	Pt.	1505		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	1505		
c	wiring	Pt.	1505		
d	sheet & switches etc.	Pt.	1505		
e	testing & commissioning	Pt.	1505		
f	handing over	Pt.	1505		
A.4	Wiring for Call Bell points with 3 x 1.5 sq. mm FR PVC insulated copper conductor 1100 volts grade stranded flexible wires of approved make in concealed or surface PVC conduit heavy duty .Rates shall include modular bell push ,modular switch plate and modular switch box etc of approved shade/make & quality.		568		
		no.			
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	568		
c	wiring	Pt.	568		
d	sheet & switches etc.	Pt.	568		
e	testing & commissioning	Pt.	568		
f	handing over	Pt.	568		

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
A.5	Wiring for Ceiling fan point with 3 x 1.5 sq. mm FR PVC insulated copper conductor 1100 volts grade stranded flexible wires of approved make in concealed or surface PVC conduit heavy duty .Rates shall include modular switch ,Stepped type fan regulator ,modular switch plate and modular switch box,Haxagonal fan Box etc of approved shade/make & quality.	no.	2636		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	2636		
c	wiring	Pt.	2636		
d	sheet & switches etc.	Pt.	2636		
e	testing & commissioning	Pt.	2636		
f	handing over	Pt.	2636		
A.6	Supply and fixing in position 1 no.25 mm dia PVC conduit heavy duty min 2.5 m long including one no.JB at ceiling level along with AC indoor unit and one no. JB &16Amp socket at switch box level.JB shall be provided with Polycarbonate/Hylum sheet cover of min 3 mm thick of approved shade matching with paint shade of all .The item is meant for IDU of AC.	set			
A.7	wiring for 230V single phase and neutral 6/16A switched socket wired with 2x2.5 and 1x1.5 sqmm FR PVC insulated copper flexible wire 1100 V grade in concealed or surface PVC conduit heavy duty .Rates shall include providing and fixing of 6/16 Amp modular switch,socket, modular switch plate and switch box of required size ,make and quality complete with circuit and earth wiring etc. complete as required.for looped gyser point (looped from AC point)	no.			
A.8	wiring for 230V single phase and neutral 6/16A switched socket wired with FR PVC insulated copper flexible wire 1100 V grade in concealed or surface PVC conduit heavy duty .Rates shall include providing and fixing of 6/16 Amp modular switch,socket, modular switch plate and switch box of required size ,make and quality complete with circuit and earth wiring etc. complete as required.Two no socket outlets looped on one circuit.				
A.8.1	Primary point for 6/16 amps switched socket outlet with (2 x 4 sqmm + 1 x 2.5 sqmm) copper conductor. for A.C	no.	2048		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	2048		
c	wiring	Pt.	2048		
d	sheet & switches etc.	Pt.	2048		
e	testing & commissioning	Pt.	2048		
f	handing over	Pt.	2048		
A.8.2	Same as item above but secondary point looped with primary point with (2 x 2.5 sqmm + 1 x 1.5 sqmm) copper conductor. for gyser	no.	1796		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	1796		
c	wiring	Pt.	1796		
d	sheet & switches etc.	Pt.	1796		
e	testing & commissioning	Pt.	1796		
f	handing over	Pt.	1796		
A.9	wiring for 230V single phase and neutral 6/16A switched socket wired with 2x2.5 and 1x1.5 sqmm FR PVC insulated copper flexible wire 1100 V grade in concealed or surface PVC conduit heavy duty .Rates shall include providing and fixing of 6/16 Amp modular switch,socket, modular switch plate and switch box of required size ,make and quality complete with circuit and earth wiring etc. complete as required. General power Plug	no.	922		
a	slab conduiting	Pt.			

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
b	wall conduiting	Pt.	922		
c	wiring	Pt.	922		
d	sheet & switches etc.	Pt.	922		
e	testing & commissioning	Pt.	922		
f	handing over	Pt.	922		
A.10	Wiring for 230 volts single phase and neutral 6/16 amps switched socket outlet with following FR PVC insulated copper conductor 1100 volts grade stranded flexible wires in concealed or surface mounted MS conduit including providing and fixing of 6/16 amps 6 pin switched sockets ,modular switch plates,modular switch box of approved make and design.(Lift shaft) in MS Conduit.				
A.10.1	Primary point for 1 No. 16 amps switched socket outlet with (2 x 2.5 sqmm + 1 x 1.5 sqmm) copper conductor wire 1100 V grade	no.	15		
A.10.2	Same as item above but secondary point looped with primary point with(2 x 2.5 Sq.mm +1 x1.5 Sq.mm) copper conductor on alternate floors	no.	411		
A.11	Wiring for 230 volts single phase and neutral 6 amps switched socket outlet with 1.5 sq. mm FR PVC insulated copper conductor 1100 volts grade stranded flexible wires in recessed or surface PVC conduit heavy duty .The rates shall includes the Modular switch,socket ,modular switch plate ,switch box of approved size,design and quality complete as required.				
A.11.1	Primary point for 1 No. 6 amps switched socket outlet with (2 x 1.5 sqmm + 1 x 1.5 sqmm) copper conductor looped with nearest light point.	no.	7898		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	7898		
c	wiring	Pt.	7898		
d	sheet & switches etc.	Pt.	7898		
e	testing & commissioning	Pt.	7898		
f	handing over	Pt.	7898		
A.11.2	Secondary point for 1 No. 6 amps switched socket outlet with (2 x 1.5 sqmm + 1 x 1.5 sqmm) copper conductor in existing Modular switch box complete as required.(Length of point shall be not more than 900mm)	no.	673		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	673		
c	wiring	Pt.	673		
d	sheet & switches etc.	Pt.	673		
e	testing & commissioning	Pt.	673		
f	handing over	Pt.	673		
A.12	Supply & Wiring for Exhaust fan points with 1.5 sq. mm FR PVC insulated copper conductor 1100 volts wires in concealed or surface PVC conduit heavy duty .The Rates shall include the modular switch of appropriate rating near switch board and 3 pin 6 amp ceiling rose of approved quality near exhaust fan complete in all respect.	Pt.	1804		
a	slab conduiting	Pt.			
b	wall conduiting	Pt.	1804		
c	wiring	Pt.	1804		
d	sheet & switches etc.	Pt.	1804		
e	testing & commissioning	Pt.	1804		
f	handing over	Pt.	1804		

