

TENDER No.
UL/SA/NOD/Noida117/2023/225

UNITECH LIMITED
UNIHOMES Phase 1, Phase 2 & Phase 3

PMC: SANGAM
PROJECT
CONSULTANTS

LANDSCAPE & ROAD etc., Sector 117, NOIDA: Phase 1, Phase 2 & Phase 3



**TENDER FOR ROADS, LANDSCAPE, COMPOUND DEVELOPMENT
etc. WORKS in Sector 117, NOIDA at Unihomes Phase 1, Phase 2
and Phase 3.**

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PART 1

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SECTION-1

Notice Inviting Tender

UNITECH LIMITED8/13th Floor, Tower B, Signature Tower, South City-1, Gurugram, 122001, Haryana

Date: 07/11/2023

Notice Inviting Tender (NIT)

1. Unitech Limited (hereinafter referred to as the Employer), invites tenders from experienced and eligible agencies for Road, Landscaping & Compound Development Works of Unihomes, Phase 1, 2 & 3, Sector 117, NOIDA, U.P. based on Schedule as under:

Sr. No.	Subject	Description
(i)	Tender Document No.	UL/SA/NOD/Noida117/2023/225
(ii)	Bidding Process	Two envelope bidding System (i) To be uploaded/ filled as per the instructions given in e-Tendering Procedure at Annexure - III. (ii) It may be noted that bidding process is to be done through online portal only. Separate submission of hard copies of any document is neither required nor would be accepted..
(iii)	Name of the Work	Road, Landscape, Compound Development Works for, Unihomes, Phase 1, 2 & 3, Sector 117, NOIDA.
(iv)	Brief Scope of Work	Phase 1, 2 & 3: Bituminous and Concrete Roads, Soft & Hard Landscape, Compound Development etc. Works for various structures etc. complete at Unihomes, Sector 117, NOIDA,
(v)	Estimated Cost	₹. 25.42 Crore
(vi)	Period of Completion	TWENTY FOUR Month
(vii)	Earnest Money Deposit	₹. 5,00,000/- (Rupees Five Lakh only) Bank Details of the Employer for preparation of Bank Guarantee only: Name of Beneficiary: UNITECH LIMITED Bank: ICICI BANK LIMITED Current A/c No.: 245105001682 IFSC Code: ICIC0002451
(viii)	Non-refundable cost of Tender document	Rs. 10,000/- + GST @ 18% through e-Payment gateway.
(ix)	Non-refundable e-Tender processing fee	Rs. 5,000/- (Five Thousand only) + GST through e-payment gateway.
(x)	Site Visit with PMC/ Employer	On 09/11/2023 at 11:00 Hrs (IST)

Sr. No.	Subject	Description
(xi)	Site Visit - Contact	Bidder may contact Mr. Praveen Kumar Ashthana, Contact No. +919685577302 for conducting site visit.
(xii)	Last date of receipt of Bidder's Queries in consolidated form	14/11/2023 on email: Sangam@unitechgroup.com
(xiii)	Pre-Tender Meeting (Time & Venue)	3 PM on 16/11/2023 (<u>online</u> : Link will be shared on ePortal / UNITECH website)
(xiv)	Last date & time of submission of Online Tender	Up to 08/12/2023 by 4 PM (IST)
(xv)	Date & Time of Opening of Technical Bids	On 11/12/2023 at 11:00 Hrs (IST)
(xvi)	Intimation of technically qualified bids.	To be notified later
(xvii)	Date & time of opening of Financial Bids of technically qualified bidders.	To be notified later
(xviii)	Validity of offer	180 days from the date of opening of Technical Bid.

1.2 The tender document can be downloaded from the website etenders.unitechgroup.com

1.3 **Corrigendum, if any, would appear only on the website and shall not be published in any Newspaper.**

2.0 Eligibility Criteria:

The interested bidders should meet the following qualifying criteria:

2.1 Work Experience:

- (i) Experience of having successfully completed similar works during the last 07 (seven) years ending previous day of last date of submission of tenders.
 - (a) Three similar works each costing not less than 40% of the estimated cost put to tender, OR
 - (b) Two similar works each costing not less than 60% of the estimated cost put to tender, OR
 - (c) One similar work costing not less than 80% of the estimated cost put to tender.

“Similar works” shall mean “Works covering Road works, Landscaping works & Compound Development Works incl. associated works” in Group Housing / Mass Housing Complex / Institutional / Multi-storeyed residential building Complex / Commercial Building / Township project / Cluster Development.

Notes: -

- (i) The past experience in similar nature of work should be supported by certificates i.e. copies of Letter of Award & Completion Certificate issued by the respective Employer's organizations. In case, the work experience is of Private sector, the said certificates shall be supported with copies of Corresponding TDS Certificates. Value of work will be computed from the amount reflected in the TDS Certificates in conjunction with the completion certificate.
- (ii) The value of executed works shall be brought to the current level by enhancing the actual value of work done at a simple rate of 7% per annum, calculated from the date of completion to the date of submission of tenders including extension(s) given, if any.
- (iii) The values of completed work shall be exclusive of Service Tax/GST. 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 with regard to 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 GST @18% tax and shall be evaluated accordingly.
- (iv) Joint venture/ consortium of firms/ companies shall not be allowed, and the bidder should meet the above criteria himself. If the JV has been in operation as a SPV and meets the Eligibility criteria, the SPV can bid. The Contractor can opt to deploy a specialized agency during the execution of the works for Specialized / Highly Skilled Work Packages at his own cost and responsibility for delivery as per prescribed standards.
- (i) **Certificates of Subsidiary/ Group Companies:**
 - (a) Any company/ firm while submitting the bid can use the work experience of its subsidiary company to the extent of its ownership in the subsidiary company.
 - (b) In case, the companies/ firms, which intend to get qualified on the basis of experience of the parent company/ group company, the same shall not be considered. However, for the purpose of clarification, the parent company by itself only can submit the bid.
 - (c) In case, the companies/ firms, which intend to get qualified on the basis of experience of their own works/in-house works, the same shall not be considered.
 - (d) In case of a Company/ firm, formed after merger and/ or acquisition of other companies/ firms, past experience and other antecedents of the

merged/ acquired companies/ firms will be considered for qualification of such Company/ firm provided such Company/ firm continues to own the requisite assets and resources of the merged/ acquired companies/ firms relevant to the claimed experience.

(ii) **Foreign Certificate:**

- (a) In case the work experience is for the work executed outside India, the bidders must submit the completion/ experience certificate issued by the owner duly signed & stamped and a self-attested undertaking towards the correctness of the completion/ experience certificates. The contractor shall also get the completion/ experience certificates attested by the Indian Embassy/ Consulate/ High Commission in the respective country.
- (b) In the event of submission of completion/ experience certificate by the Bidder in a language other than English, the English translation of the same shall be duly authenticated by Chamber of Commerce of the respective country and attested by the Indian Embassy/ Consulate/ High Commission of the respective country.
- (c) For the purpose of evaluation of bidders, the conversion rate of such currency into INR shall be arrived at by the daily representative exchange rate published by the IMF as of 7 (Seven) days prior to last date of Submission of bid including extension(s) given, if any.

2.2 Financial Strength:

- (i) The Average Annual financial turnover for the three best out of last five financial years, ending 31st of the March of the previous financial year, shall be at least 35% of the estimated cost put to tender. The requisite Turn-over shall be duly certified by a Chartered Accountant/ Statutory auditor with his Seal/ signatures and registration number. In case of Companies/ Firms less than 3 years old, the Average annual financial turnover shall be worked out as relevant to the available period only.
- (ii) Net Worth of the company/ firm as on the last day of preceding Financial Year should be positive.

Net worth means paid-up share capital, Share Application Money pending allotment* and reserves # less accumulated losses and deferred expenditure to the extent not written off. Net worth has been calculated using the following formula.

Reserves to be considered for the purpose of Net worth shall be all reserves created out of the profits and securities premium account but shall not include reserves created out of revaluation of assets, write back of depreciation and amalgamation.

** Share Application Money pending allotment will be considered only in respect of share to be allotted.*

Paid up share capital	XX
Add: Share Application Money pending allotment	XX
Add: Reserves (As defined Above)	XX

Less: accumulated losses	XX
Less: Deferred Revenue Expenditure to the extent not written off	XX
Net Worth	XX

Notes:

- (a) Self-certified copy of Bank Solvency Certificate issued from Nationalized, or any Schedule Bank should be at least 40% of Estimated Cost of the Project put to tender. The certificate should have been issued within 6 months from the last date of the submission of the tender including extension(s) given if any.

Bank Solvency Certificate is not required if estimated cost put to tender is less than or equal to INR 25 Crore.

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

3.0 The intending bidder must read the terms and conditions of this document carefully including the checklist at **Annexure-IV**. He should submit his tender only if he considers himself eligible and he is in possession of all the documents required. Information and Instructions/addendums for bidders posted on Website(s) shall form part of the Tender Document.

4.0 The Tender Document sections viz., Important Dates & Eligibility Criteria, as uploaded, can be viewed and downloaded free of cost by the intending tenderer. However, the entire tender can be downloaded only after the payment of (a) Non-refundable cost of tender document and (b) Non-refundable e-Tender Processing Fee amounting to ₹ 17,700/-, The EMD has to be paid through e-Payment gateway only including all other desired documents as per Notice Inviting e-tender.

5.0 Set of Contract/ Tender Documents:

The following documents will constitute set of tender documents:

- (i) Notice Inviting e-Tender
- (ii) Summary of price
- (iii) Instructions to Tenderers & General Conditions of Contract
- (iv) Technical Specifications
- (v) Bill of Quantities
- (vi) List of approved makes of materials
- (vii) Tender Drawings
- (viii) GENERAL DETAILS Annexure-I
- (ix) Acceptance of Tender Conditions
- (x) Integrity Pact at Annexure-II (To be signed and stamped by the contractors and scanned copy to be uploaded with the bid)
- (xi) Addendum/ Corrigendum, if any, - Duly signed by the authorized person

- (xii) Special Conditions of Contract
- (xiii) Pre Tender clarifications, if any

- 6.0** The bidders are required to quote strictly as per terms and conditions, specifications, standards given in the tender documents and is not allowed to stipulate any deviations/ conditions.

The bidders are advised to submit complete details with their bids as Technical Bid Evaluation will be done on the basis of documents uploaded on the website by the bidders with the bids. The procedure for e-Tendering, including the maximum allowable file size for the upload, is described at **Annexure-III** and must be complied by the tenderer for successful bid submission. The information should be submitted in the prescribed Performa and only in PDF format as per the sequence defined in the checklist at **Annexure IV**. All pages of all submittals are to be duly signed/attested by the authorised signatory of the bidder along with the company seal.

Bids with Incomplete / Ambiguous information will be rejected.

The Bank Guarantee for EMD submitted by the bidders shall be strictly in the format prescribed in the General Conditions of Contract GCC. In case, EMD is not found verbatim in the prescribed format, the bid will be liable for rejection.

- 7.0** The bidders are advised in their own interest to submit their bid documents well in advance from last date/ time of submission of bids so as to avoid problems which the bidders may face in submission at the last moment/during rush hours for the purpose of uploading the bids.
- 8.0** On the opening date, the tenderer can login and see the tender opening process.
- 9.0** Notwithstanding anything stated above, the Employer reserves the right to assess the capabilities and capacity of the tenderer to perform the contract in the overall interest of work. In case, bidder's capabilities and capacities are not found satisfactory, the Employer reserves the right to reject the tender and the bidder will have no objection to it.

10.0 Certificate of Financial Turn Over:

The submission at Clause 2.2 part (ii) (b) above of the audited balance sheet and P&L account, the bidder shall upload the certificate duly attested by the Chartered Accountant/statutory auditor mentioning the Financial Turnover of last 3 years, however, the entire voluminous balance sheets or P&L accounts are not to be uploaded. Only one page of summarized balance sheet (Audited) and one page of summarized Profit & Loss Account (Audited) copy for last 03 years shall be uploaded and the same shall also be submitted in hard copy.

- 11.0** The bidder must ensure to quote separate rates of percentage for Schedule-A and Schedule-B items. The Rate shall be quoted up to two decimals places. The rate of percentage (above, at par or below) quoted by the bidder for Schedule-A items will be applicable to all items covered under Schedule-A and the rate of percentage (above, at par or below) quoted by the bidder for Schedule-B items will be applicable to all items covered under Schedule-B. The evaluation of Lowest (L1) bid shall be done based on the SUM of the value quoted by the bidder towards combined Schedule-A and Schedule-

B items.

- (a) In case bidder has quoted percentage increase or decrease and the total amount in the summary of prices, but there is discrepancy in total amount, quoted and the amount arrived at after calculating the percentage increase/ decrease quoted by the bidder over Estimated Cost, then the total amount shall be corrected based on the estimated cost and the quoted percentage.
- (b) In case bidder has quoted the percentage and the total amount in summary of prices, but increase or decrease (“+” or “-”) has not been indicated by the bidder against the % figure, then the amount quoted by bidder shall be considered and the percentage increase/ decrease shall be calculated based on the total amount quoted by the bidder and Estimate Cost.
- (c) In case bidder has quoted the percentage in the summary of prices, but the total amount has not been quoted and increase or decrease (“+” or “-”) has not been indicated against the % figure, then the ‘+’ shall be considered for the % figure.
- (d) In case the bidder left the % and amount Blank, % increase/ decrease shall be considered as NIL.

- 12.0** The tenderer(s) if required, may submit queries, if any, through E-mail and in writing to the Employer to seek clarifications within 7 days from the date of uploading of Tender on website but latest by 14/11/2023 so as to reach the office not less than 01 day prior to the date of Pre-bid meeting. The Employer will respond to only those queries which are essentially required for submission of bids. The Employer may not respond to the queries which are not considered fit, viz. replies of which can be implied/ found in the NIT/ Tender documents or which are not relevant or in contravention to NIT/ Tender Documents and the queries received after 15 days from the date of uploading of Tender on website. Technical Bids are to be opened on the scheduled dates. **Requests for Extension of Bid submission will not be entertained.**

The Pre-Bid meeting shall be attended by the intending bidders only and not by vendors/ manufacturers. The intending bidders should depute their authorized person with authorization letter in original to attend the pre-bid meeting.

13.0 Integrity Pact

Integrity Pact at **Annexure-II** duly signed and stamped by the tenderer, shall be submitted. Any tenderer submitting the bid without the integrity Pact shall be liable for rejection.

- 14.0 The Bidder shall submit an affidavit disclosing therein that no criminal case against him/ company, in relation to his normal course of business, is pending at any level including any inquiry by the Central Bureau of Investigation (CBI)/ Enforcement Directorate (ED)."**

- 15.0 List of Documents to be scanned, uploaded and also to be submitted in hard copy within the period of tender submission:**

- (i) EMD: Either by payment through ePayment gateway or if EMD is submitted as Bank Guarantee, upload scanned copy of BG.
- (ii) GENERAL DETAILS as per Annexure-I including Unconditional Letter of Acceptance of Tender Conditions (in original) on the Letter Head of the

Applicant/ Bidder.

- (iii) Integrity pact as per Annexure -II.
- (iv) Affidavit disclosing that No CBI / ED Criminal case against the Bidder.
- (v) Details of Work Experience Certificates –FORM A.
- (vi) Details of Similar Works – FORM B.
- (vii) Financial Details - FORM C.
- (viii) TDS details for Private Sector Projects – FORM D.
- (ix) Self-certified copy of Bank Solvency Certificate - FORM E.
- (x) Documents regarding Net Worth of the Company/ Firm.
- (xi) General Information – Form F.
- (xii) Work Experience Certificates consisting of details as mentioned in Form G.
- (xiii) Affidavit duly notarized by Notary Public on Non-Judicial Stamp Paper of ₹ 100/- for correctness of Documents /Information – Form H.
- (xiv) Power of Attorney in the name of the person authorized for signing/ submitting the tender.
- (xv) E-payment Transaction details towards cost of e-tender processing fee.
- (xvi) Valid GST registration/ EPF registration/ PAN No.
- (xvii) All pages of the entire Corrigendum (if any) duly signed by the authorized person.
- (xviii) Registration Details of the bidder in the GST Act – Form I.
- (xix) Checklist compliance as per Annexure IV.