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
A.13	Supply & Wiring for 230V SPN 16 Amp polycarbonate industrial 3pin (IP-65/66) socket outlet with 16 Amp DP MCB in a polycarbonate enclosure of approved size,design with 2x 4.0 sq. mm & 1x 2.5 sqmm FR PVC insulated copper conductor 1100 volts wires in concealed or surface PVC conduit heavy duty .The Rates shall include the modular switch of appropriate rating on main switch near Door and 20 amp multi socket with modular switch plate ,modular switch box of approved quality complete in all respect.	Pt.			
A.14	Supply & Wiring for 230V SPN 25/32 Amp polycarbonate industrial 3pin (IP-65/66) socket outlet with 32 Amp DP MCB in a polycarbonate enclosure of approved size,design with 2x 6.0 sq. mm & 1x 4.0 sqmm FR PVC insulated copper conductor 1100 volts wires in concealed or surface PVC conduit heavy duty .The Rates shall include the modular switch of appropriate rating on main switch near Door and 32 amp multi socket with modular switch plate ,modular switch box of approved quality near exhaust fan complete in all respect.	Pt.			
A.15	Supply & Wiring for 415V TPN 25/32 Amp polycarbonate industrial 3pin (IP-65/66) socket outlet with 32 Amp FP MCB in a polycarbonate enclosure of approved size,design with 4x 4.0 sq. mm & 2x4.0 sqmm FR PVC insulated copper conductor 1100 volts wires in concealed or surface PVC conduit heavy duty .The Rates shall include the modular switch of appropriate rating on main switch near Door and 32 amp multi socket with modular switch plate ,modular switch box of approved quality complete in all respect.	Pt.			
A.16	Supply & Wiring for 230V SPN 25/32 Amp polycarbonate industrial 3pin (IP-65/66) socket outlet with 32 Amp DP MCB in a polycarbonate enclosure of approved size,design with 2x 6.0 sq. mm & 1x 4.0 sqmm FR PVC insulated copper conductor 1100 volts wires in concealed or surface PVC conduit heavy duty .The Rates shall include the modular switch of appropriate rating on main switch near Door and 32 amp multi socket with modular switch plate ,modular switch box of approved quality complete in all respect.	Pt.			
A.17	Providing & fixing in position the following heavy duty PVC conduits concealed or surface as called for including necessary junction boxes & all other accessories ie.bends,sockets,hooks etc. with Junction cover of Hylum sheet 3 mm thick of approved shade as required.				
a	40 mm dia	RM			
b	32 mm dia	RM	4370		
c	25mm dia	RM	4360		
d	20 mm dia	RM			
	Total carried over to summary				
	Conduiting & wiring for submain				
	Supply ,installation,testing,commissioning of all submain system shall includes providing & fixing of following:-				
	All necessary specials & fittings,bushes etc.				
	Approved colour plates for inspection,junction and outlet boxes .				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
	2 mm thick junction boxes and outlet boxes with min 3 mm thick hylum sheet cover of approved size,design and shade fixed with brass screw & washers etc.				
	all fixing accessories such as clips,hooks ,nailsscrew ,washers,saddles with base etc.				
	necessary chase cutting, embedding the conduits with accessoriesin wall floors etc.				
	providing 14SWG pull wire as required.				
B.1	Providing & fixing in position the following heavy duty MS flexible conduits concealed or surface as called for including necessary junction boxes & all other accessories ie.bends,sockets,hooks,couplers etc. with Junction cover of Hylum sheet 3 mm thick of approved shade as required.				
a	40 mm dia	RM			
b	32 mm dia	RM	618		
c	25mm dia	RM	618		
	wiring for submain & mains				
	The rates shall also includes the following :-				
	effective ,adequate and proper connections with lugs,ferrules etc at termination.				
	providing Necessary Junction box covers ,painting of boxes etc.				
	necessary clamps ,nut bolts ,screws,washers etc.				
	Approved colour plates for inspection,junction and outlet boxes .				
	excavation,sand cushioning,brick covering etc in case of laying underground.				
	All material shall be ISI marked/approved with Tie ,tags,dressing etc.				
	necessary chase cutting, embedding the conduits with accessories in wall floors etc.				
	All cutouts/sleeves shall be sealed with fire redardent seales as per specifications.				
C.1	Supply & laying of the following FR PVC insulated flexible copper conductor 1100 Volt grade wire complete as per specification in existing conduit including testing and commissioning complete.				
C.1.1	Copper Wire (2 x 6 +1 x 2.5) sq.mm (1BHK,invertor & machine room)	RM	40		
C.1.2	Copper Wire (2 x 10 +1 x 4) sq.mm meter board to each DB 2 BHK & 3BHK	RM	4385		
C.1.3	Copper Wire (4x10 +2 x 4) sq.mm for 3BHK+W,4BHK& above,3 phase DB in common area	RM	4338		
C.1.4	Copper Wire (4x16 +2 x 4) sq.mm for 5BHK& above,3 phase DB in common area	RM			
C.1.5	Supplying,laying termination,testing,commissioning of following pair PVC insulated,sheathed and tapped tinned copper telephone unarmoured cable in existing conduit complete as required.				
a.	2pair 0.61 mm twin twisted pair tinned copper wire	Rm	8580		
	Total carried over to summary				
D	Distribution boards ,Panels,Meter boards,risng mains				
	The rates for the distribution boxes shall includes the following				
	The rigid sheet steel enclosure of approved size shape,painted or powdercoated.				
	cubical type 14Guage,CRCA sheet steel enclosed & type-3b modular construction				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
	complete with interconnections and distribution bus bars alongwith connection strips				
	Proper bonding to earth as per standard				
	painting/markng on breakers and DB,the location they serve,providing on each panelits circuit diagram duly laminated and pasted .				
	providing cable clamps & supportswithin DB alley.				
	TPN MCCB/ACB means TP MCB with neutral Link of same capacity				
	All MCCB shall be of minimum 10KA breaking capacity or as advised .				
	breaking capacity of MCCB in each panel shall be as mentioned in BOQ/specifications.MCCB upto 250Amp rating shall be thermomagnetic release and as per BOQ.				
	The panels/Busduct/rising mains shall be powder coated with siemensgray paint shade no.RAL-7032 or as specified.				
	Degree of protection for following type of DB & panels enclosure shall be as per IS:13947-1993				
	i. IP -42 for indoor applications				
	ii. IP-55 for outdoor applications				
	All MCCB shall be provided with operating mechanism for door interlock.				
	current density of aluminium shall be 1 sqmm for 1.0 amps considering all derating for rated current of busbars.				
	GI earth Bus of required size shall be provided throughout the length of each panel board as per schemetic diagram.				
	All hinged Door shall be provided earthed through 2.5sq mm tinned braided copper wire.				
	All rising mains shall have provision of pad locking of MCCB handlesin off position.				
	All MCB's used for protection of resistive and light inductive load shall be type "B" charastrictics and for inductive(motor) load shall be of type-C and discharge lamps and UPS etc.shall be of type-Dcharacterstics.				
	CT's shall be properly mounted and clamped .Connections of CT'sfor measuring instruments/relays etc shall be done through connectors/terminals with provision of shortning as required.				
	Models,current capacities,location and frame size of switchgear shall be written inside of panel doors with paint/permanent marker or as approved shop drawings/site requirement.				
	compliance to the technical specifications ,IS,CPWD is required as applicable.				
	The minimum breaking capacity of the MCCB's shall be as follows unless as specified:-				
	MCCB's upto 160Amp shall be of 15-25KA breaking capacity				
	MCCB's from 200-400 Amp shall be of 36 KA breaking capacity				
	MCCB's above 400 Amp shall be of 50 KA breaking capacity				
	Proper thrust pad shall be provided in rising mains ,BUS supports shall be provided within max 500 distance from each.				
	Flexible connections with copper braided strips shall be provided at the distance of maximum 12m for bearing the expansion in case of any short circuit in rising mains.				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
	Danger notice plate shall be provided as per IS				
	Two & separte earth bus of required size and material shall be provided throughout the length of rising main				
	RYB type LED indication lamps with control MCB shall be provide on each Adaptor box				
	meter board cubical shall be as per PVVNL norms and shall be with pad lock and sealing provision if required.				
	all,panels, Bus bar /rising main, Tap off box, adaptor box etc should be suitable for padlock and seal if required by PVVNL.				
1.0	supply installation ,testing & commissioning of the following cubical type 1.2 mm thick CRCA sheet steel enclosed and segrigate phases recessed in wall or surface mounted final distribution boards of the following description complete as required.DB shall be powder coated and double door construction and single tier configuration for single phase DB and four tier configuration for three phase DB.				
D.1.1	Type-A Lighting & power DB				
	2+4 way TPN DB, 12 Nos 10/16/20/32 Amps SP MCB as outgoing and 3 nos 40A DP RCCB's of 100 mA leakage current with 1 No. 40 Amps 4 pole MCB Isolator as incomer with separate neutral link for each phase.	No.	10		
D.1.2	Type-B lighting & power DB for 3 BHK & 3BHK+Worker				
	2+6 way TPN DB, 18 No. 10/16/20/32 Amps. SP MCB's as outgoing and 3 Nos. 40 Amps DP RCCB of 100 mA leakage current with 1 no.40A four pole MCB Isolator as incomer including separate neutral link for each phase.	No.	261		
D.1.3	Type-C lighting & power DB common area 4 BHK				
	2+8 way TPN DB, 24 Nos 10/16/20/32 Amps SP MCB as outgoing and 3 nos 63A DP RCCB's of 100 mA leakage current with 1 No. 63 Amps 4 pole MCB Isolator as incomer with separate neutral link for each phase.	No.	10		
D.1.4	Type-C lighting & power DB common area 5 BHK				
	2+12 way TPN DB, 30 Nos 10/16/20/32 Amps SP MCB as outgoing and 3 nos 63A DP RCCB's of 100 mA leakage current with 1 No. 63 Amps 4 pole MCB Isolator as incomer with separate neutral link for each phase.	No.	20		
D.1.5	Type-D lighting & power DB 2 BHK				
	2+14 way SPN DB, 14 Nos 10/16/20/32 Amps SP MCB as outgoing and 1 nos 63A DP RCBO of 100 mA leakage current as incomer with separate neutral link for each phase.	No.	2		
D.1.6	Type-F 2BHK & Invertor DB				
	2+12 way SPN DB, 12 No. 10/16/20/32 Amps. SP MCB's as outgoing and 1 No. 63 Amps DP RCBO of 100 mA leakage current including neutral link as incomer.	No.	288		
D.1.7	Type-G 1BHK & lift machine room				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
	2+10 way SPN DB, 10 No. 10/16/20/32 Amps. SP MCB's as outgoing and 1 No. 32/40 Amps DP RCBO of 100 mA leakage current including neutral link as incomer.	No.	10		
D.2	Invertor for Backup supply				
	Supply installation testing & commissioning of 4.0 KVA single phase invertor (230V+10%)input /single phase output (230V)with sealed maintenance free inva tubular battries suitable for 20 minutes backup,along with suitable size 14 guage MS battery rack ,duly painted with all interconnections coplete as required.	No.	5		
E	RISING MAINS AIR INSULATED TYPE				
E.1	Unloading,shifting upto required location,assembling,installation in correct assigned position,making proper conections,testing and commisssioning of following rating TPN rising mains of aluminium bus bar with class H insulation,tap-off conection points, expansion joints,fire barriers including necessary necessary support,louvers,for ventilation,fabricated including 2 x 50x6 mm GI/aluminium earthing conductor throughout the length.Phase sequence of Bus should be matched with the incoming breaker from panel.thrust pad shall be provided for each rising main and to prevent the bus bar expension in downward direction.Also end covers to close the end of rising main and to provide extra support to busbar at end level shall be provided.IP rating shall be IP-42..Sizing of rising mains shall be cosidered after considering all derating factors and calculations for the same shall be submitted for approval.				
E.1.2	1000 Amps Rising Mains	Mtr			
E.1.3	800 Amps Rising Mains	Mtr			
E.1.4	600 Amps Rising Mains	Mtr	20		
E.1.5	500 Amps Rising Mains	Mtr	84		
E.1.6	400 Amps Rising Mains	Mtr	74		
E.1.7	315 Amps Rising Mains	Mtr	19		
E.1.8	250 Amps Rising Mains	Mtr	53		
E.1.9	200 Amps Rising Mains	Mtr			
E.1.10	150 Amps Rising Mains	Mtr	54		
E.3	Unloading,shifting upto required location,supply,assembling,installation in correct assigned position,making proper conections, testing and comm-issioning of following rating Adaptor Box,main frame fabricated out of 14 gauge CRCA sheet steel and partition fabricated out of 16 gauge in cubical formation,dust and vermin proof coupled with rising mains.Boxes shall be treated with all anticorrosive process before powder coating as per specifica-tions 2 Nos. earthing terminals shall be provided. Boxes shall be suitable for conecting of rising mains at top and aluminium cable at bottom.				
E.3.2	1000 Amps TPN MCCB of 50 KA service breaking capacity.	NO.			
E.3.3	800 Amps TPN MCCB of 50 KA service breaking capacity.	NO.			
E.3.4	600 Amps TPN MCCB of 50 KA service breaking capacity.	NO.	5		
E.3.5	400 Amps TPN MCCB of 36 KA service breaking capacity.	NO.			
E.5	Meter Board				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
5	Unloading,shifting upto required location,assembling,installation in correct assigned position,making proper conections, testing and commissssioning of compartmentalized meter board made up of 14 gauge MS sheet powder coated with hinged detachable doors and directly connected to Rising main Tap off Box with solid links .meter box shall have provision of glass for meter reading fixed on the door and terminal for terminating the sensing wire .Size of meter box to house shall be got approved by PVVNL or as per PVVNL norms.All meter box should have provision of pad locking and meter seal as required by PVVNL.Bus bar chamber,cable alley should also having sealing arrangement .				
E.5.5	TYPE- E 4WAY 1 PHASE AND 1 WAY 3 PHASE				
A	100A TPN MCCB 18KA as incomer				
B	BUS BAR				
	125 Amp TPN Al. of required length covered with Coloured				
C	OUTGOINGS				
	4 Nos.40 A DP MCB & 1No.TPN/FP MCB of 10 KA service breaking capacity each with 4 nos space provision for mounting single phase Dual type Electronic KWH Meters & one nos three phase dual type electronic KWH meter including interconnection between Bus bar and KWH meter and MCB's and looping of DG signal wire in all the meters.	Nos	2		
E.5.7	TYPE- F 4 WAY SINGLE PHASE				
A	63A TPN MCCB 18KA as incomer				
B	BUS BAR				
	125 Amp TPN Al. of required length covered with Coloured				
C	OUTGOINGS				
	4 Nos.40 A DP MCB of 10 KA service breaking capacity each with 4 nos space provision for mounting single phase Dual type Electronic KWH Meters including interconnection between Bus bar and KWH meter and MCB's and looping of DG signal wire in all the meters.	Nos			
E.5.8	TYPE- G 3 WAY 1 PHASE				
A	63A TPN MCCB 18KA as incomer				
B	BUS BAR				
	125 Amp TPN Al. of required length covered with Coloured				
C	OUTGOINGS				
	3 Nos.40 A DP MCB of 10 KA service breaking capacity each with 3 nos space provision for mounting single phase Dual type Electronic KWH Meters including interconnection between Bus bar and KWH meter and MCB's and looping of DG signal wire in all the meters.	Nos			
E.5.9	TYPE- F 8 WAY SINGLE PHASE				
A	125A TPN MCCB 18KA as incomer				
B	BUS BAR				
	150 Amp TPN Al. of required length covered with Coloured				
C	OUTGOINGS				
	8 Nos.40 A DP MCB of 10 KA service breaking capacity each with 8 nos space provision for mounting single phase Dual type Electronic KWH Meters including interconnection between Bus bar and KWH meter and MCB's and looping of DG signal wire in all the meters.	Nos			
E.5.10	TYPE- G 6 WAY 1 PHASE				
A	100A TPN MCCB 18KA as incomer				
B	BUS BAR				
	125 Amp TPN Al. of required length covered with Coloured				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
C	OUTGOINGS				
	6 Nos.40 A DP MCB of 10 KA service breaking capacity each with 6 nos space provision for mounting single phase Dual type Electronic KWH Meters including interconnection between Bus bar and KWH meter and MCB's and looping of DG signal wire in all the meters.	Nos	46		
E.5.12	TYPE- F 4 WAY THREE PHASE				
A	100A TPN MCCB 18KA as incomer				
B	BUS BAR				
	125 Amp TPN Al. of required length covered with Coloured				
C	OUTGOINGS				
	4 Nos.63A FP MCB of 10 KA service breaking capacity each with 4 nos space provision for mounting THREE phase Dual type Electronic KWH Meters including interconnection between Bus bar and KWH meter and MCB's and looping of DG signal wire in all the meters.	Nos	71		
E.5.13	TYPE- G 3 WAY THREE PHASE				
A	100A TPN MCCB 18KA as incomer				
B	BUS BAR				
	125 Amp TPN Al. of required length covered with Coloured				
C	OUTGOINGS				
	3 Nos.63 A FP MCB of 10 KA service breaking capacity each with 3 nos space provision for mounting THREE phase Dual type Electronic KWH Meters including interconnection between Bus bar and KWH meter and MCB's and looping of DG signal wire in all the meters.	Nos			
E.6	SDB -CA				
A	Incomer 63Amp TPN/FP MCB 10KA				
B	BUS BAR				
	125 Amp TPN Al. of required length covered with Coloured				
C	OUTGOINGS				
	4 Nos.40 A FP MCB of 10 KA service breaking capacity each including interconnection between Bus bar and MCB's ,RYB LED indication lamps with control MCB's complete as required.	Nos	5		
F	LIFT PANEL				
F.1	Unloading,shifting upto required location,assembly, installation, testing and commissioning of 2mm thick MS Sheet fabricated cubicle type sub-distribution board main frame fabricated out of 16 gauge CRCE sheet steel and partition fabricated out of 16 gauge in cubical formation, dust and vermine proof, complete with hinged detachable and lockable door main distribution board shall be outdoor type floor mounting and pf dead front construction complete with interconnected by copper tape /wires and painting cable entry from top/bottom shall be provided in all the panels.				
	Incoming :- 1 no.100A FP ATS of approved make				
	1 No. 100Amp TPN MCCB 25KA with heavy duty Neutral link				
	1 No.Voltmeter and Ammeter & Digital KWH meter with selector switches of required rating with Required CT om minimum 15VA rating				
	RYB on indication lamp with control MCB for both incomers.				
	Master selection relay for primary supply as per drawing				
	BUSBAR:-150AMP TPN aluminium BUSBAR duly sleeved with coloured sleeves				
	Outgoing:-				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
	3 No. 63 Amp TPN MCCB's of 25KA service breaking capacity				
	2 No.40Amp DP MCB of 10KA service breaking capacity.				
	Lift panel in Lift machine room complete as required.	Nos.	5		
F.2	Supply & laying .effective proper connections ,testing & commissioning of following sizees of 1.1KV XLPE insulated aluminium armoured cable laid on cable tray,clamped on wall including MS supports and clamps etc complete .(from Lift machine room Panel to Lift paneprovided by Lift vendor) or as required.				
A	3.5x50 Sq mm cable	RM			
B	4x25 Sq mm cable	RM	210		
C	4x16 sq mm cable	Rm			
F.3	Supply & Making terminal joint with single compression cable glands and terminal lugs of approved make and size for the following size 1.1KV XLPE insulated aluminium armoured cable laid on cable tray,clamped on wall including MS supports and clamps etc complete .(from Lift machine room Panel to Lift panel provided by Lift vendor) or as required.				
A	3.5x50 Sq mm cable	Nos			
B	4x25 Sq mm cable	Nos	30		
C	4x16 sq mm cable	Nos.			
	Total for cabling etc.				
G	EARTHING INSTALLATION (FOR DISTRIBUTION SYSTEMS)				
	Rates shall includes the following but not limited to complete the work in all respect.				
	All fixing accessories such as brass saddles with base,brass screws,washers,rowl plugs etc. complete.				
	Jointing by revettingand brazing after revetting in case of copper and duly welded & bolted with minimum two nos bolts,washer,spring washer,nuts etc for effective termination.				
	proper treatment of welded joint with approved paint to make the joint anti rust.				
	cutting chases,holes,etc and making good with approved finishes wherever required.				
	Earting system shall comply to IS:3043 -1987 amended uptodate.				
	All fixing accessories such as brass saddles with base,brass screws,washers,rowl plugs etc. complete.				
G.1	Supply, Testing & commissioning,fixing of following bare GI tapes / wire including all necessary fixing accessories and effecting connections as per specifications.				
G.1.1	25x3 mm thick GI tape	RM	1260		
G.1.2	8SWG GI wire	RM	150		
G.1.3	8SWG Cu wire	RM			