Notes:

- (i) All the uploaded documents should be in readable, printable and legible form, failing which the bids are liable for rejection. The document submitted in hard copy should be indexed and duly page numbered in the sequence as per the checklist at Annexure IV.
- (ii) In case of foreign bidders participating individually, the bidder is exempted from submission of GST/ EPF/ ESIC registration/ PAN etc. including all other statutory registrations/ permissions/ approvals for executing work in India during bid submission. However, foreign bidders have to submit undertaking on a pre-approved format stating that they will be complying with such mandatory requirements within 60 days of issue of Letter of award. Such format, for the purposes of approval, should reach the Employer on or before the date of the Pre-bid meeting.
- (iii) The Contract agreement shall be signed with successful Bidder only after meeting out all above requirements. No payment during the execution of work shall be released till the compliance to above requirements. In case of non-fulfilment of any such requirement by the successful bidder within the stipulated time period, the EMD shall be forfeited, and the bidder will be put under holiday list of the Employer and/or its parent company M/s Unitech Ltd.

- (iv) The foreign bidder can provide the credit limit documents in lieu of Solvency Certificate.
- 16.0** No Clarification will be sought in case of non-submission of Cost of tender document, EMD of requisite amount, Letter of Waiver as per Section 4 (Forms and formats) and Affidavit as per Form H of Section 2 of the bidding document. In such cases the bid shall be rejected outrightly without seeking any further clarification/document.
- 17.0** The Employer reserves the right to reject any or all tenders or cancel/withdraw the invitation for bid without assigning any reasons whatsoever thereof. The Employer does not bind itself to accept lowest tender and reserves the right to negotiate post the financial bid opening if it may so deem fit.
- 18.0** For all scheduled BOQ items as per Schedule A, the nomenclature/rates/unit of applicable DSR items shall be applicable. In case, any ambiguity is observed in scheduled BOQ items, nomenclature, unit and rate of relevant DSR item will hold good.
- 19.0** Canvassing in connection in the overall tender award process is strictly prohibited, and such canvassed tenders submitted by the bidder will be liable to be rejected and his earnest money shall be forfeited.
- 20.0** In case of any query, please contact Mr. Madhav S Patil, Ph. No +919820047873 during Office hours on all working days.

(.....)

General Details

Sr. No.	Description	Cl. No. of NIT/ ITT/ GCC	Values/ Description to be Applicable for Relevant Clause(s)						
1	Name of Work		Road, Landscaping & Compound Development Works of Unihomes Phase 1, 2 & 3 at Sector 117, NOIDA, U.P..						
2	Employer		Unitech Limited						
3	Type of Tender		Item rate						
4	Earnest Money Deposit	NIT	₹ 5,00,000/- (Rupees Five Lakh only)						
5	Estimated Cost	NIT	₹ 25,41,51,966/- (Rupees Twenty Five Crore Forty One Lakh Fifty One Thousand Nine Hundred Sixty Six only)						
6	Time allowed for Completion of Work	NIT	TWENTY FOUR Month						
7	Mobilization Advance	GCC / 4.0	Up to 5% of contract value						
8	Rate of interest on Mobilization Advance	GCC /4.0	Mobilization Advance shall bear an Interest @ 9% per annum						
9	Validity of Tender	ITT /7.0	180 days						
10	Performance Guarantee	GCC / 2.0	3% (Three Per cent Only) of contract value to be submitted within 15 days of issue of Letter of Award						
11	Security Deposit/ Retention Money	GCC / 3.0	5% (Five Per cent Only) of the gross value of each running/ final bill.						
12	Start date of Contract	GCC/1.0	The date of start of contract shall be reckoned from 15 th day from the date of issue of letter of Award.						
13	Deviation limit beyond which clause of GCC shall apply for all works except foundations.	GCC/ 6.0	<table><tr><td>Building Work</td><td>Repair of Buildings</td><td>Road Work</td></tr><tr><td>30%</td><td>50%</td><td>50%</td></tr></table>	Building Work	Repair of Buildings	Road Work	30%	50%	50%
Building Work	Repair of Buildings	Road Work							
30%	50%	50%							
14	Deviation limit beyond which clause of GCC shall apply for foundation work.	GCC/ 6.0	<table><tr><td>Building Work</td><td>Repair of Buildings</td><td>Road Work</td></tr><tr><td>100%</td><td>NA</td><td>NA</td></tr></table>	Building Work	Repair of Buildings	Road Work	100%	NA	NA
Building Work	Repair of Buildings	Road Work							
100%	NA	NA							

Sr. No.	Description	Cl. No. of NIT/ ITT/ GCC	Values/ Description to be Applicable for Relevant Clause(s)
15	Escalation	GCC / 7.0	For operation of Clause 7.0, the basic rate of materials as on last date of receipt of tender will be as under - (a) Cement ₹ ____ / Bag (b) Reinforcement Steel / TMT bars ₹ ____/ M.T. (c) Structural Steel ₹ ____/ M.T.
16	Defect Liability Period	GCC/ 42.0	05 (Five) years from the date of Issuance of Completion Certificate for the works by the Employer.

SECTION - 2

Instructions to Tenderers

Instructions to Tenderers (ITT)

1. Online percentage rate open tenders are invited from eligible agencies for Road, Landscape and Compound Development works of Unihomes Phase 1, Phase 2 & Phase 3 at Sector 117, NOIDA, U.P. for Unitech Limited.
2. The work is estimated to cost ₹. 25.42 Crore
3. The tender document, as uploaded, can be seen on website www.unitechgroup.com and can be downloaded free of cost.
4. **Earnest Money Deposit**
 - (i) Earnest Money Deposit (EMD) i.e. ₹. 5,00,000/- to be paid online on the eTendering portal OR as a Bank Guarantee (BG) in the prescribed format.
 - (ii) Every Bidder must submit the EMD.
 - (iii) The EMD shall be valid for a minimum period of 180 (One Hundred Eighty) days from the last date of submission of Tender. The Bank Guarantee against EMD shall be scanned and uploaded to the e-Tendering website within the period of tender submission and the original EMD shall be deposited in the office of the Employer as and when called for. The EMD shall be payable to the Employer without any condition(s), recourse or reservations.
 - (iv) The EMD is not to be furnished in the physical mode till called for by the Employer. EMD will have to be paid online through portal only, failing which the Bid will be rejected by the Employer. EMD in the form of BG shall be submitted in the form of a scanned document through portal within the time period mentioned.
 - (v) The Employer shall verify the EMD furnished as BG with the issuing bank. In-case the BG is not confirmed by the issuing Bank, the bid shall be marked as unresponsive and shall stand rejected.
 - (vi) The EMD of unsuccessful bidders will be returned within 15 days after the award of work to the successful bidder or within 180 days from the date of opening of the financial bid, whichever is earlier.
 - (vii) The EMD of the successful bidder will be discharged after the contractor has furnished the performance guarantee.
 - (viii) No interest shall be paid by the Employer on the EMD.
 - (ix) The EMD shall be forfeited in the following events:
 - (a) If the bidder withdraws the bid after bid opening during the period of validity;
 - (b) Any unilateral revision in the offer made by the tenderer during the validity of the offer.
 - (c) Upon non-acceptance of LOI/ LOA by bidder, if and when issued by the Employer.
 - (d) In the case of a successful bidder, if the bidder fails to sign the contract Agreement within 15 days from the date of issue of LOA or furnish the required Performance Guarantee or fail to mobilise within 30 days of the LOA/LOI.

- (e) If any bidder furnishes any incorrect or false statement/ information/ document.
 - (f) If bidder commits any breach of the Integrity Pact.
5. Interested bidder, who intends to participate in the tender, has to make following payments online:
- (a) Cost of Tender Document (Non-refundable) – ₹.10,000.00 + GST @ 18% in favour of the Employer payable online at Gurugram.
 - (b) Cost of e-Tender Processing Fee (Non- refundable) – ₹. 5,000.00 + GST through e- payment only.
 - (c) EMD as above through eTendering portal or Bank Guarantee against the EMD, the scanned copy of which shall be uploaded with Tender documents failing which the Bid stands rejected.
6. Online technical tender documents only of those tenderers shall be opened, whose Earnest Money Deposit, Cost of Tender Document and e-Tender Processing Fee and other documents submitted are found in order. The Financial Bids of only those tenderers will be opened whose technical bid documents are complete in all respect and meet the qualification criteria. Employers' decision shall be final in this regard.
7. **Validity of Tender**
- The tender for the works shall remain open for acceptance by the bidder for a period of 180 days from the date of opening of financial bid. If any tenderer withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the Employer, then the Employer shall, without prejudice to any other right or remedy, be at a liberty to forfeit the Earnest Money Deposit of the bidder. Further, the tenderers shall be put under holiday list of the Employer and/or its parent company M/s Unitech Ltd.
8. The tender submitted shall become invalid if:
- (a) The tenderer is found ineligible on technical evaluation.
 - (b) The tenderer does not upload all the documents as stipulated in the tender document.
9. **Acceptance of Tender**
- The Employer reserves the right to reject any or all the tenders in part or full without assigning any reason whatsoever.
10. The bid shall be submitted strictly in accordance with the conditions of Contract and instructions to tenderer. Tenders with any additional condition(s)/ modifications shall be rejected. Tenders, in which any of the prescribed conditions are not fulfilled or found incomplete in any respect, are liable to be rejected.
11. On acceptance of tender, the name of the authorised representative(s) of the contractor, who would be responsible for taking instructions from the Engineer-in-Charge, shall be intimated by the contractor within 15 days of issue date of Letter of Award by the Employer.

12. The tenderer is not permitted to bid for the works if his family member or a close relative is posted in the project office or concerned Zonal Office of the Employer or its parent company Unitech Limited, unless otherwise permitted. The contractor shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are close relatives to any of the officers of the Employer or its parent company Unitech Limited through the entire duration/ time period of the project. Any breach of this condition by the tenderer would render him liable to the withdrawal of the work awarded to him and forfeiture of Earnest Money Deposit and Security Deposit. This may also debar the contractor from tendering for other/ future works of the Employer or its parent company Unitech Ltd. For the purpose of operation of this clause, a close relative shall mean wife, husband, parents, grandparents, children, grandchildren, brothers, sisters, uncles, aunts, cousins and their corresponding in-laws.
13. The time for completion of the work as contained in contract shall be as per “GENERAL DETAILS - **Annexure-I**”.
14. Canvassing, whether directly or indirectly, with Employers/ PMC/ TPIA is strictly prohibited, and the tenders submitted by the bidders, who resort to canvassing, will be liable for rejection.
15. The tender award, execution and completion of work shall be governed by tender documents consisting of (but not limited to) Letter of Award/ Letter of Work Order, Bill of Quantities, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings. The tenderers shall be deemed to have gone through the various conditions including sub-soil water conditions, topography of the land, drainage and accessibility etc. or any other condition which, in his opinion, will affect his price/ rates before quoting their rates for the work. No claim whatsoever against the foregoing shall be entertained at any stage after the award of works.
16. The drawings issued with the tender documents are indicative. Works shall be carried out as per “Good For Construction/ GFC drawings issued by Engineer-in-Charge to the Contractor” and the “Shop Drawings prepared by the Contractor and approved by Engineer-in-Charge”.
17. **Addenda/ Corrigenda**
- Addenda/Corrigenda to the tender documents may be issued at least three days prior to last date of submission of the tender to clarify or effect modification in specification(s) and/or contract terms included in various sections of the tender document. The tenderer shall suitably take into consideration such Addenda/Corrigenda while submitting his tender. The tenderer shall return such Addenda/ Corrigenda duly signed and stamped as confirmation of its receipt & acceptance and submit along with the tender document as per **Annexure - IV**. All addenda/ Corrigenda shall be signed and stamped on each page by the tenderer and shall become part of the tender and contract documents.
18. **Site Visit and Collecting Local Information**

Before tendering, the tenderers are advised to visit the site of work, the present status

of the project/ work, its surroundings to assess and satisfy themselves about the local conditions such as the status of the project, working and other constraints at site, approach roads to the site, availability of water & electrical power supply, application of taxes/ duties/ levies/ Toll/ Octroi as applicable & any other relevant information required by them to execute the complete scope of work. It becomes even more important in the case of brown-field projects where part works have already been executed that the tenderer obtain all necessary information as to the risks, weather conditions, contingencies & other circumstances, which may influence or affect its tender prices. Tenderer shall be deemed to have considered the above site and local conditions whether he has inspected the site or not and to have satisfied himself in all respect before quoting his rates so as not to raise any claims or extra charges whatsoever in this regard during the entire duration of the project execution, upon completion or during the defect liability period. No claims or extra charges whatsoever shall be entertained/ payable by the Employer on a later date after award of work.

19. Access by Road

- (i) Contractor, if necessary, shall build temporary access roads to the site of construction for the works at his own cost to make the site accessible. The Contractor shall maintain the same in motorable condition at all the times at his own cost. The contractor shall be required to permit the use of any access roads so constructed by him for vehicles of the Employer or any other agencies/ contractors who may be engaged on the project site without any charges whatsoever.
- (ii) Non-availability of access roads or approach to site, for the use of the contractor shall in no case condone any delay in the execution of work nor be the cause for any claim for Penalty.

20. Handing Over & Clearing of Site

- (i) The Contractor should note that the area for construction may be made available in phases as per availability and in conjunction with pace of actual progress of work at site. The work may require to be carried out in constrained conditions. The work is to be carried out in such a way that the traffic, people movement, if any, is kept operative and nothing extra shall be payable to the contractor due to this phasing/ sequencing of the work. The contractor is required to arrange the resources to complete the entire project within total stipulated completion time of the contract. Traffic diversion, if required, is to be done and maintained as per requirement of local traffic police, by the contractor at his own cost and the contractor shall not be entitled for any extra payment, whatsoever, in this regard.
- (ii) Efforts will be made by the Engineer-in-Charge/ Employer to handover the site to the Contractor free of encumbrances. However, in case of any delay in handing over of the site to the Contractor, the Employer shall only consider suitable extension of time for the execution of the work. It should be clearly understood that the Employer shall not consider any revision in contract price or any other Compensation whatsoever viz. towards any idling of Contractor's labour, equipment etc.
- (iii) Old/ Temporary structures on the site of work, if required, shall be demolished by the contractor properly at his own cost unless and otherwise mentioned elsewhere in the

Schedule A & B of the financial bid or as mentioned in SCC. The useful material obtained from demolition of structures & services shall be the property of the Employer and these materials shall be stacked as directed and at the place specified by the Engineer-in-Charge.

- (iv) Necessary arrangement including site maintenance is to be made by the contractor for temporary diversion of flow of existing drain, road etc. The existing drain, road would be demolished, wherever required, with the progress of work under the scope of work. The existing Road and Drain, which are not in the alignment of the said project but are affected and/or need to be demolished during execution for smooth progress of the project, shall be re-constructed/re-habilitated to its original status and condition by the contractor at his own cost. The cost to be incurred by contractor in this regard shall be deemed to be included in the quoted rates and contractor shall not be entitled for any extra payment on this account whatsoever.
- (v) The information about the public utilities (whether over ground or underground) like electrical/ telephone/ water supply lines, OFC Cables, open drain etc. is the responsibility of contractor to ascertain through the site investigation whether the utilities will affect the works.
- (vi) The contractor shall be responsible for obtaining necessary approvals from the respective statutory authorities for shifting/ re-alignment of existing public utilities. The Employer shall only assist the contractor in obtaining the approvals from the concerned statutory authorities.
- (vii) Any services affected by the works must be temporarily supported by the bidder/ contractor who shall also take all reasonable measures required to protect the services and property of various government/ private bodies during the progress of works. The cost towards the same is deemed to be a part of the contract bid, and no extra payment shall be made to the contractor for the same.