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
G.2	Supply,installation & testing of earthing station with 600x600x6 mm thick G.I. plate electrode ,50x6 mm GI strip connecting the inspection chamber to G.I. plate electrode, 20 mm dia 'B' class GI pipe,GI funnel with GI wire mesh,cement concrete chamber with concrete base CI/RCC manhole cover dia 300 mm heavy duty with frame and packing of a mixture charcoal and salt around plate electrode and excavation and backfilling of all kinds of earth masonry work,connecting the earth pit with earthing grid with bitumin covering of joint,all work as per IS:3043,typical drawing and Technical Specifications.	NO	20		
G.3	Providing,laying testing and commissioning of following 6.00 SQ MM 1100volts grade PVC insulated ,sheathed copper conductor unarmoured cable including copper lugs,fixing accessories etc. complete as required.FOR SERVO/UPS/INVERTOR	RM	50		
	Total for earthing system				
H	Advance Lightning protection system and aviation light				
	Rates shall includes the following but not limited to complete the work in all respect.				
	All fixing accessories such as brass saddles with base,brass screws,washers,rowl plugs etc. complete.				
	Jointing by revetting and brazing after revetting in case of copper and duly welded & bolted with minimum two nos bolts,washer,spring washer,nuts etc for effective termination.				
	proper treatment of welded joint with approved paint to make the joint anti rust.				
	cutting chases,holes,etc and making good with approved finishes wherever required.				
	Lightning protection system shall comply to IS 2309-1989 amended uptodate.				
	All fixing accessories such as brass saddles with base,brass screws,washers,rowl plugs etc. complete.				
H.1.1	Supply,installation,Testing & commissioning of maintenance free earthing system made from copper coated grounding rod of 5/8" dia and minimum 1500 mm length ,filled with ground enhancing material (GEM) ,earthing chamber and Heavy duty CI/HDPE/SFRC cover with frame duly painted and marked with all necessary fixing accessories and effecting connections as per specifications and of approved make.Manufacturers test certificates and Type test certificates shall be provided prior to execution.	set	4		
H.1.2	Supply ,fixing,testing & commissioning of early piezo electric transducer based ESE based lightning arrestor comarising of Air terminals or dynasphere,down conductor in GI pipe,event counter,,FRP mast,SS cable tie,inline coupling terminal lugs coupling ,guy set ,hardware etc complete .The rates shall also includes all civil works.The down conductor shall comprise of plastic fiber ,main 1cx70 sqmm copper conductor cable ,semi conductive stress control layer,HV insulation,outer sheath,all concentrically arranged .The overall dia of the conductor cable is 36 mm and characteristics impedance of 8ohms maximum.	set	5		