21. Scope of Work

- (i) The scope of work covered in this tender shall be as per the Bill of Quantities, specifications, drawings, instructions, orders issued to the contractor from time to time during the execution of work. The drawings for this work, which may be referred for tendering, provide general information about the work to be performed under the scope of this contract. These may not be the final drawings and may not indicate the full range of the work under the scope of this contract. The work will be executed according to the drawings to be released as "GOOD FOR CONSTRUCTION" from time to time by the Engineer-in-charge and according to any additions/ modifications/ alterations/ deletions made from time to time, as required by any other drawings that would be issued to the contractor progressively during execution of work. It shall be the responsibility of the contractor to incorporate the changes that may be in this scope of work, envisaged at the time of tendering and as actually required to be executed.
- (ii) The quantities of various items as entered in the "BILL OF QUANTITIES" are approximate and may vary depending upon the actual requirement of the work. The contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items specified in the bill of quantities. The variation of

quantities will be governed as per Section 3, clause No. 6.0 of the contract.

22. Approval of Temporary / Enabling Works

The setting and nature of all offices, huts, access road to the work and all other temporary works as may be required for proper execution of the works shall be subject to the approval of the Engineer- in-Charge. All the equipment, labour, material including cement, reinforcement and the structural steel required for the enabling/ temporary works associated with the entire Contract shall have to be arranged by the Contractor only and at his own costs and is deemed to be considered in the bid price. Nothing extra shall be paid to the Contractor on this account.

23. Clarifications after Tender Submission

Tenderer's attention is drawn to the fact that during the period the tenders are under consideration, the tenderers are advised to refrain from contacting the Employer and/or his employees/ representatives on matters related to the tender under consideration and that, if necessary, Employer/ PMC will obtain clarifications in writing or as may be necessary.

24. Order of Precedence of Documents

In case of any difference, contradiction, discrepancy, regarding the conditions of contract, specifications, drawings, Bill of quantities etc. forming part of the contract, the following shall prevail in order of precedence:

- (i) Contract Agreement
- (ii) Letter of Award
- (iii) Bill of Quantities
- (iv) GFC Drawings
- (v) Technical Specifications
- (vi) Special Conditions of Contract
- (vii) Instructions to Tenderers
- (viii) General Conditions of Contract
- (ix) Others

Integrity Pact

To be executed Between

The Employer and its representatives such as the PMC/TPIA hereinafter referred to as “**The Principal**” (which expression, unless repugnant to the context thereof, shall mean and include its legal representatives, heirs and assigns)

AND

..... hereinafter referred to as “**The Bidder/ Contractor**” (which expression, unless repugnant to the context thereof, shall mean and include its legal representatives, heirs and assigns)

Preamble

1. Unitech Limited, along with its project owning subsidiaries, being the Employer, is in the process of inviting proposals & bids and award of contracts for procurement, works, goods and services, for completion of its various residential and commercial projects in fulfilment of its given mandate.
2. The Employer places a very high value to the overall integrity, probity and honesty, promoting economic use of resources, and ensure fairness/transparency in its relations with its Bidder(s) and/ or Contractor(s). In order to ensure that highest level of integrity, transparency and trustworthiness is maintained throughout the execution and completion of all its projects, the Employer proposes to adopt and follow an ‘Integrity Pact’ with the prospective bidders/ contractors. The Integrity Pact is applicable to all the stakeholders i.e. the Contractors and their personnel, the Project Management Consulting agencies and staff, the Engineers India Limited (EIL) and their staff in its role as the Third Party Monitoring Agency, and above all, the Employer and its staff. It seeks the commitment of all persons engaged on these projects on whosoever’s behalf to perform without compromising on any aspect, or resorting to any unethical or corrupt practices in any aspect/ stage of the contract, or exercise any unwarranted influence or be influenced on any aspect of the contract or transaction. Only those bidders/ contractors, who commit themselves to this Integrity Pact, would be considered eligible to participate in the bidding process.
3. In order to achieve these goals, the Employer, the EIL and the Project Management Consultants (appointed by the Employer) will monitor the tender process and execution of the contract for compliance with the principles mentioned above.

Section -1: Commitments of the Employer

Unitech Group, along with its staff, commit itself to take all measures necessary to prevent any form of corruption and to observe the following principles:-

- (i) No employee of the Employer or the PMC or the Third Party Inspection & Monitoring Agency (appointed by the Employer) personally or through any other persons/ family members, will take a promise or demand or accept for self or third person, any material or other benefit or consideration, which the person is not legally entitled to in connection with the tender, or the execution of a contract.

- (ii) The Employer or its agents (i.e. the PMCs and the TPIA) will treat all Bidder (s) with equity, fairness and transparency during the tender process. It will, in particular, before and during the tender process, provide to all Bidder (s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an unfair advantage in relation to the process or the contract execution.

Section -2: Commitments of Bidders (s)/ Contractor(s)

The Bidder(s)/Contractor(s) shall also commit himself/herself/ themselves to take all measures necessary to prevent all forms of corruption. The Bidder commits himself/herself to observe the following principles during his/her participation in the tender process and thereafter during the contract execution.

- (i) The Bidder(s)/ Contractor(s) shall not, directly or through any other persons or firm, offer, promise or give to any Employee of the Employer or its agents (PMCs and TPIA) involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage during the tender process or during the execution of the contract.
- (ii) The Bidder(s)/ Contractor(s) shall not enter into any undisclosed agreement or understanding, whether formal or informal, whether collusive or otherwise, with other Bidders. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process in any manner.
- (iii) The Bidder(s)/ Contractor(s) shall not commit any offence surrounding the observance of integrity under any law. The Bidder(s)/ Contractors will not indulge in any improper use of any information or document provided by the Employer or its agents in the course of a business relationship, for purposes of competition or personal gain, or pass on to others such information or documents regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- (iv) In case of sub-contracting, Bidder (s)/ Contractor(s) shall also like-wise ensure the adoption and signing of the Integrity Pact by the respective sub-contractors.
- (v) The Bidder(s)/ Contractor(s) shall, when presenting their/ its bid, faithfully disclose any and all payments he/she/it has made or committed or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

Section-3: Equal treatment of the Bidders/Contractors/Subcontractors.

- (i) The bidders(s)/ contractor(s) undertake(s) to obtain a commitment in conformity with this integrity pact from all the sub-contractors.
- (ii) The Employer shall enter into agreements with identical conditions with all bidders and contractors.
- (iii) Employer will disqualify the bidders, who do not sign this Integrity Pact or violate its provisions, from the tender process.

Section-4: Disqualification from tender process and exclusion from future contracts.

If the Bidder(s)/ Contractor(s), before award or during the project execution, has committed a transgression through a violation of Section-2 above or in any other form such as to put his reliability or credibility in question, the Employer is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process and restrict the Bidder (s)/ Contractor(s) from participating in future tenders of the Employer for a period of two years.

Section-5: Compensation for Damages

If the Employer has disqualified the Bidder(s) from the tender process prior to the award of the contract in terms of Section 4, the Employer shall be entitled to demand and recover the amount equivalent to Earnest Money Deposit towards compensation for damages.

Section – 6: Integrity Pact Duration

- (i) This Integrity pact comes into effect as soon as it is signed by both parties. It shall expire for the Contractor(s) 12 months after the Completion of the work, and 03 months for other unsuccessful Bidder(s) after the contract has been awarded.
- (ii) If any complaint is made/ lodged by either Party to the Employer during the periods mentioned in (i) above, the management would be at liberty to take such action as may be deemed appropriate.

Section – 7: Miscellaneous

- (i) If the Bidder(s)/ Contractor(s) is/are a partnership firm or a consortium or a joint venture, the Integrity Pact shall be signed by all members of the partnership firm or the consortium or the Joint Venture, as the case may be.
- (ii) Any dispute or difference arising between the parties with regard to the terms of this Integrity Pact/Agreement, any action taken by the Employer in accordance with this Integrity Pact/ Agreement or interpretation thereof shall not be subject to arbitration.
- (iii) This agreement shall be governed by the Indian laws for the time being in force. The Courts in Delhi, having the ordinary original civil jurisdiction will have the authority to deal with matters arising from this Pact/ Agreement.

(For and on behalf of the Principal)	(For and on behalf of Bidders/Contractors)
(Official Seal)	(Official Seal)
Witness-1	Witness -2
<Name>	<Name>

<Address>	<Address>
-----------	-----------

Place: _____

Date: _____

Procedure for e-Tendering

Bidders intending to participate in the tenders of Unitech Group have to register first on the e-Tendering portal of Unitech Limited. For this purpose, the authorized representative of the bidder must possess a Class 3 DSC COMBO (Digital Signature Certificate). Registration and participation of the bid has to be done at etenders.unitechgroup.com

1. Registration / Empanelment

Registration includes issuance of a unique User ID to each Bidder by the system. The request for the same is made online. The Bidder fills in the basic identification information during the registration process. The approval of registration will be automatic via email verification. Registration and approval are mandatory to be able to operate as a Bidder on the e-tendering processes.

2. File Size

The documents required to be submitted are given in Annexure-IV of Section-2. Five (5) Buckets of different documents have been made in such a manner that each document size is within 25 MB, which is the maximum limit for uploading the said document. This arrangement must be strictly adhered to overcome any problems during e-filing of documents.

3. Bidder Information Update

Bidder information can be updated as and when required by Bidders online by going on to “ Edit Profile”. The changes may be subject to Employer approval depending on configuration.

4. Update of Digital Signature Certificate (DSC)

The Digital Signature Certificate (DSC) is required to be registered by each bidder on the System. Since DSCs are valid for a limited period, the digital certificates need to be updated (re-registered) online from time to time. Bidders can participate in a bid only by using their DSC.

5. Public View of Tenders

5.1 View of tender notices/ Notice Inviting Tenders

The bidders can view the detailed N.I.T and the time schedule (Key Dates) for all the tenders floated through the tendering portal on the homepage at <https://etenders.unitechgroup.com>. The tender documents can be downloaded from the portal.

5.2 View of in-process tenders

The list of live tenders is available to bidders at the home page of the eTendering portal. However, details of the participants who have downloaded the tender or from whom the bids are received are not made available in order to maintain the confidentiality of identities of bidders and transparency of the procurement process until the process of tender opening has been initiated. The list shows the status of each tender and allows

viewing of the tender notices of these tenders.

5.3 View of completed tenders

Bidders will be able to view their completed tenders online on the portal.

5.4 View of opened bids

- (i) The participating bidder will be able to view only his opened technical bid.
- (ii) The participating bidder, whose technical bid is qualified, will be able to view all the financial bids on the date of opening of financial bids.

5.5 Key Dates

The bidders are strictly advised to follow dates and times as indicated in the tender document. The data and time shall be binding to all bidders. All online activities are time tracked and the system enforces time locks to ensure that no activity or transaction can take place outside the start and end dates and the time of stage as defined in the tender document.

6. Bid Preparation

Bid preparation must be done online. In order to operate on the electronic tender management system, a user's machine is required to be set up. A help file on system setup/Pre-requisite can be downloaded from home page of the website - <https://etenders.unitechgroup.com>

6.1 Filling up the bid forms

Bid forms are in tabular format. Each bid will be submitted on two envelope formats. Bidder has to fill all forms related with these envelopes. Bid form data can be saved only after encryption with the public key of the Bidder's digital certificate. Data can be edited only after decrypting it with the private key of the Bidder's digital certificate. Unencrypted data cannot be saved in the System.

6.2 Adding attachments

- (i) The attachments, if required, may need to be submitted. Some of these may be mandatory and some not. This is clearly indicated on the form for attachment upload. Extra attachments i.e. the ones not asked for in the tender document can also be uploaded at the choice of the Bidder. Employer has the option to disallow uncalled for attachments.
- (ii) The Bidder has an additional feature of 'Briefcase' where he can keep his commonly used documents. While attaching the same to the tender, he can select document either from the briefcase or he can directly upload the same.
- (iii) **Scan copy of Documents to be submitted/uploaded for Prequalification or Technical bid under online PQQ/ Technical Envelope:** The required documents (refer to Tender document) shall be prepared and scanned in different file formats (in PDF /JPEG/MS WORD format such that file size is not exceed more than 25 MB) and uploaded during the on-line submission of PQQ or Technical Envelope.
- (iv) **FINANCIAL or Price Bid PROPOSAL shall be submitted mandatorily online under Commercial**

Envelope .

- (v) **Technical and Financial bid to be submitted on portal and not to be submitted manually**

6.3 Validating bid data

Basic validation rules such as item set rules and mandatory field validations are done during validation. Bidder can choose to go back and rework the bid at this stage, if required.

6.4 Bid signing

- (i) Each electronic bid is digitally signed. The server also obtains a digitally signed time stamp for each envelope that can be verified at any later date. Bidders can generate and print proof of Bid submission with time stamping.
- (ii) The System does not allow the process to be carried out before or after the designated time in tender schedule. Bidder can rework on its bid till the last date of bidding. A bidder seeking to withdraw its bid should initiate the “re-submit” button.

6.5 EMD and Tender Document fees

Bids submitted with EMD and tender fees will only for considered for evaluation. The system will not permit submission of Bid without payment of complete fees.

7 Bid Opening

Unitech representative will undertake the bid opening. Bidder will be able to see the status of bid opened. Technical bids will be opened in the first instance. Upon completion of the technical evaluation, the bids will be marked as “qualified” or “not-qualified”. Financial bids of only such bidders, who qualify in the technical bid evaluation, will be opened.

8. Assistance to the Bidders (Help Desk):

E-mail: Support.tenders@unitechgroup.com

Contact No: 8010208825, 9356477055 & 9028672454 (Nextenders (India) Pvt. Ltd.) Queries related with eTendering only

Support Timings: Monday to Friday- 09.00 A.M. to 08.00 P.M.
Saturday- 10.00 A.M. to 04.30 P.M.

Important Note:-

All queries would require to be registered at our official email- support.tenders@unitechgroup.com for on-time support. (Only those queries which are sent through email along with appropriate screenshots or error description will be considered as registered with the Help-desk). Contact our helpdesk on or before prior to 4 hours of the scheduled closing date & time of respective Tender event.

Bidders participating in online tenders shall check the validity of his/her Digital Signature Certificate before participating in the online Tenders at the portal <https://etenders.unitechgroup.com>. For help manual please refer to the ‘Home Page’ of the eTendering portal <https://etenders.unitechgroup.com>, and click on the available link ‘How to...?’ to download the file.

Check-list - documents to be submitted along with the bid

(All documents mentioned in the Check-list are to be uploaded as a part of the Technical Bid)

Sr. No.	Description	Reference from Tender	Bucket (Size not exceeding 25 MB for each bucket)	Submission Compliance (Yes / No)
1	EMD: If EMD is paid as Bank Guarantee, upload scanned copy of BG..	As per Form No. VI (Section 4)	Bucket-1	
2	General Details	Annexure-I		
3	Unconditional Letter of Acceptance of Tender Conditions (in original) on the Letter Head of the Applicant/ Bidder.	Section-4		
4	Integrity pact	Annexure-II		
5	Details of Work Experience Certificates	Form-A		
6	Details of Similar Works	Form-B		
7	Financial Details	Form-C		
8	TDS details for Private Sector Projects	Form-D		
9	Documents regarding Net Worth of the Company/ Firm.	2.2(II) & 14(XI) of NIT		
10	Self-certified copy of Bank Solvency Certificate	Form-E		
11	Audited summarised Balance Sheet (Last 3 years)	2.2 (ii) Note B of NIT		
12	Audited summarised Profit & Loss Account (Last 3 years)	2.2 (ii) Note B & Para 10 of NIT		
13	General Information	Form-F		
14	Work Experience Certificates	Form-G	Bucket-2	
15	Affidavit duly notarized by Notary Public on Non-Judicial Stamp Paper of Rs. 100/- for correctness of Documents /Information	Form-H		
16	Power of Attorney in the name of the person authorized for signing/ submitting the tender	14(XV) of NIT		
17	E-payment Transaction details towards cost of e-tender processing fee.	6.5 of Annexure-3/ 14(ii) & (xvi) of NIT		

Sr. No.	Description	Reference from Tender	Bucket (Size not exceeding 25 MB for each bucket)	Submission Compliance (Yes / No)
18	Registration Details of the bidder in the GST Act	Form-I		
19	Valid GST registration/ EPF registration/ PAN No.	14 (xvii) of NIT & Note - 2 of NIT		
20	Valid GST registration/ EPF registration/ PAN No.	14 (xvii) of NIT & Note - 2 of NIT		
21	All pages of the entire Corrigendum/ Addenda (if any) duly signed and stamped by the authorized representative of the tenderer	14(xviii) of NIT	Bucket-3	
	Technical Submissions as Part of Bid (Sr. No. 22 to 26 by Successful Bidder only)			
22	Project Execution Plan	18 of GCC	Bucket 4	
23	Overall Project Schedule (Resource loaded- Level 3) along with Critical Path	18 of GCC		
24	Progress ‘S’ Curves	17.2(IV) of GCC		
25	Manpower and Machinery Deployment	4.2 & 2.9(VII) of GCC		
26	Details of Software’s to be used for planning, material control etc.	17.2(iv)		
27	Any other relevant documents the tenderer wishes to submit to support the bid.	-		
28	Forms and Formats			
I	Declaration By the Bidder Regarding Bidding Document	As per Form No. I (Section 4)	Bucket-5	
II	Letter of Waiver	As per Form No. II (Section 4)		
III	Undertaking For Non-Engagement of Child Labour	As per Form No. III (Section 4)		
IV	Affidavit disclosing that No CBI & ED Criminal case against Bidder	As per Clause 14.0		

Signatures of the Bidders
(Name of the Signatory _____)

Place:
Date:

Tender for _____

Mandatory Information Documents**Details of Work Experience with Certificates**

Sr. No.		1	2	3	4
1.	Name of Work and its Location				
2.	Name of Employer				
3.	Date & Reference No. of Completion Certificate				
4.	Date of Start				
5.	Date of Planned Completion				
6.	Date of Actual Completion				
7.	Awarded cost of Work (Excl. Tax)				
8.	Cost of Work on Completion (Excl. Tax)				
9.	Value of Tax (as considered in the Completion Certificate)				
10.	Reference and page No. of documentary proof of the detail missing in the Completion Certificate				

1. Certified that the Completion Certificates of above works are enclosed with the Tender Documents;
2. Details mentioned in the above Form are as per Completion Certificates and have not been presumed.

Note: If any detail is not mentioned in the Completion Certificate, documentary proof of details like drawings, LoA, BoQ, Completion Certificate/ Occupation Certificate, copy of final bill, etc. is to be submitted and uploaded on e-Tender Website along with the Completion Certificate.

Signature of the Bidder with Seal.

Tender for _____

Mandatory Information Documents**Details of Similar Works with Certificates**

Sr. No.		1	2	3	4
1.	Name of Work for which Experience Certificate has been submitted				
2.	Name of Employer				
3.	Date & Reference No. of Completion Certificate				
4.	Type of Work				
5.	Area of Tree Plantation (Soft Landscape)				
6.	Area of Hard Landscape				
7.	Bituminous Road Length executed				
8.	Concrete Road Length executed				
9.	Compound Wall Length and Type				
10.	Reference and page No. of documentary proof of the detail missing in the Completion Certificate				
11.	Any Other				

If any detail is not mentioned in the Work Completion Certificate, documentary proof of detail is to be submitted and uploaded on e-Tender Website along with the Completion Certificate.

Signature of the Bidder with Seal.

Tender for _____

Mandatory Financial Documents

Sr. No.	Description	1 st Year (₹ in Lakh)	2 nd Year (₹ in Lakh)	3 rd Year (₹ in Lakh)
		(A)	(B)	(C)
(i)	Profit/ Loss			
(ii)	Gross Annual Turnover of previous 3 financial years ending as on the last date of the preceding Financial Year			
(iii)	Average Annual Turnover for previous 3 Financial Years (Rs. in Lakh) = $(A+B+C)/3$			
(iv)	Net Worth (Paid-up Capital + Reserves) on the last date of the previous Financial Year			
(v)	Bank Solvency amount as mentioned in the bank Solvency Certificate			

Note: This Form-C is to be submitted in Original

1. Summarised page of Audited Profit & Loss Account of previous 03 Financial Years duly certified by the Chartered Accountant/ Statutory Auditor, has been submitted.
2. Summarised page of Audited Balance Sheet of last Financial Year (ending on the last day of the preceding Financial Year) duly certified by the Chartered Accountant/ Statutory Auditor, has been submitted.

Signature of Chartered Accountant/ Statutory Auditor with Membership Number and Seal	Signature of the Bidder along with the Seal

TDS details of Private Sector Projects

Sr. No.	Subject	1	2	3
(i)	Name of Work			
(ii)	Name of Employer			
(iii)	Project Cost (₹. in Cr.)			
(iv)	No. and date of Completion Certificate			
(v)	Cost of the Work on Completion (₹. in Cr.)			
(vi)	Payments received as per TDS (₹. in Cr.)			
(vii)	TDS corresponding to the Payments			
(viii)	Year-wise TDS as per Form 26AS/ Form 16-A relating to the Work			

Notes:

1. Value of work done will be considered commensurate with the value of TDS Certificates.
2. In case of multiple contracts undertaken from a Employer, details of TDS/ Form 26AS for each work mentioned above need to be segregated and given separately.
3. This Form needs to be supported with Form -26AS taken in HTML format on Form – 16A

Signature of Chartered Accountant/ Statutory Auditor with Membership Number and Seal	Signature of the Bidder along with the Seal

Dispatch number of bank/ Date

Solvency certificate on Letter-head of the Bank

1. This is to state that to the best of our knowledge and information that M/s _____ having/ registered office address
..... is a customer of the bank and has been maintaining his accounts with our branch since _____. As per records available with the bank, M/s..... can be treated as solvent up to a limit of Rs.....(Rupees in words).
2. It is clarified that the above information is furnished and this certificate is being issued at the specific request of the customer.

Name, designation, Signature with seal

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 (e) (Attach copy of Article of Association) (f) Any other (mention the type)	
6.	Place and Year of Incorporation	
7.	Name(s) of Directors/ Partners in the organization	
8.	Name(s) and Designation of the persons, who is authorized to deal with Employer (Attach copy of power of Attorney)	
9.	Bank Details: Name of Bank, Address of Bank Branch, Account No., RTGS, IFS Code	

Signature of the Bidder with Seal
Form G

Work Experience Certificate

Name of Employer with Address, Email & Phone Number

Dispatch No. _____

Date: _____

Name of Contractor _____

Sr. No.	Subject	Description			
1.	Name of work / project & Location				
2.	Name and Address of the Employers				
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 Penalty levied for delayed completion (if any).				
9.	Type of Work: Residential/ Non-Residential Building				
10.	Area of Soft Landscape, Bituminous & Concrete Road Length				
11.	Maximum area of Landscape, Roads, Parks and Description of Scope undertaken				
12.	Maximum per day Plantation undertaken				
13.	Performance report	Outstanding	Very Good	Good	Poor
(a)	Quality of work				
(b)	Resourcefulness				
(c)	Financial soundness				
(d)	Technical proficiency				
(e)	General behaviour				

Name & Designation Signature with
Seal of issuing Authority

Date: _____

AFFIDAVIT

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

Affidavit of Mr. _____ S/oR/o

I, the deponent above named do hereby solemnly affirm and declare as under:

1. That I am the Proprietor/Authorized signatory of M/s having its Head Office/Regd. Office at
2. That the information/ documents/Experience certificates submitted by M/s..... along with the tender for (*Name of work*) to M/s (*Hereinafter referred to as the Employer*) are genuine and true and nothing has been concealed.
3. I shall have no objection in case the Employer verifies them from issuing authority(ies). I shall also have no objection in providing the original document(s) in case the Employer demands so for verification.
4. I hereby confirm that in case, any document, information &/or certificate submitted by me found to be incorrect/ false/ fabricated, the Employer at its discretion may disqualify / reject / terminate the bid/contract and forfeit the EMD/ All dues.
5. I shall have no objection in case the Employer 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 the Employer receives said verification.
6. 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, M/s The Employer shall reject my bid, cancel pre-qualification, and debar me from participating in any future tender.
7. I hereby confirm that our firm /company is not blacklisted/ barred /banned from tendering by M/s The Employer If this information is found incorrect, the Employer at its discretion may disqualify / reject / terminate the bid/contract.
8. The person who has signed the tender documents is our authorized representative. The Company is responsible for all of his acts and omissions in the tender.

I,, the Proprietor / Authorized signatory of do hereby confirm that the contents of the above Affidavit are true to my knowledge, and nothing has been concealed there from.....and that no part of it is false.

DEPONENT

Verified atthis.....day of

ATTESTED BY (NOTARY PUBLIC)

Form - I

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)	

Signature of Bidder with Seal

SECTION-3

General Conditions of Contract

1.0 Definitions

In the contract, the following expressions shall, unless the context otherwise requires, have the meanings hereby respectively assigned to them:

- (a) **Approval** means approval of the Engineer in Charge/Employer, as the case may be, in writing including subsequent written confirmation of previous verbal approval, if any.
- (b) **Authorized Representative of Employer** means the person designated by the Employer/ TPIA and/ or the PMC and shall include their authorized nominee(s) or agent(s).
- (c) **Bill of Quantities or Schedule of Quantities** means the priced complete bill of quantities or schedule of quantities forming part of the complete bill of tender/ tender document.
- (d) **Contract** means the documents forming the tender and acceptance thereof and the formal agreement executed between the Unitech Group Company and the Contractor, together with the documents referred to therein including these conditions, specifications, designs, drawings and instructions issued from time to time by the Engineer-in-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.
- (e) **Contractor** means the individual, firm, or company, whether incorporated or not, undertaking the works and shall include the legally authorized personnel and representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.
- (f) **Contract Value** means the sum for which the tender is accepted as per the letter of Award.
- (g) **Drawings** mean the drawings referred to in the contract document including modifications, if any, and such other drawings as may from time to time be furnished and/ or approved by Engineer-in-charge/PMC.
- (h) **Date of Commencement of Work:** The date of commencement of contract shall be reckoned from the 15th day after the date of issue of Letter of Award.
- (i) **Employer** means Unitech Limited, the holding Company or any of its subsidiaries/ JV/ affiliate, with its corporate office at 8/13th Floor, Tower-B, Signature Towers, South City-1, Gurugram-122007, Haryana.
- (j) **Engineer-in-Charge** shall mean the Authorized representative of the Employer.
- (k) **Excepted Risks** are risks due to riots (other than those among Contractor's employees), war (whether declared or not), invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurgency, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, pandemic and other causes

over which the Contractor has no control and accepted as such by the Employer or causes solely due to use or occupation by Government/ Employer of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to Employer's faulty design of works.

- (l) **Language:** All documents and correspondence in respect of this contract shall be in English Language.
- (m) **Letter of Award (LoA)** shall mean Employer's notification letter conveying its acceptance of the tender along with the conditions stated therein.
- (n) **Market Rate** shall be the rate as decided by the Engineer-in-Charge on the basis of the prevailing cost of materials and labour at the site of work where the work is to be executed plus 15% (Fifteen per cent) to cover all overheads and profits of the Contractor.
- (o) **Month** means English Calendar month, 'Day' means a Calendar Day of 24 Hrs each.
- (p) **PMC** means the Project Management Consultancy agency appointed by the Employer for the works, its Authorized Representatives, Agents, Successors, Beneficiaries, and Legal Heirs.
- (q) **Site** means the land and other places on, under, in or through which the works are to be executed or carried out and any other lands or places provided by the Employer or used for the purpose of the contract.
- (r) **Tender or Bid** means the tender submitted by the bidder for acceptance by the Employer.
- (s) **TPIA** means Third Party Inspection & Monitoring Agency i.e. M/s Engineers India Limited,. appointed by the Employer for Inspection, Monitoring, Audit & Quality Control of the works.
- (t) **Writing** means any manuscript type-written or printed statement under or over signature and/or seal of the concerned, as the case may be.
- (u) **Work or Works** shall, unless there be something in the subject or either context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

Notes:

- (i) Headings in the clauses/conditions of tender documents are for convenience only and shall not be used for interpretation of the clause/condition.
- (ii) Words imparting the singular meaning only also include the plurals and vice versa where the context requires. Words imparting persons or parties shall include firms and corporations and organizations having legal capacities.

2.0 Performance Guarantee

- (i) Within 15 (Fifteen) days from the date of issue of Letter of Award (LoA), the Contractor shall submit an irrevocable Performance Guarantee (as per Form No. VII, Section 4) of 3% (Three per cent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement (notwithstanding and/or without prejudice to any other provisions in the contract). 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 extent 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 issue of the Completion Certificate for the work by the Engineer-in-Charge.
- (ii) The Employer reserves the right to ask for Additional Performance Guarantee where the quoted rates are found to be lower by 15% as compared with the rates indicated in the NIT.
- (iii) The Engineer-in-Charge shall make a claim under the performance guarantee except for amounts to which the Engineer-in-Charge is entitled under the contract (notwithstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:
 - (a) Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above, in which case the Engineer-in-Charge may claim the full amount of the Performance Guarantee.
 - (b) Failure by the Contractor to pay any amount due, either as agreed by the Contractor or determined under any of the Clauses/ Conditions of the agreement, within 30 days of the service of notice to this effect by the Engineer-in-Charge.
 - (c) In the event of the contract being determined or rescinded under provisions of any of the Clauses/ Conditions of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of Engineer-in-Charge.

3.0 Security Deposit/ Retention Money

- 3.1** At the time of making payment to Contractor towards each running and final bill for the work done under the contract, the Contractor shall permit the Engineer-in-Charge to deduct a sum at the rate of 5% (five per cent) of the gross amount of bill till the sum deducted will amount to security deposit of 5% (five per cent) of the tendered value of the work. Such deductions will be made and held by the Engineer-in-Charge by way of Security Deposit unless the Contractor has deposited the amount of Security at the rate mentioned above in cash or in the form of a Bank Guarantee. At any event, if the Bank Guarantee is to be revoked by Engineer-in-Charge, and the Bank is unable to make payment against the said bank guarantee, the loss caused thereby shall fall on the Contractor and the Contractor shall forthwith, on demand, furnish additional security

to the Engineer-in-Charge to make good the deficit.

- 3.2** All Compensation or other sums of money payable by the Contractor under the terms of this contract may be deducted from, or paid by adjustment of a sufficient part of his security deposit or from the interest arising there from, or from any sums which may be due to or may become due to the Contractor by Engineer-in-Charge on any account whatsoever. In the event of his Security Deposit being reduced by reason of any such deductions or adjustment as aforesaid, the Contractor shall within 10 days make good in cash or fixed deposit receipt tendered by the State Bank of India or by any Scheduled Bank or Government Securities (if deposited for more than 12 months) endorsed in favour of the Employer, any sum or sums which may have been deducted from, or raised by adjustment of his security deposit or any part thereof.

3.3 Release of Security Deposit

5% Security Money will be released as per following –

- (a) 25% of the Retention Money/ Security Deposit will be released after 01 year from the date of issue of Completion Certificate subject to the condition that any defects observed during this period are duly rectified/ repaired by the Contractor at his cost to the satisfaction of the Engineer-in-Charge;
- (b) Another 50% of the Retention Money/ Security Deposit will be released after completion of two years from the date of issue of Completion Certificate subject to the condition that any defects observed during this period are duly rectified/ repaired by the Contractor at his cost to the satisfaction of the Engineer-in-Charge;
- (c) The balance 25% of the Retention Money/ Security Deposit will be released after the Defect Liability Period of 5 years from the date of issue of Completion Certificate subject to the condition that any defects observed during this period are duly rectified/ repaired by the Contractor at his cost to the satisfaction of the Engineer-in-Charge;
- (d) If any defect arises within defect liability period, it is the contractor's sole responsibility to rectify the same at his cost once communicated by the Engineer-in-Charge in writing as per Clause 42 & 82 below. In case the contractor fails to rectify the same, then such defect(s) will be got rectified/ repaired by the Employer through any other agency at contractor's risk and cost. The cost will be deducted from the security deposit retained towards such defect liability period.
- (e) The Contractor may, if he so wishes, get his Security Deposit/ Retention Money released from the Employer and replace the same with Bank Guarantees, valid for a period of one year +60 days (25% of the Retention Money), 50% after two years +60 days and the balance 25% after five years +60 days respectively.