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
H.1.3	supply and laying of medium class GI pipe under road/paved area etc. including excavation,backfilling,ramming and making good.the depth of excavation shall be minimum 750 mm or as instructed.				
H.1.3.1	75 mm dia	RM	50		
H.1.3.2	40 mm dia	RM			
H.1.4	Providing and fixing of test link in weatherproof 1.6 mm thick MS box of approved make & design complete as required	NO	5		
H.1.5	Supply and fixing of LED type aviation obstruction light of minimum 1600 candla(medium intensity)complete with coupler ,31 mm dia ET stemetc.,timer ,flasher etc complete as per approved make and design.	set			
H.1.6	Supply and fixing of LED type aviation obstruction light of minimum 10 candla (low intensity)complete with coupler ,31 mm dia ET stemetc.,timer ,flasher etc complete as per approved make and design.	set	5		
H.2	Providing,laying testing and commissioning of following single core 70 sq.mm 1100volts grade PVC insulated ,sheathed copper conductor unarmoured cable including copper lugs,fixing accessories etc. complete as required.	Rm	570		
	Total for lightning arrestor system				
I)	INSTALLATION OF LIGHTING FIXTURES (Service Area)				
	The rates shall includes all accessories,components that may be required to make the installation complete in all respects such as:				
	Suitable rawlplug,PVC gutti ,screw washer ,fixing clamps,saddles etc.complete				
	internal wiring between point and fixture as required.				
	suitable length of GI down rod ,hanger ,and connecting wires wherever as required.				
	bonding with suitable size of earth wire				
	drilling holes in support,fixture ,wall/ceiling as required.				
	making hole and repairing etc if required.				
I.1	Receiving, storing, handing, installation & commissioning of following lighting fixtures with,LED driver, all fixing accessories etc. As required.				
I.1.1	Surface mounted compact LED 1 x 15 watt lighting fixture with aluminium body.	No.	1740		
I.1.2	Recessed mounted LED lighting fixture with LED lamp 18Watt Aluminium body .	No.	50		
I.1.3	Surface mounted LED lighting fixture with LED lamp 12 Watt Aluminium body .	No.	10		
I.1.4	surface mounted LED tube light 20W	nos.	60		
I.1.5	surface mounted LED tube light 10W	nos.	10		
I.1.6	Bulk Head lighting fixture with lamp 7Watt for lift shaft.	No.	411		
I.1.7	installation of exhaust fan upto 300 mm dia	Nos	5		
I.1.8	installation of exhaust fan 450 mm dia complete with birdguard and louvers	nos.	10		
I.1.9	installtion of wall bracket fan	nos.	10		
	Total for Installation of light fixture				
J	Conduiting & wiring for Telephone and TV system				

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
	Supply ,installation,testing,commissioning of all conduiting for telephone &TV system includes providing & fixing of following:-				
	1.6mm thick GI outlet boxes and junction boxes.				
	All necessary specials & fittings,bushes etc.				
	Approved colour plates for inspection,junction and outlet boxes .				
	2 mm thick junction boxes and outlet boxes with min 3 mm thick hylum sheet cover of approved size,design and shade fixed with brass screw & washers etc.				
	all fixing acessories such as clips,hooks ,nailsscrew ,washers,saddles with base etc.				
	necessary chase cutting, embedding the conduits with acessoriesin wall floors etc.				
	providing 14SWG pull wire as required.				
J.1	Providing & fixing in position the following heavy duty PVC conduits concealed or surface as called for including necessary junction boxes & all other accessories ie.bends,sockets,hooks etc. with Junction cover of Hylum sheet 3 mm thick of approved shade as required.				
a	32 mm dia	RM			
b	25mm dia	RM	4915		
c	20 mm dia	RM	7373		
J.2	Supply, laying, installation, testing and commissioning of following PVC insulated tinned copper conductor cable/wires in existing cable tray/GI pipe/conduits.				
	TELEPHONE SYSTEM				
J.2.1	2 pair 0.61 mm twin twisted tinned copper wire as signal wire between meter board to in house display unit	RM			
J.3	Supply,laying,testing & commissioning CAT-6 Data Cable laid in existing conduit including markingferruling ,termination etc complete as required	M	49152		
J.4	Supply and fixing telephone outlets with grid plate and RJ-11 jack in 1.6 mm thick GI box complete including cutting,chases,and making good complete of approved make,design,shape complete as required.	No.	2048		
	Total for telephone System				
	TV SYSTEM				
K.1	Providing & fixing in position the following heavy duty PVC conduits concealed or surface as called for including necessary junction boxes & all other accessories ie.bends,sockets,hooks etc. with Junction cover of Hylum sheet 3 mm thick of approved shade as required.				
a	32 mm dia	RM			
b	25mm dia	RM	5325		
c	20 mm dia	RM	7987		
K.2	Supply,laying,testing & commissioning CAT-6 Data Cable laid in existing conduit including markingferruling ,termination etc complete as required	M	53248		
K.3	Supply and fixing telephone outlets with grid plate and RJ-45 jack in 1.6 mm thick GI box complete, fixing of GI boxes	No.	2048		
	total for TV system				
L	Miscelenous Items				
L.1	Supply and Laying of Copper Un-armoured LT cables over exisiting cable tray including cable dressing etc.complete.				
L1.1	4CX25SQ MM copper Un armoured LT Cable	Rm	630		

S./W.O no.	DESCRIPTION	UNIT	TOTAL QTY	RATE	Amount
L.2	fixing,testing & commisioning of recessed ONT enclosere box includes wiring with 3x1.5 sqmm in PVC insulated copper conductor 1100 volts grade standard flexible wires of approved make in conceald or surfaced mounted 2mm thick PVC conduit controlled by 15Amp MCB (ONT box only shalln be provided by the Client free of cost).	Each	568		
L.3	Providing & fixing of MS painted/powdercoated perforated cable tray 150 mm wide 40 mm high 14 gauge perforted cable tray with all fixing acessories,hangers,support structures ,fastners etc complete	RM	500		
L4	chase cutting in RCC with the chase cutting machine for choke clearence and making good as required.	RM	50		
	TOTAL AMOUNT				

BILL OF QUANTITIES					
INTERNAL ELECTRICAL WORKS FOR THE KASA ISLES, AT JAYPEE GREENS, NOIDA(U.P)					
SUBHEAD :- BASEMENT AREA WORK					
PACKAGE-I (KSI 1,2,3,4,5)					
Tender for internal electrification work for Project...KASA ISLES					
S./W.O no.	DESCRIPTION	UNIT	QTY. TOTAL	RATE	Amount
	General notes:-				
	The work to be executed by approved "A" class electrical contractor only valid upto date. The copy of above licence shall be provided along with Tender.				
a	The Items given in this schedule are provisional .The tenderer shall be paid for the actual quantity of work executed and measured at the site at the rates tendered. The client reserves the right to increase or decrease any of the quantities ,or omit totally any item of work .Any Claim by tenderer on these accounts will not be entertained.				
b	All the items of work given in the schedule of quantities shall be executed strictly in accordance with the latest Indian standards, specifications and the requirements of the electricity supply authority, read in conjunction with the relevant drawings and specifications.				
c	The tenderer should visit the site and shall satisfy himself as to the conditions under which the work is to be performed/executed. He shall also check and ascertain the location of any existing structure or equipment or any other situation which may affect the work at any stage. No extra claim as a consequence of ignorance or on ground of insufficient description will be allowed at any stage/date.				
d	All equipment, and material shall be ISI approved or as per Relevant IS whichever applicable.				
e	All approval shall be obtained from owners site representative/consultant/Project manager before starting of execution.				
f	All equipment and material shall be inspected at manufacturers works as per relevant IS by the client or his authorised representative before dispatch. However client reserves the right of waiver of inspection for any material if he feels so but contractor shall be responsible for the quality of material as supplied at all time and material can be inspected at any time.				
g	All shop drawings, vendors drawings shall be approved by the Owner's site representative/consultant/Project manager before fabrications .				
h	All testing and commissioning shall be as per relevant IS for equipments and as per IS:732 for the installation. All test records shall be maintained and submitted to Owner's representative.				
i	All materials manufactureres Test certificates, O&M manuals, data sheets shall be submitted along with supply .				
j	The deduction of already executed item/stage ie. Slab conduit, wall conduit etc. shall be made in each item wherever applicable.				
k	any item if supplied by client shall be recovered from payments of contractor.				
l	All safety Norms shall be followed during execution of work /stage.				
	General requirements for point wiring				
1	All wiring shall be of 1100 volts grade.				
2	All wiring shall be FR PVC insulated unsheathed, flexible, copper conductor, single or multi core as called for.				

S.W.O no.	DESCRIPTION				Amount
		UNIT	QTY. TOTAL	RATE	
3	Earth wiring shall also be FR PVC insulated unsheathed, flexible, copper conductor, single core as called for.				
4	Size of earth wire shall be the same as of the phase conductor or as specified otherwise.				
5	All Switches & Sockets shall be of modular design complete with modular plate and suitable sized GI/ moulded boxes as called for and shall be suitable upto 250V, AC supply.				
6	The recessed Switches and Socket outlet boxes shall be of 1 MM thick pre-galvanized sheet and of the same make / manufacturer as of the switches and sockets. Local make boxes are not to be used.				
7	The surface mounted Switches & Sockets outlet boxes shall be moulded and of the same make / manufacturer as of the Switches & Sockets.				
8	PVC Conduits shall be of FR type and shall be of minimum wall thickness shall be IS. (Rigid Heavy duty Conduit) unless otherwise specified. Company specified adhesive to be used for joining/ fixing of PVC conduits				
9	GI and MS Conduits shall be of min. 16 G thickness. Metallic conduit work shall be complete with proper threads, check nuts/ lock nuts etc.				
10	Flexible conduits, where ever required, shall be of heavy duty and complete with couplers.				
11	Minimum diameter of the conduit to be used shall be 20mm. Conduit less than 20mm dia is not to be used unless otherwise specified.				
12	Conduiting may be concealed or surface mounted (Exposed) as the case may be.				
13	Circuit cum point wiring for light points, ceiling fan points & exhaust fan points, 6A raw light plug sockets, 16A raw power Sockets, Raw moulded socket outlets shall include:				
a	Circuit Wiring (Phase & Neutral) of required length from DB / board to switch.				
b	Point Wiring (Phase & Neutral) of required length from switch board to point.				
c	Insulated Green Colour earth wire for earthing of light fixture, switch and socket outlet box and 3rd pin of socket. Each circuit will have a separate earth wire from the DB.				
d	Conduits, bends, junction boxes, pull boxes and GI pull wire as required.				
e	Switch / Switches/ socket outlets/electronic fan regulator/dimmer with GI outlet boxes/ moulded outlet boxes of suitable sizes, heavy duty 'MS' hexagonal hook box with hook for ceiling fans/modular blanker plates.etc				
f	All hard ware and civil work etc.				
14	Circuit cum point wiring for UPS points shall include:				
a	Circuit Wiring (Phase & Neutral) of required length.				
b	Point Wiring (Phase & Neutral) of required length.				
c	Insulated green colour earth wire for socket outlet box and furniture and a separate green colour earth wire with yellow band for 3rd pin of the socket outlet. Each circuit will have separate earth wires for 3rd pin earthing and box/ furniture earthing from the DB.				
d	Conduits, bends, junction boxes, pull boxes and GI pull wire as required.				
e	Switch / Switches/ socket outlets with GI/ moulded outlet boxes of suitable sizes as called for.				
f	All hard ware and civil work etc.				
15	Wiring terminations shall be made using proper sized thimbles/ lugs.				
16	All circuit & point wiring shall be colour coded & shall have ferruling on either end for circuit identification.				

S./W.O no.	DESCRIPTION				Amount
		UNIT	QTY. TOTAL	RATE	
17	The rates shall include material & labour for necessary length of circuit and point wiring, earth wiring, rigid and flexible conduiting, bends, junction boxes, pull boxes, screws, washers, check nuts, couplers, saddles, hangers supports, GI pull wire, civil work comprising chipping, cutting chases, fixing conduits & making good or surface clamping of conduit work as the case may be, modular switches, socket outlets, Electronic fan regulators surface or recessed outlet boxes as the case may be, ceiling rose, rigid and flexible conduit (PVC), connectors and terminal blocks of proper rating etc. & sleeves etc. including lugs/ thimbles for terminations. Fan points wiring shall include switch as well as electronic speed regulator, and fan hook box with fan hook.Wiring shall include conduiting and wiring (Phase, Neutral,				
18	Cost of circuit cum point wiring shall include everything and all items and accessories to make the job complete in all respects.				
	Important Notes:				
a	For Indoor Units of VRV System, 6A or 16A switched socket outlets to be used depending upon the load.				
b	For 1 Phase window AC Units, moulded socket outlets to be used.				
c	For 1 Phase & 3 Phase Split Units, moulded socket outlets to be used (weather proof). Wiring and conduiting upto outdoor unit to be considered in the point rate.				
1.0	For Light Points, Ceiling Fan Points, Exhaust Fan Points & 6A Socket Outlet Points:				
i)	For switch Controlled light points.				
ii)	For switch Controlled Ceiling Fan points.				
iii)	For switch Controlled Exhaust Fan points.				
iv)	For 6A switched socket outlets.				
v)	For MCB Controlled Light points.				
vi)	Wiring with 2x1.5 sqmm + 1x1.5 sqmm (earth wire).				
vii)	Wiring of required length from DB to point via switch for switch controlled points.				
viii)	Modular switch & plate for light points				
ix)	Modular switch & plate and electronic fan regulator for Ceiling Fan points				
x)	Modular switch and plate for Exhaust Fan point and modular unswitched socket near Exhaust Fan				
xi)	Modular 6A, 5 pin switched socket outlets				
xii)	Suitable sizes of GI outlet boxes.				
xiii)	PVC conduiting of required length complete with bends, junction boxes and pull boxes.				
xiv)	Surface or recessed conduiting including civil work like chase cutting and making good as required (as the case may be).				
A.1	Providing & fixing in position the following heavy duty PVC conduits concealed or surface as called for including necessary junction boxes & all other accessories ie.bends,sockets,hooks etc. with Junction cover of Hylum sheet 3 mm thick of approved shade as required.				
a	40 mm dia	RM			
b	32 mm dia	RM	10		
c	25mm dia	RM	50		
d	20 mm dia	RM	100		
	Total carried over to summary				
B	Distribution boards ,Panels,Meter boards,rising mains				
	The rates for the distribution boxes shall includes the following				
	The rigid sheet steel enclosure of approved size shape,painted or powdercoated.				