4.0 Mobilization Advance

- 4.1** Mobilization advance up to 5% of the contract value, bearing a simple interest rate of 9% per annum, shall be paid to the Contractor, if requested by him on submission of irrevocable Bank Guarantee (as per Form VIII of Section 4) of an amount equivalent to

110% of the respective instalment of mobilization advance, valid for the entire contract period from a Scheduled Bank in the enclosed Performa.

4.2 The mobilization advance, if requested, shall be paid in three instalments of 1%, 2% and 2% as follows:

(i) First Instalment of Twenty per cent (20%) of the total mobilization advance shall be paid after:

- (a) Initial mobilisation at the project site;
- (b) Submission of bank guarantee in approved Performa (annexed under Forms and Formats).

This instalment shall be paid if the request is made by the Contractor within 30 days from date of issue of LOA/LOI.

(ii) Second instalment of Forty per cent (40%) of total mobilization advance shall be paid after the Contractor has constructed Site Office, storage shed, fabrication yard, site laboratory, etc. and has physically mobilized plant and machinery, scaffolding & shuttering materials etc. at site and is ready to start the work to the entire satisfaction of Engineer-in-Charge and commenced the work at site.

The above instalment will be released subject to the actions at sub-para (ii) above are performed by the Contractor within 60 days of signing the contract and/or 90 days from the date of issue of LOA/LOI, whichever is earlier.

(iii) The Balance Forty per cent (40%) of mobilization advance shall be paid to the Contractor on submission of Utilization Certificate (For this contract only) of 60% of the mobilization advance for the already paid to him.

4.3 The mobilization advance, including the accrued interest, shall be recovered from each running account bill of the Contractor in such a manner that the total Mobilization Advance is recovered when 85% of the contract value gets paid to the contractor.

4.4 The Contractor can submit a single bank guarantee for the entire mobilisation amount or submit the bank guarantees in parts against the mobilization advances in the proposed numbers of recovery instalments equivalent to the amount of each instalment as per Clause 4.1 and 4.2 above. The bank guarantee submitted by Contractor against mobilization advance shall initially be valid for the entire contract period and shall be kept renewed from time to time to cover the balance amount arrived by deducting the amount already recovered along with the accrued interest till such time.

5.0 Secured Advance

(i) Interest-free secured advance will be payable to the Contractor up to a maximum of 60% (sixty per cent) in respect of purchase of material required for incorporation in the permanent works and brought to site on production of the Tax Invoice against which the Secured Advance is being sought subject to approval by the Engineer-in-charge. This secured advance will be tenable only for non-perishable material/s brought to site after due verification by the Engineer-in-Charge for quality, quantity requirements on site and value as

described above. The advance will be paid only on submission of Indemnity Bond in the prescribed Performa (As per Form XII, Section 4).

- (ii) The Contractor shall construct suitable Go-down/ warehouse at the site of work for safe storage of the materials against any possible damages due to sun, rain, dampness, fire, theft etc. at his own cost. He shall also employ necessary watch & ward establishment for the purpose at his risk and costs. No claims extra charges on account of safe keeping, pilferage or loss for any reason whatsoever will be tenable or entertained by the Employer.
- (iii) Such secured advance shall not be payable on other items of perishable nature, fragile and combustible. No secured advance shall be paid on high-risk materials such as glass, sand, petrol, diesel etc.

5.1 Recovery of Secured Advance

When materials on account of which an advance has been paid under clause 5.0, are incorporated in the work, the amount of such advance shall be recovered from the next payment to be made to the Contractor under any of the clauses of this contract.

If there is any inordinate and inexcusable delay in incorporation of the goods and materials for which the Secured Advance is provided in the permanent work, the Engineer in Charge may levy interest @ 12% on the value of unutilized goods and materials from the date on which such goods and materials were scheduled to be incorporated in the work as per the work completion schedule till the date on which goods and materials are incorporated in the work.

6.0 Deviations/ Variations Extent and Pricing

The Engineer-in-Charge shall have the power to (i) make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the Contractor shall be bound to carry out the works in accordance with any instructions given to him in writing by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which is instructed, the contractor shall be bound to carry out the works on the same conditions in all respects including the price on which he agreed to do the main work except as hereafter provided in Clause 6.1 and 6.2 below.

The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be suitably extended, if requested by the Contractor. Such extension in time on account of additional work shall be proportionate to the value of additional work.

6.1 Deviations, Extra Items & Pricing

- (i) In the case of extra item(s) (items that are completely new and are in addition to the items contained in the contract), the Contractor may within 15 days of receipt of order or

occurrence of the item(s) submit the rates as per the relevant DSR/DAR supported by proper analysis which shall include detailed CPWD specifications for the work. The Engineer-in-Charge shall, within prescribed time limit of 90 days of the date from the receipt of the claims supported by analysis, determine the rates based on the contractor submission, and the Contractor shall be paid in accordance with the rates so determined. In case the Contractor fails to claim such scheduled item rate claim within the prescribed time of 15 days, the rate approved later by the Engineer- in-Charge shall be binding on the Contractor.

- (ii) In the case of extra item(s) (items that are completely new, not a part of the DSR and are in addition to the items contained in the contract), the Contractor may within 15 days of receipt of order or occurrence of the item(s) submit the rates as per the relevant market rate claim rates, supported by proper analysis based on relevant available costs in the DAR which shall include invoices, vouchers etc. and manufacturer's specifications for the work. The Engineer-in-Charge shall, within prescribed time limit of 90 days of the date from the receipt of the claims supported by analysis, determine the rates on the basis of the market rates after giving consideration to the analysis of the rates submitted by the Contractor, and the Contractor shall be paid in accordance with the rates so determined. In case the Contractor fails to claim such market rate claim within the prescribed time of 15 days, the rate approved later by the Engineer- in-Charge shall be binding on the Contractor.
- (iii) In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined based on the substituted item being a scheduled item of Schedule A or Schedule B in the manner as mentioned in the following para:
 - (a) For Schedule B item, If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the Contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted)
 - (b) For Schedule B item, If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the Contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).
 - (c) For Schedule A item, if the scheduled/DSR/DAR rate for the substituted item so determined is less than the rate of the agreement item (to be substituted), the rate payable to the Contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the DAR/DSR rates (as prevalent on the day of receiving the bid) of substituted item and the agreement item (to be substituted).
 - (d) For Schedule A item, if the scheduled/DSR/DAR rate for the substituted item so

determined is more than the rate of the agreement item (to be substituted), the rate payable to the Contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the DAR/DSR rates (as prevalent on the day of receiving the bid) of substituted item and the agreement item (to be substituted).

The Engineer-in-Charge shall, within prescribed time limit of 90 days from the date of the receipt of the claims **for the substituted item mentioned at Clause 6.1 (iii) (a), (b), (c) & (d) above**, supported by analysis, determine the rates based on the contractor submission, and the Contractor shall be paid in accordance with the rates so determined. In case the Contractor fails to claim such rates for the substituted item within the prescribed time of 15 days, the rate approved later by the Engineer-in-Charge shall be binding on the Contractor.

- (iv) Market rates, in case not available in the DAR/DSR, are to be determined as per various sub-clauses under clause 6.0 and shall be based on prevailing rates of materials excluding GST unless mentioned otherwise, relevant authority rate for labour, market rates of T&P etc. plus 15% towards Contractor's overheads and profits.

6.2 Deviation, Deviated Quantities & Pricing

- (i) In the case of contract items, substituted items, contract-cum-substituted items, which exceed the limits laid down in General details (Annexure-I) are scheduled rates (Schedule A) or have been derived from Scheduled rates based on DSR/DAR, the Contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above-mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the latest DSR along with its associated latest cost index adjustments (if any) as published by CPWD for the DSR, till the date of receipt of the claim, by the contractor, post adjusting the (below/above/at par percentage quoted by the contractor in his financial bid for Schedule A rates). The Engineer-in-Charge shall within prescribed time limit of 90 days from the date of receipt of the claims supported by analysis, after considering the analysis of the rates submitted by the Contractor, determine the rates on the basis of the DSR/DAR/Cost Index and the Contractor price bid shall be paid in accordance with the rates so determined. In case the Contractor fails to claim such market rate claim within the prescribed time of 15 days, the rate approved later by the Engineer-in-Charge shall be binding on the Contractor.
- (ii) In the case of contract items, substituted items, contract-cum-substituted items, which exceed the limits laid down in General details (Annexure-I) are NOT scheduled rates (Schedule A) or have not been derived from Scheduled rates based on DSR/DAR, the Contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above-mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities. The Engineer-in-Charge shall within prescribed time limit of 90 days from the date of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the Contractor, determine the rates on the basis of the market rates (as per invoice, vouchers from the manufacturers or suppliers submitted by the agency and duly verified by Engineer-in-

- Charge or his representative) and the Contractor shall be paid in accordance with the rates so determined. In case the Contractor fails to claim such market rate claim within the prescribed time of 15 days, the rate approved later by the Engineer- in-Charge shall be binding on the Contractor. Similarly, for cases where market rate for deviated quantity is less than the SOR Rate, the rate approved / derived by the Engineer-in-Charge shall be binding on the Contractor.
- (iii) For the purpose of operation/ Accounting of quantities in deviation, the following works shall be treated as works relating to foundation unless & otherwise defined in the contract -
- (a) For Buildings: All works up to 1.2 meter above ground level or up to floor 1 level, whichever is lower.
 - (b) For abutments, piers and well staining: All works up to 1.2 meter above the bed level.
 - (c) For retaining walls, wing walls, compound walls, chimneys, overhead reservoirs/ tanks and other elevated structures - All works up to 1.2 meter above the ground level.
 - (d) For reservoirs/ tanks (other than overhead reservoirs/tanks) - All works up to 1.2 meter above the ground level.
 - (e) For basement - All works up to 1.2 meter above ground level or up to floor 1 level, whichever is lower.
 - (f) For Roads, all items of excavation and filling including treatment of sub-base.
- (iv) Any operation incidental to or necessary for proper execution of the item included in the Schedule of Quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations and such claims will be rejected as submissions for deviations, deviated quantities and pricing and not be treated tenable under this clause.

7.0 Escalation (Cement, Reinforcement & Structural Steel only)

7.1 Payment due to variation in prices of materials after receipt of tender:

- (i) If after submission of the tender, the price of materials increases/ decreases beyond the base price(s) for the work as mentioned in the contract, then the amount of the contract shall be accordingly varied. Last date of submission of tender will be considered as base date for calculating the escalation.

Provided that any such variations shall be effected for the stipulated period of Contract including the justified extended period under the provisions of Clause 17 of the Contract without any action under Clause 8. .

- (ii) However, for work done during the justified extended period, it will be limited to the indices prevailing at the time of updated stipulated date of completion considering the effect of extra work (extra time to be calculated on pro-rata basis only as cost of extra work x stipulated period/tendered cost). If updated stipulated date of completion as

calculated on pro- rata basis does not cover a full calendar month, then indices will be considered or restricted to the previous month.

- (iii) The increase/ decrease in prices of cement, steel reinforcement and structural steel shall be determined by the Price indices issued by the Director General, CPWD. Base price for cement, steel reinforcement and structural steel shall be as issued under the authority of Director General CPWD applicable for the NCR i.e. Delhi including Noida, Gurgaon, Faridabad & Ghaziabad and for other places as issued under the authority of Zonal Chief Engineer, CPWD.
- (iv) The amount of the contract shall accordingly be varied for all such materials and will be worked out as per the formula given below for individual material: -

Adjustment for component of individual material -

$$V = P \times Q \times (CI - CI_0) / CI_0$$

where,

V = Variation in material cost i.e. increase or decrease in the amount of rupees to be paid or recovered.

P = Base Price of material as mentioned in the contract

Q = Quantity of material brought at site for bona-fide use in the works since previous bill excluding any such quantity consumed in the deviated quantity of items beyond deviation limit and extra /substituted item, paid/to be paid at rates derived on the basis of market rate under clause 6.2.

CI₀ = Price index for cement, steel reinforcement bars, structural steel as issued by DG, CPWD and corresponding to the time of base price of respective material.

CI = Price index for cement, steel reinforcement bars, structural steel as issued under the authority of DG, CPWD for period under consideration.

Notes:

- (i) In respect of the justified extended period under the provisions of clause 17 of the contract, without any action under clause 8, the index prevailing at the time of updated stipulated date of completion considering the effect of extra work (extra time to be calculated on pro-rata basis only as cost of extra work x stipulated period/ tendered cost) shall be considered.
- (ii) If updated stipulated date of completion, as calculated on pro- rata basis, does not cover full calendar month then the indices will be considered or restricted to the previous month.
- (iii) If during progress of work or at the time of completion of work, it is noticed that any material brought at site is in excess of requirement, then the amount of escalation, if paid earlier on such excess quantity of material, shall be recovered on the basis of cost indices as applied at the time of payment of escalation or as prevailing at the time of effecting recovery, whichever is higher.
- (iv) Cement, wherever mentioned in this clause, also includes Cement component

used in RMC brought at site from the outside approved RMC plants, if any.

- (v) The date-wise record of ready-mix concrete shall be kept in a register and the cement consumption for the same shall be calculated accordingly.
- (vi) If built-up steel items are brought at site from workshop, then the variation shall be paid for the structural steel up to the period when the built-up item/ finished product is brought at site or as applicable on the date of purchase of such material based on the invoice, whichever is lower.

8.0 Penalty for Delay

- (i) If the Contractor fails (a) to maintain the required progress in terms of clause 17, or (b) to complete the work and clear the site on or before the stipulated date of completion of contract or justified extended date of completion as well as any extension granted under any other clause, he shall, without prejudice to any other right or remedy available under the law to the Employer on account of such breach, pay as Penalty the amount calculated at the rates stipulated in sub para (ii) below.

- (ii) Compensation for delay of work - With maximum rate @ 0.5% (zero point five per cent) per week of delay to be computed on per day basis.

Provided always that the total amount of Penalty for delay to be levied under this condition shall not exceed 10 % (ten per cent) of accepted tendered value.

- (iii) In case, penalty for delay has not been decided/ not communicated to the contractor by the Engineer-in-Charge during the progress of work, it shall not be treated as a deemed waiver of right to levy penalty by Engineer-in-Charge if the work remains incomplete on the actual date of completion or the final justified extended date of completion.

9.0 Action in case work is not done as per Specifications

- (i) All works under or in the course of execution or executed in pursuance of the contract, shall at all times be open and accessible to inspection and supervision of the Engineer-in-charge, his authorized subordinates, and all the superior officers, officer of the Third Party Inspection and Monitoring Agency (TPIA) of the Employer or any organization engaged by the Employer for Monitoring and Quality Assurance, during the usual working hours and at all other times for which reasonable notice of the visit of such officers will be communicated to the Contractor in writing by the Engineer-in-charge/ Employer/ PMC. Orders given to the Contractor's authorised representative shall be considered to have the same force as if they had been given to the Contractor himself.
- (ii) If it shall appear to the Engineer-in-charge or the PMC and/or his authorized subordinates or to the officer of the TPIA or his subordinate officers that –
 - (a) Any work has been executed with unsound, imperfect, or unskilful workmanship; or
 - (b) With materials or articles provided by him for the execution of work are unsound or of a quality inferior to that contracted; or
 - (c) Otherwise not in accordance with the contract;

the Contractor shall, on demand in writing, which shall be made within twelve months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for, forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other approved proper and suitable materials or articles at his own risk, charge and cost including the cost of suitable barricading around the work front as directed by the engineer in charge.

- (iii) In such case, the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the Engineer-in-Charge may consider reasonable during the preparation of on-account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the Contractor. Decision of the Engineer-in-Charge will be conveyed in writing in respect of the same and will be final and binding on the Contractor.

10.0 Action in case of Bad Work

- (i) If it shall appear to the Employer/ Engineer-in-Charge or his authorized representative or to any other inspecting agency, that any work has been executed with unsound, imperfect, or unskilful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution are unsound or of a quality inferior to that contracted for or of the works are otherwise not in accordance with the contract, the Contractor shall on demand in writing, which shall be made within twelve months of the completion of the work, from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, Certified and paid for, forthwith rectify or remove and reconstruct the work so specified in whole or in part as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost.
- (ii) In the event of the Contractor failing to do so within a period to be specified by the Engineer-in-Charge in his demand aforesaid, while the Contractor failure to do so shall continue, the Engineer-in-Charge may rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of, as the case may be, at the risk and cost of the Contractor in all respects.