S./W.O no.	DESCRIPTION				Amount
		UNIT	QTY. TOTAL	RATE	
	cubical type 14Guage,CRCA sheet steel enclosed & type-3b modular construction				
	complete with interconnections and distribution bus bars alongwith connection strips				
	Proper bonding to earth as per standard.				
	painting/markng on breakers and DB,the location they serve,providing on each panelits circuit diagram duly laminated and pasted .				
	providing cable clamps & supportswithin DB alley.				
	TPN MCCB/ACB means TP MCB with neutral Link of same capacity				
	All MCCB shall be of minimum 10KA breaking capacity or as advised .				
	breaking capacity of MCCB in each panel shall be as mentioned in BOQ/specifications.MCCB upto 250Amp rating shall be thermomegnetic release and as per BOQ.				
	The panels/Busduct/rising mains shall be powder coated with siemensgray paint shade no.RAL-7032 or as specified.				
	Degree of protection for following type of DB & panels enclosure shall be as per IS:13947-1993				
	i. IP -42 for indoor applications				
	ii. IP-55 for outdoor applications				
	All MCCB shall be provided with operating mechanism for door interlock.				
	current density of aluminium shall be 1 sqmm for 1.0 amps considering all derating for rated current of busbars.				
	GI earth Bus of required size shall be provided throughout the length of each panel board as per schemetic diagram.				
	All hinged Door shall be provided earthed through 2.5sq mm tinned braided copper wire.				
	All rising mains shall have provision of pad locking of MCCB handlesin off position.				
	All MCB's used for protection of resistive and light inductive load shall be type "B" charastrictics and for inductive(motor) load shall be of type-C and discharge lamps and UPS etc.shall be of type-Dcharactorstics.				
	CT's shall be properly mounted and clamped .Connections of CT'sfor measuring instruments/relays etc shall be done through connectors/terminals with provision of shortning as required.				
	Models,current capacities,location and frame size of switchgear shall be written inside of panel doors with paint/permanent marker or as approved shop drawings/site requirement.				
	compliance to the technical specifications ,IS,CPWD is required as applicable.				
	The minimum breaking capacityof the MCCB's shall be as follows:-				
	MCCB's upto 160Amp shall be of 15-25KA breaking capacity				
	MCCB's from 200-400 Amp shall be of 36 KA breaking capacity				
	MCCB's above 400 Amp shall be of 50 KA breaking capacity				
	Proper thrust pad shall be provided in rising mains ,BUS supports shall be provided within max 500 distance from each.				
	Flexible connections with copper braided strips shall be provided at the distance of maximum 12m for bearing the expansion in case of any short circuit in rising mains.				
	Danger notice plate shall be provided as per IS				
	Two & sepearte earth bus of required size and material shall be provided throughout the length of rising main				
	RYB type LED indication lamps with control MCB shall be provide on each Adaptor box				

S./W.O no.	DESCRIPTION				Amount
		UNIT	QTY. TOTAL	RATE	
	meter board cubical shall be as per PVVNL norms and shall be with pad lock and sealing provision if required.				
	all,panels, Bus bar /rising main, Tap off box, adaptor box etc should be suitable for padlock and seal if required by PVVNL.				
B.1	supply installation ,testing & commissioning of the following cubical type 1.2 mm thick CRCA sheet steel enclosed and segrigate phases recessed in wall or surface mounted final distribution boards of the following description complete as required.DB shall be powder coated and double door construction and single tier configration for single phase DB and four tier configration for three phase DB.				
	Common area Lighting & power DB				
1.1	12 way TPN D/D DB,36 Nos 10/16/20/32 Amps SP MCB as outgoing and 3 nos 63A DP RCCB's of 100 mA leakage current with 1 No. 63 Amps 4 pole MCB Isolator as incomer with separate neutral link for each phase.	No.	4		
1.2	12 way SPN D/D DB, 12 No. 10/16/20/32 Amps. SP MCB's as outgoing and 1 No. 40 Amps DP MCB and 25A DP RCCB of 100 mA leakage current including neutral link as incomer.	No.	4		
	Invertor for Backup supply				
2.0	Supply installation testing & commissioning of 2.5 KVA single phase invertor (230V+10%)input /single phase output (230V)with sealed maintenance free inva tubular battries suitable for 20 minutes backup,along with suitable size 14 H=guage MS battery rack ,duly painted with all interconnections coplete as required.	No.			
	Conduiting & wiring for submain& fire alarm system.				
	Supply ,installation,testing,commissioning of all submain system shall includes providing & fixing of following:-				
	All necessary specials & fittings,bushes etc.				
	Approved colour plates for inspection,junction and outlet boxes .				
	2 mm thick junction boxes and outlet boxes with min 3 mm thick hylum sheet cover of approved size,design and shade fixed with brass screw & washers etc.				
	all fixing acessories such as clips,hooks ,nailsscrew ,washers,saddles with base etc.				
	necessary chase cutting, embedding the conduits with accessoriesin wall floors etc.				
	providing 14SWG pull wire as required.				
C.1	Providing & fixing in position the following heavy duty MS conduits concealed or surface as called for including necessary junction boxes & all other accessories ie.bends,sockets,hooks etc. with Junction cover of Hylum sheet 3 mm thick of approved shade as required.for invertor points,fire alarm				
a	40 mm dia	RM			
b	32 mm dia	RM	366		
c	25mm dia	RM	1200		
d	20mm dia	RM	1890		
	wiring for submain & mains				
	The rates shall also includes the following :-				
	effective ,adequate and proper connections with lugs,ferrules etc at termination.				
	providing Necessary Junction box covers ,painting of boxes etc.				
	necessary clamps ,nut bolts ,screws,washers etc.				
	Approved colour plates for inspection,junction and outlet boxes .				
	excavation,sand cushioning,brick covering etc in case of laying underground.				

S./W.O no.	DESCRIPTION				Amount
		UNIT	QTY. TOTAL	RATE	
	All material shall be ISI marked/approved with Tie ,tags,dressing etc.				
	necessary chase cutting, embedding the conduits with accessories in wall floors etc.				
	All cutouts/sleeves shall be sealed with fire redardent seales as per specifications.				
D.1	Supply & laying of the following FR PVC insulated flexible copper conductor 1100 Volt grade wire complete as per specification in existing conduit including testing and commissioning complete.				
D.1.1	FR PVC Copper Wire (4x10 +2 x 4) sq.mm for 3 phase DB in common area	RM	400		
D.1.2	FR PVC Copper Wire (2 x 6 +1 x 2.5) sq.mm	RM	50		
D.1.3	FR PVC Copper Wire (2 x 4 +1 x 2.5) sq.mm	RM	150		
D.1.4	FR PVC 1.5 Sqmm COPPER 1.1KV Grade wire	RM	21400		
D.1.5	FR PVC 2.5 Sqmm COPPER 1.1KV Grade wire	RM	1000		
D.2	Supply & laying of the following FR PVC insulated flexible copper conductor 1100 Volt grade wire complete as per specification in existing conduit including testing and commissioning complete.for fire alarm ,CCTV system etc.				
D.2.1	2cx1.5 mm sheathed PVC cable 1.1KV grade	RM	100		
E.1	Supply & laying of the following XLPE insulated aluminium conductor 1100 Volt grade armouered cable complete as per specification in existing pipe,trench,on tray including testing and commissioning complete.				
E.1.1	3.5c 70 sqmm XLPE aluminium conductor cable	RM	400		
E.1.2	4c 35 sqmm XLPE aluminium conductor cable	RM			
E.1.3	4c 25 sqmm XLPE aluminium conductor cable	RM			
E.1.4	4c 16 sqmm XLPE aluminium conductor cable	RM			
E.1.5	4c 10 sqmm XLPE aluminium conductor cable	RM	1100		
E.2	Supply & making the termination of the following XLPE insulated aluminium conductor 1100 Volt grade armouered cable complete as per specification with Single compression glands Copper/aluminium lugs ,ferruls,tags etc including testing and commissioning complete.				
E.2.1	3.5c 70 sqmm XLPE aluminium conductor cable	No	10		
E.2.2	4c 35 sqmm XLPE aluminium conductor cable	No			
E.2.3	4c 25 sqmm XLPE aluminium conductor cable	No			
E.2.4	4c 16 sqmm XLPE aluminium conductor cable	No			
E.2.5	4c 10 sqmm XLPE aluminium conductor cable	No	34		
	Total carried over to summary				
F	Basement electrical panel				
F.1	Design, manufacture, supply, installation, testing and commissioning of 2mm thick MS Sheet fabricated cubicle type sub-distribution board main frame fabricated out of 16 gauge CRCE sheet steel and partition fabricated out of 16 gauge in cubical formation, dust and vermine proof, complete with hinged detacable and lockable door main distribution board shall be outdoor type floor mounting and pf dead front contruction complete with interconnected by copper tape /wires				
	Incoming :-				
	1 No. 400Amp TPN MCCB 25KA with heavy duty Neutral link				
	1 No.Voltmeter and Ammeter with selector switches of required rating with Required CT om minimum 15VA rating				
	RYB on indication lamp with control MCB .				
	BUSBAR:-600 AMP TPN aluminium BUSBAR duly sleeved with coloured sleeves				
	Outgoing:-				
	10 No. 63 Amp TPN MCB's of 10 KA service breaking capacity				