11.0 Non-Waiver:

Failure of Engineer-in-Charge to insist upon strict performance of any of the terms & conditions hereof, or failure or delay to exercise any rights or remedies provided herein or by law or failure to properly notify the Contractor in the event of breach or the acceptance of or payment for any services hereunder or approval of interim reports, shall not release the Contractor of any of the warranties or obligations of this order and shall not be deemed a waiver of any right of Engineer-in-Charge/ Employer/

PMC/ TPIA to insist upon strict performance hereof or of any of its rights or remedies as to any such services regardless when received or accepted, nor shall any purported oral modification or rescission of this Order by Engineer-in-Charge operate as a waiver of the terms hereof.

12.0 Cancellation/ Determination of Contract in Full or Part

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

- (i) If the Contractor having been given a notice in writing by the Engineer-in-Charge to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or in a manner of unacceptable and poor workmanship, does not comply with the requirement of such notice for a period of 15 days thereafter; or
- (ii) If the Contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the scheduled date for completion and continues to do so after a notice in writing of 15 days from the Engineer-in-Charge; or
- (iii) If the Contractor fails to complete the work within the stipulated date or items of work/ achieve the milestones with individual dates of completion, if any stipulated, on or before the stipulated date; and does not complete them within the period specified in a notice given in writing by the Engineer-in-Charge; or
- (iv) If the Contractor persistently neglects to carry out his obligations under the contract and/ or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 15 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge; or
- (v) If the Contractor shall offer or give or agree to give to any person in Employer's/ PMC/ TPIA service or to any other person on his behalf, any gift or consideration or make a promise of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any action in relation to the obtaining or execution of this or any other contract for the Employer/ PMC/ TPIA; or
- (vi) If the Contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency law for the time

being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport to do so, or if any application be made under any Insolvency law for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors;

- (vii) If the Contractor, being a company, shall pass a resolution or the Court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the Court or the creditor to appoint a receiver or a manager or which entitle the Court to make a winding up order;
- (viii) If the Contractor assigns (excluding part(s) of work assigned to other agency(s) by the Contractor as per terms of contract), transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Engineer -in-Charge with reference to the General Conditions of Contract.

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

- (i) Determine or rescind the contract as aforesaid in full or in part (of which termination or rescission notice in writing to the Contractor under the hand of the Engineer-in-Charge shall be conclusive evidence) and get the same executed at the risk & cost of the Contractor. Upon such determination or rescission, Security Deposit already recovered, Security deposit payable and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of Engineer-in-Charge and unused materials, construction plants, implements, temporary buildings, etc. shall be taken over by Engineer-in-Charge and shall be absolutely at the disposal of the Engineer-in-Charge.
- (ii) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof as shall be un-executed or delayed with reference to the General Conditions of Contract clause no. 24.0 and/ or relevant clause of Special Conditions of Contract, out of his hands and to give it to another contractor to complete.

Notes:

- (i) The Contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work including any new items needed to complete the work.
- (ii) In the event of the Engineer-in-Charge taking recourse to the above, the Contractor shall have no claim to Penalty for any loss sustained by him by

reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account of or with a view to the execution of the work or the performance of the contract; and

- (iii) In case action is taken under any of the provisions aforesaid, the Contractor shall not be entitled to recover or be paid any sum for any work thereof or performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

12.3 Any sums in excess of the amounts due to Employer and unsold materials, constructional plant etc. shall be returned to the Contractor, provided always that if the cost or anticipated cost of completion of the works or part of the works by Employer/ PMC/ TPIA is less than the amount which the Contractor would have been paid if he had completed the works or part of the works, such benefit shall not accrue to the Contractor.

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

12.5 In case, the work cannot be started due to reasons not within the control of the Contractor within 1/8th of the stipulated time or two months for completion of work, whichever is lower, either party may close the contract by giving notice to the other party stating the reasons. In such an eventuality, the Performance Guarantee of the Contractor shall be refunded within following time limits:

(i)	If the Tendered value of work is up to Rs. 1.00 Crore	15 days
(ii)	If the Tendered value of work is more than Rs. 1 Crore and up to Rs. 10 Crore	21 days
(iii)	If the Tendered value of work exceeds Rs. 10 Crore	30 days

Neither party shall claim any compensation for such eventuality. This clause is not applicable for any breach of the contract by either party.

13.0 Contractor liable to pay Compensation even if action not taken under clause 12.0

In a case where any of the powers conferred upon the Engineer-in-Charge shall have become exercisable under the relevant clause of the Contract, and the same are not exercised, the non-exercise thereof shall not constitute an ipso facto waiver of any of the conditions hereof. Such powers shall be exercisable in the event of any future case of default by the Contractor and the liability of the Contractor for Penalty shall remain unaffected. In the event of the Engineer-in-Charge putting in

force all or any of the powers vested in him under any clause, he may, if he so decides, after giving a notice in writing to the Contractor, take possession of (or at the sole discretion of the Engineer-in-Charge, which shall be final and binding on the Contractor), use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/ or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final and binding on the contractor and/or direct the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

14.0 Carrying out part work at the risk & cost of the Contractor

14.1 If the Contractor:

- (i) At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after receiving a notice in writing of 15 days in this respect from the Engineer-in-charge; or
- (ii) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 15 days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or
- (iii) Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge;

The Engineer-in-Charge, without invoking action under clause 12.0 of the contract may, without prejudice to any other right or remedy against the Contractor, which have either accrued or accrue thereafter to Employer/PMC, by a notice in writing to take the part work/ part incomplete work of any item(s) out of his hands and shall have the powers to:

- (a) Take possession of the site and any materials, constructional plant, implements, stores, etc. thereon; and/or
- (b) Carry out the part work/ part incomplete work of any item(s) by any means at the risk and cost of the Contractor.

The Engineer-in-Charge shall determine the amount recoverable from the Contractor, if any, for completion of the part work/ part of any incomplete work and

execute the same at the risk and cost of the Contractor. The liability of the Contractor on account of loss or damage suffered by the Employer because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the Contractor for the value of work done in all respects in the same manner and at the same rate as if it had been carried out by the Contractor under the terms of his contract, the value of Contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the Contractor. The certificate of the Engineer-in-Charge as to the value of work done shall be final and binding on the Contractor provided that action under this clause shall be taken only after giving notice in writing to the Contractor. Provided also that if the expenses incurred by the Employer are less than the amount payable to the Contractor at his agreement rates, the difference shall not be payable to the Contractor.

- 14.2 Any excess expenditure incurred or to be incurred by the Employer in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by the Employer as aforesaid after allowing such credit, shall without prejudice to any other right or remedy available to the Employer in law or as per agreement, be recovered from any money due to the Contractor on any account, and if such money is insufficient, the Contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the Contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the Contractors' unused materials, constructional plant, implements, temporary building at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the Contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered from the Contractor in accordance with the provisions of the contract.

In the event of above course being taken by the Engineer-in-Charge, the Contractor shall have no claim to compensation for any loss suffered by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract.

15.0 Suspension of Works

- (i) The Contractor shall, on receipt of the order in writing of the Engineer-in-charge (whose decision shall be final and binding on the Contractor), suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-charge may consider necessary for any of the following reasons:
 - (a) On account of any default on part of the Contractor, or
 - (b) For proper execution of the works or part thereof for reason other than the default of the Contractor, or
 - (c) For safety of the works or part thereof.
- (ii) The Contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-charge.

- (iii) If the suspension is ordered for reasons (b) and (c) in sub-Para (i) above.
 - (a) The Contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion period. No adjustment in contract price will be allowed for reasons of such suspension.
 - (b) In the event of the Contractor treating the suspension as an abandonment of the Contract by Employer, he shall have no claim to payment of any Penalty on account of any profit, loss of profit or advantage, which he may have derived from the execution of the work in full.

16.0 Termination of Contract on Death of the Contractor

Without prejudice to any of the rights or remedies under this contract, if the Contractor dies, the Engineer-in-Charge shall have the option of terminating the contract without any Penalty to the Contractor.

17.0 Time & Extension for Delay

17.1 The time allowed for execution of the Works as specified or the extended time in accordance with the conditions as per this clause shall be the essence of the Contract. The execution of the work shall commence from the 15th day of issue of LoA or from the date of handing over of the site, notified by the Engineer-in-Charge, whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, the performance guarantee shall be forfeited by the Engineer-in-Charge and shall be absolutely at the disposal of the Engineer-in-Charge without prejudice to any other right or remedy available in law.

17.2 As soon as possible but within 10 days of award of work:

- (i) The Contractor shall submit a Time and Progress Chart for each milestone as per the format required by the engineer-in-charge. The Engineer-in-Charge may, if required, within 30 (Thirty) days thereafter modify, and communicate the approved program to the Contractor, failing which the program submitted by the Contractor shall be deemed to be approved by the Engineer-in-Charge. The work programme shall include all details of drawings and decisions required to complete the contract with specific dates by which these details are required by the Contractor without causing any delay in execution of the work. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various activities of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the overall limitations of time imposed in the Contract documents.
- (ii) In case of non-submission of construction programme by the Contractor, the program approved by the Engineer-in-Charge shall be deemed to be final.
- (iii) The approval by the Engineer-in-Charge of such programme shall not relieve the Contractor of any of the obligations under the contract.
- (iv) The Contractor shall submit the Time and Progress Chart using the mutually agreed software or in other format decided by Engineer-in-Charge for the work done during

the previous month to the engineer in charge on or before the 7th day of each month with S curves of the proposed planning vs actual execution progress.

17.3 If the work(s) be delayed by -

- (i) force majeure; or
- (ii) abnormally bad weather; or
- (iii) serious loss or damage by fire; or
- (iv) civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work; or
- (v) delay on the part of other Contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract; or
- (vi) any other cause like above which, in the reasoned opinion of the Engineer-in-Charge is beyond the Contractor's control;

then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless constantly use his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

The Contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in above sub clauses and he shall update the progress schedule reports submitted at above Clause for all such delays once they are approved by the engineer in charge based on the contractor submittals as defined in Clause below.

17.4 In case the work is hindered by the Employer for any reason/event, for which the Employer is responsible, the Engineer-in-Charge shall, if justified, give a fair and reasonable extension of time and reschedule the milestones for completion of work. Such extension of time or rescheduling of milestone/s shall be without prejudice to any other right or remedy of the parties in contract or in law. Provided further that for concurrent delays under this clause and sub clause 17.3 to the extent the delay is covered under sub clause 17.3, the Contractor shall be entitled to only extension of time and no damages and/or claims on this account.

17.5 Request for rescheduling of Milestones or extension of time, to be eligible for consideration, shall be made by the Contractor in writing within ten days of the happening of the event causing delay. The Contractor shall indicate in such a request the period by which rescheduling of milestone/s or extension of time is required.

17.6 In case the work is delayed by the Contractor for any reasons, in the opinion of the Engineer-in-Charge, beyond the events mentioned in clause 17.3 or clause 17.4 and beyond the justified extended date, without prejudice to the right to take action, the Engineer-in-Charge may grant extension of time required for completion of work without rescheduling of the milestones. The Contractor shall be liable for levy of Penalty for delay for such extension of time.

18.0 Time Schedule & Progress

- 18.0** Time allowed for carrying out all the works as entered in the tender shall be as mentioned in the “GENERAL DETAILS (Annexure-I)” which shall be reckoned from the 15th day from the date on which the letter of Award is issued to the Contractor OR from the date of handing over of site to the Contractor; whichever is later. Time shall be the essence of the contract and contractor shall ensure the completion of the entire work within the stipulated time of completion.
- 18.1** The contractor shall also furnish within 15th days of date of issue of letter of Award a CPM network/ PERT chart/ Bar Chart for completion of work within stipulated time. This will be duly got approved from the Engineer-in-Charge. This approved Network/ PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.
- 18.2** Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/PERT Network. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-in-Charge.
- 18.3** During the currency of the work the contractor is expected to adhere to the time schedule on milestone and total completion and this adherence will be a part of Contractor’s performance under the contract. During the execution of the work contractor is expected to participate in the review and updating of the Network/BAR CHART undertaken by the Engineer-in-Charge. These reviews may be undertaken at the discretion of Engineer-in-charge either as a periodical appraisal measure or when the quantum of work order on the contractor is substantially changed through deviation orders or amendments. The review shall be held at site or any of the offices of Employer/PMC at the sole discretion of Engineer-in-Charge. The contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time to the contractor.
- 18.4** Contractor shall submit (as directed by Engineer-in-Charge) progress reports on a computer-based program (program and software to be approved by Engineer-in-Charge) highlighting status of various activities and physical completion of work. The contractor shall send completion report with as built drawings to the office of Engineer-in-Charge, in writing within a period of 30 days of completion of work.
- 18.5** At least 10 Nos dated photographs of the project taken on last day of every month indicating progress of work (in soft copies) shall be attached along with the physical progress reports to be submitted to Engineer-in-charge.
- 18.6** The defined timelines for documents to be submitted post-award, though mentioned at various other places, are summarised as under:

Sr. No.	Document Title	From issue of Letter of Award
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		(On or before)
1	Time & Progress Chart for each mile-stone	10 days
2	Date of Commencement of Work	15 th day
3	Details of Contractor's Authorised Representative taking instructions from Engineer-in-charge	15 days
4	<u>Updated</u> Overall Project Schedule	15 days
5	CPM network/ PERT chart/ Bar Chart for completion of work within stipulated time	15 days
6	Submission of Irrevocable Performance Bank Guarantee (5% of tendered amount)	15 days
7	Quality Assurance Programme/ Plan	30 days
8	Detailed contract coordination procedure	30 days
9	Site organizational chart and individual personnel resume, including details of experience of the Project-in-Charge and other staff proposed to be deployed by him	30 days
10	Insurance Policies	30 days

Notes: Document Review and Submission Cycle

- (i) Post submission of the document by the Contractor, the Engineer-in-charge/ PMC-TPIA will review and provide comments/approval within fourteen (14) days of the receipt of respective documents.
- (ii) The contractor shall re-submit the documents (incorporating comments) within Five (5) days of receipt of the comments, for review/approval.
- (iii) The Engineer-in-charge/PMC-TPIA will be reviewing the same and providing comment s/approval within seven (7) days of the receipt of revised/updated document. The defined cycle will be followed till all the project requirements are complied with by the contractor and document is approved.

19.0 Taxes and Duties

- 19.1** The contract price is inclusive of all taxes, duties, cesses, fees, charges, interest/ late fees, incidental expenses, and statutory levies payable under any law (as applicable on the date of submission of bid) by the Contractor in connection with execution of the contract) but excluding the GST as applicable. The contract price shall be adjusted for any increase/ decrease in the rate of GST on works contract as notified by Government of India, from time to time..
- 19.2** Notwithstanding anything contained in clause 19.1, the Contractor shall ensure payment of applicable taxes on the supplies made under the contract. The Contractor shall take registration under the applicable enactment levying tax on supply of goods or services under the contract and issue invoices having all the particulars prescribed under the applicable provisions of law, including description of goods/services, rate and amount of tax paid or payable on the supplies made under the contract, so that the

Employer can avail credit of such tax, wherever applicable. The Contractor shall comply with all applicable provisions of Goods and Service Tax (GST) levied by Union Government and State Governments/ Union Territories (CGST, UTGST, SGST and IGST). The Contractor shall get himself registered and discharge his obligations for payment of taxes, filing of returns on time etc. under the appropriate provisions of law in respect of all the taxes, duties, levies, cess, etc. The Employer would have the right to seek necessary evidence that the Contractor is registered under the law and duly discharging its obligations under the tax laws, enabling the Employer to avail input tax credit, wherever admissible.

Whenever any GST, interest, penalty, late fees etc. is payable by the Employer on reversal of Input Tax Credit (ITC) or through cash payment under GST Act or rules due to default on Contractor's part, such as, non-filing/ late filing of GST returns, non-payment/ late payment of GST liabilities, delay in issue of invoices or non-appearance of GST invoice on the GST portal within the prescribed period, then in such an eventuality, the amount of GST, interest, penalty, late fees, if any, liable to be paid by the Employer under the said contract shall be borne by the Contractor and shall be recoverable from him.

- 19.3** In case the Contractor does not deposit the tax payable on execution of the contract, or has not provided the tax invoice to the Employer showing the amount of tax, or has not uploaded the document in computerized tax network as per prevailing law, leading to non-availability of inputs credit of the tax to Employer, the amount equivalent to such tax shall be retained or withheld from the subsequent RA Bill or payment to be made to the contractor on any account by the Employer till such time that the contractor ensures availability of input credit of the tax to the Employer.
- 19.4** The Contractor will be under obligation for charging correct rate of tax as prescribed under the respective tax laws from time to time during the entire duration of the contract. Further, the contractor shall avail and pass on benefits of all exemptions/concessions available under the tax laws to the Employer.
- 19.5** The Contractor will ensure its registration with the respective tax authorities and submit self-attested copy of such registration certificates to the Employer within 30 days of the award of LOA. The Contractor will be responsible for procurement of material on its own registration (GSTIN) and also to issue/ arrange its own Road Permit/ E-way Bill, if applicable, and comply with the statutory laws of the concerned state.
- 19.6** Any error of interpretation of applicability of taxes/ duties by the Contractor shall be to the Contractor's account. The classification of Goods & Services as per GST Act and charging of correct rate of tax as prescribed under the respective tax laws should be correctly done by the Contractor to ensure that input credit benefit is not lost to the Employer on account of any error on the part of the Contractor or its sub-contractor/vendor. The contractor must ensure that Employer is not subjected to any additional liability towards payment of applicable taxes & duties as a result of wrong classification, valuation, assessment/ interpretation of applicable taxes & duties by the Contractor and the contractor will reimburse all losses on this account to the Employer (if any).

19.7 GST shall be applicable on all advance payments as per GST Act, Rules and relevant notifications thereunder.

19.8 Stamp duty and registration charges, if any, under Income Tax/ GST Act, payable towards the execution of any and all contract documents/agreements, shall be borne by the Contractor.

19.9 Tax deduction at source (TDS), if any, under Income Tax/ GST Act, shall be made by the Employer as per law applicable from time to time, from the amount payable to the Contractor.

19.10 Statutory variations on IGST/ CGST/ SGST/ UTGST (included in quoted prices) in case of imported materials from outside India in Contractor's name (i.e. for Indian Bidders) shall be to the Contractor's account.

19.11 New Taxes & Duties

All new taxes, duties, cess, levies notified or imposed after the due date of submission of last/ final price bid before the contractual date of completion of work (including extended contractual completion period for the reasons attributable to the Employer or due to Force Majeure condition), shall be to the Employer's account. These shall be reimbursed against documentary evidence. In case of reduction/elimination of taxes, the necessary credit shall be given to the Employer. However, in case of delays attributable to the Contractor, any new or additional taxes and duties imposed after the Scheduled Completion Date, as above, shall be to the Contractor's account.

19.12 Any Other Taxes Duties and Levies

(i) Except as hereinabove specified, the Contractor shall be liable for and shall pay all fees, cesses, taxes, duties and levies assessable against the Contractor in respect of or pursuant to the Contract. If any legal/ departmental proceedings are initiated against the Contractor for short levy or non-levy of taxes, he shall be fully responsible to defend the same at his own.

(ii) In addition, the Contractor shall be responsible for payment of all duties, levies, and taxes assessable against the Contractor or Contractor's employees or Sub-Contractor's whether corporate or personal as applicable in respect of property.

(iii) The Contractor shall accept sole liability for the payment of any and all taxes, duties, cesses and levies, as are payable to any government, local or statutory authority in any country other than India as are now in force or as are hereinafter imposed, increased or modified and as are payable by the Contractor, his agents, Sub-Contractors and Suppliers and its/their respective employees for or in relation to the performance of this Contract. The Contractor shall be deemed to have been fully informed with respect to all such liabilities and shall be deemed to have considered and included the same in his bid. The quoted Price shall not be varied in any manner on this account.

20.0 Tax Deduction at Source

20.1 Income Tax Deduction (TDS)

Income tax deductions shall be made from all payments made to the Contractor including advances, in respect of the work/ project undertaken by the Contractor, in

accordance with the provisions of the Income Tax Act and Rules made thereunder prevailing and in force from time to time.

20.2 TDS under GST

TDS under GST, if applicable, shall be deducted from Contractor's bill at applicable rate and a certificate as per rules for tax so deducted shall be provided to the Contractor.

The Contractor shall be solely responsible and liable to deduct TDS, if applicable, from the sub-Contractors/ sub-vendors and remit the same to the Government within the due date, as per applicable laws.

20.3 Income Tax & Corporate Tax

- (i) The Contractor shall be solely responsible and liable to pay all Direct Taxes including income tax, profession tax and wealth tax on any payments arising out of the Contract, whether payable in India or in any other jurisdiction.
- (ii) The Contractor shall be responsible for ensuring compliance with all provisions of the Direct Tax laws of India including, but not limited to, the filing of appropriate Returns and shall promptly provide all information required by the Employer for discharging any of its responsibilities under such laws in relation to or arising out of the Contract.
- (iii) The Contractor shall indemnify the Employer against any and all liabilities or claims arising out of this contract for such taxes including interest and penalty which any tax authority may assess or levy on the Employer or its representatives.
- (iv) Tax shall be deducted at source by the Employer from all sums due to an Indian tax resident Contractor in accordance with the provisions of Indian Income Tax Act/ Rules as in force at the relevant point of time.
- (v) Corporate Tax Liability pertaining to contractor's work, if any, shall be to the Contractor's account.

20.4 Employer shall issue a Tax Deduction Certificate to the Contractor evidencing the Tax deducted or withheld and deposited by the Employer on payments made to the Contractor to enable the Contractor to claim the credit of the Tax deducted by the Employer.

20.5 Construction Workers' Cess / Labour Cess

- (i) The Contractor shall comply with the Building and Other Construction Workers' Welfare Cess Act, 1996, the Building and Other Construction Workers' (Regulation of Employment and Condition of Service) Central Rules, 1998 and the Building and Other Construction Workers' Welfare Cess Rules, 1998.
- (ii) Prices quoted by the bidder shall be deemed to be inclusive of construction workers cess/ labour cess.
- (iii) Cess as per the prevailing rate, shall be deducted at source from the bills of the Contractor and remitted to the "Secretary, Building and Other Construction Workers Welfare Board" of the concerned State by the Employer as per

regulations. The Contractor shall be responsible to submit final assessment return of the cess amount to the assessing officer after adjusting the cess deducted at source.

21.0 Royalty and other costs on Materials

The cost of procurement of materials required for construction, including the Royalty, Cess, Toll, Octroi, if applicable for procurement/ supply of materials such as bajri, stone, kankar, sand, ordinary earth and other materials etc. shall be deemed to be included in the quoted rates and nothing additional would be payable on this account.

22.0 Insurance of Works etc.

22.1 Contractor is required to take 'Contractor's All Risk Policy' or 'Erection All Risk Policy', as the case may be, before start of work from an approved insurance company in the joint name with first name of Employer and bear all costs towards the same for the full period of execution of works for the full amount of contract against all loss of damage from whatever cause arising other than excepted risks for which he is responsible under the terms of the contract and in such manner that the Employer and his authorized representatives and the Contractor are covered during the period of construction of works for loss or damage in respect of:

- (i) The work and the temporary works to the full value of such works.
- (ii) The materials, constructional plant, centring, shuttering and scaffolding materials and other things brought to the site for their full value.

The Contractor is required to submit the original policy document and the receipt for payment of the current premium to the Employer.

22.2 Insurance under Workmen Compensation Act

- (i) Contractor is required to take insurance cover under the Workman Compensation Act, 1923 amended from time to time from an approved insurance company and pay premium charges thereof.
- (ii) The Contractor is required to submit the original policy document and the receipt for payment of the current premium to Employer.

22.3 Third Party Insurance

- (i) Contractor is required to take third party insurance cover for an amount of 5% (five per cent) of contract value from an approved insurance company for insurance against any damage, injury or loss which may occur to any person or property including that of Employer, arising out of the execution of works or temporary works.
- (ii) The Contractor is required to submit the original policy document and the receipt for payment of the current premium to Employer.
- (iii) Engineer-in-charge to ensure that Insurance policies are submitted by the Contractor within 30 days from the date of issue of LOA. In case of failure of the Contractor to obtain Contractors All Risk Policy, insurance under Workman Compensation Act and third-party insurance as described above,

Employer reserves the right of forfeiture of the Performance Bank Guarantee.

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

22.4 The Contractor shall at all times indemnify the Employer against all claims, damages or compensation under the provision of Payment of Wages Act 1936, Minimum Wages Act 1948, Employer's Liability Act 1938, the Workmen's Compensation Act 1947, Industrial Disputes Act 1947 and Maternity Benefit Act 1961 or any modifications thereof or any other law in force or as a consequence of any accident or injury to any workman or other persons in or about the works, whether in the employment of the Contractor or not, against all costs, charges and expenses of any suit, action or proceedings arising out of such incident or injury and against all sum or sums which may, with the consent of the Contractor, be paid to compromise or compound any such claim. Without limiting his obligations and liabilities as above provided, the Contractor shall insure against all claims, damages or compensation payable under the Workmen's Compensation Act 1923 or any modification thereof or any other law relating thereto.

23.0 Payments

23.1 All running payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed and/or accepted by Engineer-in-Charge and shall not preclude the recovery for bad, unsound and imperfect or unskilled work to be removed and reconstructed or re-erected. The final bill shall be submitted by the Contractor within three months of the completion of work otherwise Engineer-in-Charge's certificate of the total measurement shall be binding on the Contractor.

- (i) Intermittent progress Photographs, as and when required, shall also be provided by the Contractor at his own cost as per the direction of Engineer-in-Charge. No payment of running account bill shall be released unless it is accompanied by photographs, Monthly Progress Report and tax invoices as stated above.
- (ii) It may be noted that GST shall be recoverable as extra on all applicable recoveries e.g. Workmen recovery, compensation etc. made from the bills of Contractor.
- (iii) The Running Bills will be submitted by the Contractor (in 4 copies), complete in all respects, on a monthly basis. The Engineer-in-Charge shall process and verify the same within 15 days of submission of the bill, complete in all respects, who shall then forward the same with his certification to the Employer. The Employer will make every effort to process the payment thereof within 15 days of receipt of the certified bill from the Engineer-in-Charge.

- (iv) All payments shall be released by way of e-transfer through RTGS in India directly to their Bank account by the Employer.
- (v) No Running Account Bill shall be paid for the work till the labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable, is submitted by the Contractor to the Engineer-in-Charge/Employer.

23.2 Payment of Final Bill

- (i) The final bill shall be submitted by the Contractor in the same manner as specified in the interim bills/ running bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge, whichever is earlier.
- (ii) No further claims shall be made by the Contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute for quantities and rates, as approved by Engineer-in-Charge, will, as far as possible be made within 3 months of submission of final bill. As regards the disputed items, the payment to the extent of amount considered reasonable/ acceptable to the Engineer-in-Charge shall be made along with the payment of undisputed items. However, the payment in respect of the remaining claim shall be resolved and paid as per the provisions in Clause 83.

23.3 Opening of Designated Bank Account for the Project

- (i) The Contractor shall maintain a separate bank account with a Scheduled Bank for the purpose of receiving all payments under the Contract and for utilization of payments received from the Employer for disbursement to sub-Contractors, sub-vendors, PRW's, suppliers etc. for this contract. The Contractor shall maintain separate Books of Account for all payments under this contract and the Engineer-in-Charge shall have access to it at all times.

24.0 Measurements of Works

- (i) Engineer-in-charge shall, except as otherwise provided, ascertain and determine by measurement, the value of work done in accordance with the contract. Except where any general or detailed description of the work expressly shows to the contrary, measurement shall be taken in accordance with the procedure set forth in the CPWD Specifications. In the case of items, which are not covered by specifications, mode of measurement as specified in the Technical Specifications of the contract, and if for any item no such technical specification is available, then a relevant standard method of measurement issued by the Bureau of Indian Standard shall be followed.
- (ii) Provided further that, in case of Cancellation/ Determination of Contract in Full or in Part in accordance with clause 12.0 (and its sub-clauses), following methodology shall be adopted in respect of measurements in addition to what has been mentioned in foregoing:
 - (a) All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the Contractor or his authorized representative from time to time during the progress of the work

and such measurements shall be signed and dated by the Engineer-in-Charge and the Contractor or their representatives as token of their acceptance. If the Contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by Engineer-in-Charge & the Contractor.

- (b) If for any reason, the Contractor or his authorized representative is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the Engineer-in-Charge shall not entertain any claim from Contractor for any loss or damages on this account. If the Contractor or his authorized representative does not remain present at the time of such measurements after the Contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor.
- (c) The Contractor shall, without any extra charge, provide all assistance with every appliance, equipment, scaffolding, labour and any other things necessary for recording the measurements.

25.0 Computerised Measurement Books

- (i) Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract. All measurements of all items having financial value shall be entered by the Contractor and compiled in the shape of the Computerized Measurement Book as per the format provided by Engineer-in-Charge so that a complete record is obtained of all the items of works performed under the contract. All such measurements and levels recorded by the Contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the Contractor from the Engineer-in-Charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his authorized representative.
- (ii) After the necessary corrections made by the Engineer-in-Charge, the measurement sheets shall be returned to the Contractor for incorporating the corrections, and for resubmission to the Engineer-in-charge for the dated signatures by the Engineer-in-Charge and the Contractor or their representatives in token of their acceptance.
- (iii) Whenever a Running Account bill is due for payment, the Contractor would initially submit draft computerized measurement sheets and these measurements would be got checked/ test- checked from the Engineer-in-Charge and/or his authorized representative. The Contractor will, thereafter, incorporate such changes as may be done during these checks/ test checks in his draft computerized measurements, and submit it to Engineer-In-Charge in both Soft and Hard copies.
- (iv) All the required documents viz. measurement sheets, summary of quality test reports, ESIC/EPF challans, Tax invoice, theoretical v/s actual consumption of material (as required by Engineer-in-Charge) etc. shall also be submitted along with the RA bill in both soft and hard copies.

- (v) The Contractor shall give not less than seven days' notice to the Engineer-in-Charge or his authorized representative before covering up or otherwise placing beyond the reach of checking and/or test checking the measurement of any work. The Contractor shall not cover up and place beyond reach of measurement any work without consent of the Engineer-in-Charge or his authorized representative in writing in order to ensure the proper checking and measurement thereof. The Engineer-in-Charge or his authorized representative shall within the aforesaid period of seven days inspect the work, and if any work is found to be covered up or placed beyond the reach of checking and/or test checking measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing, the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.
- (vi) It is also a term of this contract that checking and/or test checking the measurements of any item(s) of work in the Measurement Book and/or its payment in the interim, on account of final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the Contractor from liabilities from any over measurement or defects noticed till the final completion of the work and certification thereof.

26.0 Withholding & Lien In Respect of Sums Due From Contractor

- (i) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the Contractor, Employer shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the Security Deposit by the Contractor and for the purpose aforesaid, Employer shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the Contractor, Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the Contractor under the same contract or any other contract pending finalization of adjudication of any such claim.
- (ii) It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Employer will be kept withheld or retained till the claim arising out of or under the contract is determined by the competent authority and that the Contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the Contractor. For the purpose of this clause, where the Contractor is a partnership firm or a limited company, the Engineer-in-Charge or the Employer shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/ limited company, be whether in his individual capacity or otherwise, as the case may be. Employer shall have the right to cause an audit and technical examination of the works and the final bills of the Contractor including all supporting vouchers, abstract etc. to be made after payment

of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the Contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the Contractor shall be liable to refund the amount of overpayment and it shall be lawful for Employer to recover the same from him in any other manner legally permissible. If it is found that the Contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by Employer to the Contractor, without any interest thereon whatsoever.