S./W.O no.	DESCRIPTION				Amount
		UNIT	QTY. TOTAL	RATE	
	2 No.40Amp DP MCB of 10KA service breaking capacity.				
	basement electrical panel complete as required.	Nos.	1		
F.2	Supply & laying .effective proper connections ,testing & commissioning of following sizees of 1.1KV XLPE insulated copper unarmoured cable laid on cable tray,clamped on wall including MS supports and clamps etc complete as required.				
A	3.5x50 Sq mm cable	RM			
B	4x25 Sq mm cable	RM	266		
C	4x16 sq mm cable	Rm			
F.3	Supply & Making terminal joint with single compression cable glands and terminal lugs of approved make and size for the following size 1.1KV XLPE insulated copper unarmoured cable laid on cable tray,clamped on wall including MS supports and clamps etc complete as required.				
A	3.5x50 Sq mm cable	Nos			
B	4x25 Sq mm cable	Nos	22		
C	4x16 sq mm cable	Nos.			
G	EARTHING INSTALLATION (FOR DISTRIBUTION SYSTEMS)				
	Rates shall includes the following but not limited to complete the work in all respect.				
	All fixing accessories such as brass saddles with base,brass screws,washers,rowl plugs etc. complete.				
	Jointing by revettingand brazing after revetting in case of copper and duly welded & bolted with minimum two nos bolts,washer,spring washer,nuts etc for effective termination.				
	proper treatment of welded joint with approved paint to make the joint anti rust.				
	cutting chases,holes,etc and making good with approved				
	Earting system shall comply to IS:3043 -1987 amended uptodate.				
	All fixing accessories such as brass saddles with base,brass screws,washers,rowl plugs etc. complete.				
G.1	Supply,Testing & commissioning,fixing of following bare GI tapes / wire including all necessary fixing accessories and effecting connections as per specifications.				
G.1.1	25x3 mm thick GI tape	RM	300		
G.1.2	8SWG GI wire	RM	20		
G.1.3	8SWG Cu wire	RM			
G.2	Supply,installation & testing of earthing station with 600x600x6 mm thick G.I. plate electrode 2 Nos,50x6 mm GI strip connecting the inspection chamber to G.I. plate electrode, 20 mm dia 'B' class GI pipe,GI funnel with GI wire mesh,cement concrete chamber with concrete base CI/RCC manhole cover dia 300 mm heavy duty with frame and packing of a mixture charcoal and salt around plate electrode and excavation and backfilling of all kinds of earth masonry work,connecting the earth pit with earthing grid with bitumin covering of joint,all work as per IS:3043,typical drawing and Technical Specifications.	NO	2		
G.3	Providing,laying testing and commissioning of following 6.0sqmm1100volts grade PVC insulated ,sheathed copper conductor unarmoured cable including copper lugs,fixing accessories etc. complete as required.6 sq mm copper sheathed type	M			

S.W.O no.	DESCRIPTION				Amount
		UNIT	QTY. TOTAL	RATE	
H.1.3	supply and laying of medium class GI pipe under road/paved area etc. including excavation,backfilling,ramming and making good.the depth of excavation shall be minimum 750 mm .or as instructed.				
H.1.3.1	75 mm dia	RM	26		
H.1.3.2	40 mm dia	RM	40		
I)	INSTALLATION OF LIGHTING FIXTURES (Basement)				
	The rates shall includes all accessories,components that may be required to make the installation complete in all respects such as:				
	Suitable rawlplug,PVC gutti ,screw washer ,fixing clamps,saddles etc.complete				
	internal wiring between point and fixture as required.				
	suitable length of GI down rod ,hanger ,and connecting wires wherever as required.				
	bonding with suitable size of earth wire				
	drilling holes in support,fixture ,wall/ceiling as required.				
	making hole and repairing etc if required.				
I.1	Receiving, storing, handing, installation & commissioning of following lighting fixtures with,LED driver, all fixing accessories etc. As required.				
I.1.1	Surface mounted compact LED 1 x 15 watt lighting fixture with aluminium body. STAIRCASE	No.	82		
I.1.2	Surface mounted LED Tube lighting fixture with LED lamp 18/20Watt Aluminium body .PARKING AREA	No.	430		
I.1.3	Surface mounted LED lighting fixture with LED lamp 12 Watt Aluminium body .Lobby	No.	6		
I.1.3	Bulk Head lighting fixture with lamp 7Watt for RAMP	No.	10		
	TOTAL				

BILL OF QUANTITIES					
INTERNAL ELECTRICAL WORKS FOR THE KASA ISLES, AT JAYPEE GREENS, NOIDA(U.P)					
PACKAGE-I (KSI 1,2,3,4,5)					
FIRE ALARM AND PUBLIC ADDRESS SYSTEM					
	Description	Unit	TOTAL QTY	Rate	Amount (Rs.)
	HYBRID FIRE ALARM & DETECTION SYSTEM				
1	Providing, fixing, testing and commissioning of EN / LPCB listed / approved conventional automatic fire Alarm detectors -				
(a)	Optical/Photoelectric type smoke detectors of photo-optic sensing chamber, 12 / 24 volt D.C., visual alarm indicator (LED's) "Blink - green" in stand by and "Steady - red" in alarm complete in all respects with base as required.	Nos.	2462		
(b)	Fixed cum rate of rise temperature type heat detectors, 12 / 24 volt D.C., visual alarm indicators (LED's) "Blink - green" in stand by and "Steady - red" in alarm complete in all respects with base as required.	Nos.	568		
2	Providing, fixing, testing and commissioning of conventional type manual call points as per specifications. The manual call point should have an indicator, which should "blink" in stand by condition.	Nos.	140		
3	Providing, fixing, testing and commissioning of electronic hooters with LMT (hooters shall also be able to work as public address system sounders) housed in sheet steel / Polymer housing suitable for wall / ceiling and surface / recess mounting including making connections with wires complete in all respects and as per specifications.	Nos.	140		

4	Providing, fixing, testing and commissioning of digitally addressed having addressable features (Capable of giving individual address of each detector & Devices) 16 Zone fire alarm control and indicating panel, microprocessor based with RS 485 communication, pulser, timer for dual stage alarm facility complete with indicators, floor selector switches, stand by SMF lead acid battery (suitable for 2 hours emergency operation), battery charger, battery box, connections to building automation system / Fire fighting pump panel etc. as required, complete in all respect as per specifications and requirements. The panel shall have facility of automatic dialling to 5 telephone numbers in case of alarm. The main control panel should give a distinct visual signal of the isolation of zone from the local indication panel. If all the zones at the local panel are isolated or if the fuse of the LCP gets blown, it should result in an open circuit fault indication at the Main Panel.				
	Each zone should have provision of activation of hooter and shall have at least 1 no inbuilt control module for ventilation fans during emergency operation.				
4.1	1zone	set	5		
5	Providing, installing, testing and commissioning of active repeater panel suitable for common fire / fault indication of 50 nos main Fire Alarm panels (networkable up to 60 panel)with sounder , stand by SMF lead acid battery, battery charger, battery box, LCD alpha numeric character display with accept / reset buttons for alarm. The panel shall be connected to the main fire alarm panel.	Set	1		
6	Providing, installing, testing and commissioning of totally enclosed PA system operator console with Two way communication (Talk back system) with microphone, all call facility, with suitable mixer complete with controller having inbuilt amplifier of suitable wattage, for 32 zones & expandable upto 90 zones, with facility for recorded message & connectivity to third party DVD Music Player , with emergency microphone , housed in free standing / wall mounted Rack with Front & back openable, front with Glass, rack should be from reputed company. PA system shall be coupled to the fire alarm system.				
a)	for upto 25 speakers	set			

b)	upto 35 speakers	set	5		
7	Providing, fixing, testing and commissioning of CONTROL MODULE module .	Nos.	5		
8	Providing, fixing, testing and commissioning of 4way Moniter module to connect flow switches	Nos.	134		
9	Providing, fixing, testing and commissioning of 4 way zonal Moniter module	Nos.	134		
10	Providing, fixing, testing and commissioning of RI	Nos.	696		
11	Providing, fixing, testing and commissioning of Talk back Jack to connect duplex type talk back hand set.	Nos.	119		
12	Supply and fixing of ISI marked medium M.S conduit in wall, ceiling or on floor including cutting of brick work, laying of conduit and fixing it with M.S. hooks and then plastering with cement, sand motar finished to the level, including cost of threading of conduit and providing necessary sockets, bends, tees etc as directed at site by the engineer-in-charge with supply of all material labour and T & P required for proper completion of work. conduit being laid either in concealed system in ceiling slab or wall or on surface or under the frame of false ceiling including flexible conduits or through wooden partition including clamping arrangements as required.				
a)	20 mm dia. conduit in shaft	MTR	1000		
b)	25 mm dia. conduit in shaft	MTR	500		
13	Supplying, receiving, storing, handling, fixing, wiring for fire alarm system wiring using ISI marked (IS 694) 1100 Volts grade, PVC insulated, flexible, flame retardant low smoke (FRLS) copper conductor wire , drawn in existing solid / flexible conduits / casing capping including connections to the detectors, manual call points , hooters, accessories, fire alarm control panel etc. including termination with bottle type copper lugs as required to complete the system.				
a)	2 x 1.5 sq mm FRLS Flexible Wire	MTR	18626		

b)	6 x 1.5 sq mm FRLS Flexible Wire	MTR	700		
c)	FRLS twin twisted cable for fire fighting jack	M	595		
14	Supply, installation, testing and commissioning of 2 way communication Fire Fighters Hand Sets. UL / EN Approved.	Nos.	5		
15	Supply, installation, testing and commissioning of Power Supply SMPS 24 Volt with battery charger & 2 x 12 Volt 7AH sealed lead-acid battery for Zone Monitor Module including cost of powder coated MS outlet box etc as per specification, complete as required. (for towers)	Nos.	5		
	total carried over to summary				

Sr. No	Item Discription	Approved Makes
1	HT Pannel (11 KV/33KV)	Siemens(Vertex/ Concurrent), Schneider, ABB, C&S, Adlec, Eaton,LS POWER CONTROL (Scheinder)
2	Buss Bar	ABB, L&T, Schneider, C&S, Tricolite, HPL, Adlec, Prokkon
3	LT Pannel/ Feeder Pillar / AFC Pannel/METER BOARD	Group I- ABB, Siemens, L&T, Eaton, Schneider, C&S, Adlec, Group II- Vertex, Tricolite, Advance Panel, Concurent, Neptune, Brilltech, Precision System, LS POWER (CONTROL) Group III- SEPL, SPC ELECTROTECH, DFE, GPI(Global Power Industries), ASP Engineers
4	Cable Glands & Lugs	Dowell, HEX, Comet, Polycab, Finolex, Bentec, Flexpro, FCG Power, HMI, Gripwell
5	PVC Conduit & Accessories	Group I- Polycab, BEC, RMCON, Finolex, Sudhakar Group II- AKG, Brilltech, Prokkon,Apter
6	Distribution Board (DB)	Group I- Schneider, Siemens, Legrand, Hagger, L&T Group II- C&S, Havells, Anchor,Prokkon, HPL,LS POWER CONTROL,V-MARC,SPC
7	AIR INSULATED RISING MAIN AND BUS DUCT	Group - 1 Schneider Electric, L&T, Adlec, C&S, Seimens Group II - LS POWER CONTROL,SPC ELECTROTECH,CONCURENT
8	Lighting Poles	Group I- Bajaj Electricals, Bombay Tubes & Poles, KESELEC, Phillips India, Wipro Group II- Surya, Mayfair, Prokkon, GPI (Global Power Industries),V-MARC
9	Industries Socket & Junctuion Boxes	Group I- Schneider (Clipsal), Legrand, ABB, ASECO Group II- Neptune, C&S, HPL, Hensel, Prokkon,V-MARC
10	ACB/ MCCB/ MCB/ RCCB/RCBO/MCB Isolator/ RCB/ MPCB/ LBS/ ATS	Group I- Legrand, Hagger, Siemens, L&T, Eaton, Schneider (Acti 9), GE Group II- C&S, Havells, Socomac, Prokkon, Anchor Panasonic,HPL,V-MARC
11	Changeover Switch	L&T, Schneider, Siemens, Socomec, BCH, GE HPL, Prokkon, Havells, ABB, C&S, BENTEC,
12	Energy meter	L&T, Secure, Conzerv, Naptune-, Salzer, Socomec, C&S, Cloud4thing
13	Electronics Multifunctional Meter	L&T, Secure, Schneider, Naptune, Salzer, Socomec, C&S,
14	Capacitor	L&T, EPCOS, Schneider, MEHAR, Neptune, Havells, C&S, TIBCON, BENTEC
15	Lighting Arrester	Duval Messien, Crompton, JVM LPS Ltd, OBO, Truepower, Dehn India, Erico, GPI (Global Power Industries)
16	Modular Switch & Socket Accessories	Group I- Legrand (Mylink), Schneider(Clipsal), ABB Group II- North West, Phillips, Prokkon, Honywell, ABB, C&S, Havells (Athena), Anchor,V-MARC
17	HT Cable (11KV/22KV/33KV/66KV/132KV)	KEI, Universal, Finolex, Cable Corporation, Diamond,V-MARC
18	XLPE LT Cable/ Instrumentation Cable / Power Cable	Group I- KEI, LAPP, Finolex, Universal Cable, Cable Corporation, Group II- Havells, RR Kabel, Polycab, RPG Cables, GEMSCAB,V-MARC,Batra
19	FRLS Cu House Wire	Group I- KEI, LAPP, Finalex, Havells, RR Kabel,Verbena, Polycab, Zaplink, Group II- GEMS Cab, RPG, Prokkon, Cabels, Torrent, Brilltech, ESC,V-MARC,Batra
20	Communication Cable (TV/ Telephone/ Data)	LAPP, KEI, Havells, Legrend, RR Kabel, D-Link, Prokkon, Polycab,Anchor, Rallison, L&T,V-MARC,Batra Henlay,Bonton Cables
21	FS (Fire Survival) Cable	KEI, Polycab, Havells, RR Kabel, Finolex, Gloster Cables/Zaplink,Batra Henlay,Bonton Cables
22	RG-6 /GR-11/ Cat-6 Outlet	Legrand, Finolex, Polycab, HPL,Verbena, Prokkon, D-Link,V-MARC/ Zaplink,Batra Henlay,Bonton Cables
23	Raceway/ Ladder cable Tray/ Perforated Cable Tray	Group I- MEM, GPI (Global Power Industries) Legrand, Prokkon, RMCON, SteelKraft, Aemptech\Powersun Energy/RMCON
24	LED Streetlight Fitting	Wipro, Osram, Havells, Wipro, Bajaj Electricals, Prokkon, Crompton, Phillips, Panasonic
25	LED Flood Light	Wipro, Osram, Havells, Wipro, Bajaj Electricals, Crompton, Prokkon, Phillips, Panasonic
26	LED Pathway Light	Wipro, Panasonic, Havells, Wipro, Bajaj Electricals, Crompton, Phillips
27	CFL Gate Light	Wipro, Panasonic, Havells, Wipro, Phillips
28	CFL Holder	Anchor, Havells, Polycab, North West, Polycab, Prokkon
29	Terminal Blocks	Connectwell, Elmax, Wago, Sezlor,
30	POP Up Boxes	Legrand, MK India, ABB, Panasonic
31	Gas Power Generator	Sterling & Wilson, EPSL Trigenarator, Cummins
32	MS Pipes	Jindal, TATA, SAIL, Surya, Apollo
33	Alternator	Stamford, Caterpillar, Leroy Somer, Kirloskar Electric, Toyo Donkey Power

Sr. No	Item Discription	Approved Makes
34	Lighting Control Equipment	Lutron, Crystron, Schneider Electric, Legrand
35	Indication Lamp	L&T, BCH, Schneider, Kaycee, ABB, Siemens, GE
36	Contractor	L&T, Schneider, GE, C&S, ABB
37	Control Switch	C&S L&T, Schneider, GE, ABB, Alstom, Switron Devices
38	Selector Switch	C&S L&T, Kaycee, Socomac, Schneider, GE, ABB, Alstom, Switron Devices, Neptune-Ducatti
39	Aux Relay	Siemens, C&S L&T, Schneider, GE, ABB
40	Bimatel Relay	Siemens, C&S L&T, Schneider, GE, ABB
41	Junction Box Flame Proof)	Baliga Lighting, FCG Power, Flexo Electricals, Flameproof Equipments, PEW (Prompt Engineering Works)
42	Lighting Power Panel	Baliga Lighting, FCG Power, Flexo Electricals, GPI (Global Power Industries), SEPL (Sharda Electrotech Pvt Ltd), NSG POWER
43	High Mass Lighting	Bajaj, CG Power & Industries, Phillips India
44	UPS System	Emerson, Eaton, Numeric, APC, GE, Vertiv Energy, Toshiba-Mitsubishi, Fuji Electric
45	Fire Alarm panel & PA susem	Honeywell- notifier, Tyco, JCI Simplex, Securition, Verbena, Zaplink, ASES, AGNI, Aaral by Ravel
46	CCTV System	Sony, Verbena, Honeywell, Hikvision, Zaplink, CP Plus
48	Surge Protection Device	JMV, DHEN, GPI (Global Power Industries), OBO, Polycab
49	MS Conduit	SteelKraft, BEC, AKG, RMCON,