Lien In Respect of Claims in Other Contracts

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

27.0 Work to be executed in accordance with Specifications, Drawings and Orders etc.

- (i) All items of work in the bill of quantities/ schedule of quantities shall be carried out as per the CPWD specifications, drawings and instructions of the Engineer-in-Charge and the rates shall include procurement and supply of required materials including proper storage, consumables, skilled & unskilled labour, supervision and tools, plant & machinery complete as called for in the detailed specifications and conditions of the contract. Latest updated CPWD specifications shall be followed for execution of work.
- (ii) The Contractor shall execute the whole of the work in the most substantial and workman like manner for materials and otherwise in all other aspects in strict accordance with the specifications. The Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work assigned by the Engineer-in-Charge.
- (iii) The Contractor shall comply with the provisions of the contract and execute the works with due care and diligence and maintain the works and provide all labour and materials, tools and plants, including for measurements and supervision, of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability, and safety of all the works and methods of construction.

28.0 Materials to be provided by the Contractor

- (i) The Contractor shall, at his own expense, provide all materials required for the works. The Contractor at his own expense and without delay provide to the Engineer-in-Charge samples of materials to be used on the work and shall get the same approved in advance. In some cases, the contractor would be instructed by the engineer in charge to create mood boards with a set of samples being available at the same place and time to justify the design aspects for getting Employer's approvals. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The Contractor shall, if requested by the Engineer-in-Charge, furnish proof to the satisfaction of the Engineer-in-Charge regarding the material being conforming to the specifications. The Contractor shall submit the samples of materials to be tested or analysed and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications.
- (ii) The Engineer-in-Charge or his authorized representative/ Employer/ PMC/ TPIA shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles, equipment's or machinery are being obtained for the works and the Contractor shall offer every assistance in obtaining the right to visit and ensure physical visit to such works as directed by engineer-in-charge. The cost for travelling and accommodation to these works of the engineer in charge or his authorized representatives will be borne by the Employer/ PMC/ TPIA apart from those specifically written in the Special conditions of contract. However, the costs towards the contractor or his representatives towards the costs of such visits will be borne by the contractor. The Engineer-in-Charge shall have full powers to instruct the contractor for acceptance, rejection, improvement or substitution prior to delivery on site of any such material that he might have undertaken to inspect the materials at the works.
- (iii) The Engineer-in-Charge shall have full powers to instruct the contractor for removal of all materials from the site/premises, which in his opinion are not in accordance with the specifications. In case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the Contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full power to require other proper materials to be substituted thereof and in case of default, the Engineer-in-Charge may cause the same to be supplied by others at the risk and cost of the contractor. All such costs for removal and substitution shall be borne by the Contractor.
- (iv) The Contractor shall ensure that the materials are brought to the site in original sealed containers (except where the packing, bearing manufacturer's markings and brands, and quantity required is a fraction of the smallest packing). Materials not complying with this requirement shall be rejected. The empty containers of such materials shall not be destroyed/disposed-off without the permission of Engineer-in-Charge or his authorized representative.
- (v) The Contractor shall produce receipt vouchers showing quantity of materials to satisfy the Engineer-in-Charge that the materials comply with the contract stipulations. These

vouchers shall be endorsed, dated and signed by the Contractor. A certified copy of each such voucher signed both by the Engineer-in-Charge and the Contractor shall be kept on record.

29.0 Materials, Samples and Testing

- (i) The materials/products used on the works shall be one of the approved makes/ brands out of the list of approved manufacturers/ brands/ makes given in the tender document. The Contractor shall submit samples/specimens out of approved makes to the Engineer-in-Charge for prior approval.
- (ii) In case single brand/ make are mentioned, other equivalent makes/ brands may be considered by the Engineer-in-Charge on the request of the Contractor. In case of variance in CPWD/IS/BIS specifications from approved products/makes specification, the specification of approved product/ make shall prevail for which nothing shall be paid extra to the Contractor. In case no make or brand of any materials, articles, fittings and accessories etc. is specified, the same shall comply with the relevant Indian Standard Specifications and shall bear the ISI/BIS mark and meet the contractual specifications. The Engineer-in-charge shall have the discretion to check quality of materials and equipment to be incorporated in the work, at source of supply or site of work and even after incorporation in the work. The Contractor shall provide the necessary facilities and assistance for this purpose.
- (iii) The above provisions shall not absolve the Contractor from the quality of final product and in getting the material and workmanship quality checked and approved from the Engineer-in-Charge/Employer.
- (iv) The Contractor shall well in advance, produce samples of all materials, articles, fittings, accessories etc. that he proposes to use and get them approved in writing by the Engineer-in-Charge. The materials, articles etc. as approved shall be labelled as such and shall be signed by Engineer-in-Charge and the Contractor's representative.
- (v) The approved samples shall be kept in the custody of the Engineer-in-Charge till completion of the work. Thereafter the samples, except those destroyed during testing, shall be returned to the Contractor. No payment will be made to the Contractor for the samples or samples destroyed in testing.
- (vi) The Contractor shall set up and maintain at his cost, a field-testing laboratory for all day-to-day tests at his own cost to the satisfaction of the Engineer-in-Charge. This field-testing laboratory shall be provided with equipment and facilities to carry out all mandatory field tests as per CPWD specifications. The Field-testing laboratory shall be constructed and installed with appropriate facilities. Temperature and humidity controls shall be available, wherever necessary, during the testing of sample(s). All equipment shall be provided by the Contractor so as to be compatible with the specified testing requirements.
- (vii) The Contractor shall maintain all the equipment in good working condition for the duration of the contract. The Contractor shall provide/ deploy approved qualified personnel to run the laboratory for the duration of the Contract. The number of staff and equipment available must be sufficient to keep pace with the sampling and testing programme as required by the Engineer-in-charge. The Contractor shall fully service

the site laboratory and shall supply everything necessary for its proper functioning, including all transport needed to move equipment and samples to and from sampling points on the site, etc. All measuring devices/equipment shall be calibrated, and Contractor shall keep the records of valid calibration certificates of devices/equipment at the field laboratory for inspection by Engineer-in-Charge at all times. All field tests shall be carried out in the presence of Engineer-in-Charge or his representative.

- (viii) All costs towards samples, materials, collection, transport, manpower, testing etc. shall be borne by the Contractor and are deemed to be included in the rates quoted by him in the bill of quantities.
- (ix) In the case of certain materials pertaining to mechanical, electrical, and plumbing (MEP) works, the Contractor shall be responsible for getting the items tested from Employer/ PMC approved laboratories at his own cost as per the tests written in the Special conditions of contract (SCC) or as deemed fit by engineer in charge, when it is not found feasible to establish a testing facility at site in respect of such items.

30.0 Makes of Materials

The materials required to be supplied by the Contractor under this contract shall be procured from the list of approved manufacturers/ brands/ makes enclosed in the contract document. Where the makes of materials are not indicated in the Bidding document, Contractor shall furnish the details of makes/ brands and shall obtain prior approval of Engineer-in-Charge before placing order. Additionally, refer clause No. 22 of Technical Specifications.

31.0 Materials Procured with the Assistance of Engineer-in-Charge

If any material for the execution of this contract is procured with the assistance of Engineer-in-Charge by issue from its stores, the Contractor shall use the said materials solely for the purpose of contract and shall not dispose them without the permission of Engineer-in-Charge. The rate for these materials shall be as per the contract or as per the material rates of DSR (if applicable)/Market Rate + GST. The Contractor shall deploy security personnel for safe-keeping and safeguarding of all such materials procured at site and handed over to the contractor by the Engineer-in-Charge. The contractor will satisfy himself with the quantity, specifications and quality of the material being procured with the assistance of the Engineer in charge so as to ensure that the works are done in accordance with the contractual stipulations. The contractor is not allowed to raise any claim/deviation/relaxation on the use of any/all such material post the handover of the material by the Engineer-in-Charge. The contractor though can submit his objections in writing for the consideration of the engineer in charge prior to accepting the handover of any/all such material.

32.0 Contractor to Supply Tools & Plants

The Contractor shall provide at his own cost all materials, machinery, tools & plants as required for execution of the work. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the

proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of completion of the work. The Contractor shall also supply without any charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting in the measurement or examination at any time and from time to time of the work or materials. In the event of his failure to do so, the same may be provided by the Engineer-in-Charge at the expense of the Contractor and the expenses thereon shall be recovered from any money due to the Contractor under this contract or otherwise and/ or from his security deposit.

33.0 Mobilization of Men, Materials and Machinery

- (i) All expenses towards mobilization at site and de-mobilization including bringing in equipment, work force, materials, dismantling the equipment, clearing the site etc. shall be deemed to be included in prices quoted and no separate payment on account of such expenses shall be entertained.
- (ii) It shall be solely the Contractor's responsibility to provide, operate and maintain all necessary construction equipment, scaffoldings and safety, gadget, lifting tackles, tools and appliances to perform the work in a workman-like and efficient manner and complete all jobs as per the specifications and within the scheduled time of completion of work. Contractor shall also be responsible for obtaining temporary electric and water connections for all purposes. The Contractor shall also make standby arrangements for un-interrupted supply of water & electricity.
- (iii) The procurement and supply in sequence and at the appropriate time of all materials and consumables shall be solely the Contractor's responsibility and his rates for execution of work shall be inclusive of supply of all these items.
- (iv) It is mandatory for the Contractor to provide safety equipment and gadgets to all his workers, supervisory and technical staff engaged in the execution of the work while working. The minimum requirement (but not limited to) shall be gumboots, safety helmets, Rubber hand- gloves, face- masks, safety- nets, safety-belts, goggles, hand sanitizers etc. as per work requirements. The Contractor shall keep a few spare sets of such gadgets for use by the Employer or the Engineer-in-Charge and /or his representative or any other inspecting teams. No staff/ worker shall be allowed to enter the site without these equipment/ gadgets.
- (v) The cost of the above equipment/ gadgets is deemed to be included in the rates quoted by the Contractor and the Contractor shall not be entitled for any extra payment in this regard. The Contractor shall abide by the regulations pertaining to Health, Safety and Environment as per the HSE policy attached elsewhere as a part of this contract.
- (vi) All designs, drawings, bill of quantities etc., except Bar Bending Schedule, Shop & Fabrication drawings, for all works shall be supplied to the Contractor for his scope of work by the Engineer-in-charge in a phased manner, as the works progresses. However, it shall be the duty and responsibility of the Contractor to bring to the notice of the Engineer-in-charge as to any variation, discrepancy or any other changes

- required and to obtain revised drawings and designs and/ or approval of the Engineer-in-Charge in writing for the same.
- (vii) One copy of contract documents, including drawings furnished to the Contractor, shall be kept at the site and the same shall at all reasonable times be available for inspection of Engineer-in-charge and his authorised representatives.
 - (viii) All materials, construction plants and equipment etc. (including scrap of brought in material) once brought by the Contractor within the project area will not be allowed to be removed from the premises without the written permission of the Engineer-in-charge. Similarly, all enabling works built by the Contractor for the main construction undertaken by him, shall not be dismantled, and removed without written permission of the Engineer-in-charge.
 - (ix) The Contractor shall need to furnish list of equipment/ machinery/ plants available with the Contractor along with the details/ capacities and manufacturing year of each equipment/ machinery/ plant.
 - (x) Contractor shall prepare the Bar Bending Schedule, Shop and fabrication drawings at no extra cost to the Employer, whenever required / necessary for any of the items of work as directed by the Engineer-in-charge. Five copies of these drawings and documents will be submitted to the Engineer-in-charge/Employer for approval, at least 30 days prior to execution of the works related to these documents and drawings.
 - (xi) All Contractor's plant, machinery and equipment shall be kept in perfect working condition during currency of the contract.

34.0 Health, Safety and Environment (HSE) Management

- (i) The Contractor, during entire duration of the Contract, shall adhere to HSE requirement as enclosed in the Bidding Document as Annexure-VIII to SCC.
- (ii) The contractor shall also barricade the site with minimum 3 mtr high sheets or as per the requirement of Green Tribunal/ State Pollution Control Board/ Environment Department or any directions by the local administration during the entire duration of the contract wherever required. Nothing extra shall be paid on this account.
- (iii) Safety Regulations
The Contractor shall abide by all safety regulations and ensure that safety equipment for specific jobs, as stipulated in the factory act/ safety handbook, is issued to workers during execution of work, failing which all the works at site shall be suspended.
- (iv) Security
The Contractor shall make proper security arrangements at his own cost for the materials at site & the works till handing over of the works to the Employer/ Engineer-in-Charge.

35.0 Quality Assurance Programme

- (i) To ensure that the services under the scope of this contract are in accordance with the specifications, the Contractor shall adopt Quality Assurance Programme to control such activities at the necessary points. The Contractor shall prepare and submit to

Engineer-in-Charge such Quality Assurance Programme within 30 days from date of issue Letter of Award for approval. Engineer-in-charge shall also carry out quality audit and quality surveillance of systems and procedures of Contractor's quality control activities. A Quality Assurance Programme of Contractor shall generally cover the following:

- (a) His organization structure for the management and implementation of the proposed Quality Assurance Program;
 - (b) Documentation control system;
 - (c) The procedure for materials and source inspection;
 - (d) System for site controls including process controls;
 - (e) Control of non-conforming items and systems for corrective actions;
 - (f) Inspection and test procedure for site activities;
 - (g) System for indication and appraisal of inspection status;
 - (h) System for maintenance of records;
 - (i) System for handling, storage, and delivery; and
 - (j) A quality plan detailing out quality practices and procedures, relevant acceptance levels for all types of work under the scope of this contract.
- (ii) The Contractor shall maintain all the quality reports. Checklists & Registers as per CPWD norms in this regard shall be submitted to the Engineer-in-Charge for approval and the same shall be adopted. If any item is not covered by the Check-list/ Register, the Format for the same may be developed and submitted to the Engineer-in-Charge for approval and the same shall be adopted. These filled-in reports shall be duly signed by representatives of the Contractor and the Engineer-in-charge. All the costs associated with Printing of Formats and testing of materials required as per technical specifications or as per instructions of Engineer-in-Charge shall be included in the Contractor's quoted rates in the Schedule/ Bill of quantities. Nothing extra shall be paid to the Contractor on this account.

36.0 Contract Coordination Procedures, Coordination Meetings and Progress Reporting

The Contractor shall prepare and finalize a detailed contract coordination procedure within 30 days from the date of issue of Letter of Award in consultation with the Engineer-in-charge for the purpose of execution of the Contract. The Contractor shall have to attend all the meetings at any place in India at his own cost with the representatives of the Employer, the PMC, the TPIA and their representatives during the currency of the Contract, as and when required and fully co-operate with such personnel and agencies involved during these discussions. The Contractor would be advised to deal with the Employer/ PMC only through the Engineer-in-Charge and any dealing/correspondence, if required, at any time with the Employers/ PMC/ TPIA shall be done through Engineer-in-Charge only.

37.0 Protection of Existing Facilities

- (i) Contractor shall obtain full details of all existing and planned underground services from concerned agencies and shall always follow these closely during the performance of work. Contractor shall be responsible for location and protection of all underground lines, structures, power cables, OFC cables etc. at his own cost.
- (ii) Despite all precautions, should any damage to any structure/ utility etc. occur, the Contractor shall immediately inform the Engineer-in-Charge and the Contractor shall forthwith carry out repair at his expense under the direction and to the satisfaction of Engineer-in-Charge. If the same is not attended by the Contractor within the said time period, it will be got done at the risk and cost of the contractor through other agencies.
- (iii) Contractor shall take all precautions to ensure that no damage is caused to the existing pipelines, cables etc. during services.

38.0 Completion Plans and Completion Certificate

- (i) Within ten days of completion of the work, the Contractor shall give notice of such completion to the Engineer-in-Charge. On the receipt of such notice, the Engineer-in-Charge shall within thirty days inspect the work and if there is no defect in the work, he shall furnish the Contractor with a final certificate of completion.
- (ii) In case of any shortcomings/ defects, a provisional certificate of physical completion indicating the defects (a) to be rectified by the Contractor, and/or (b) for which payment will be made at reduced rates, shall be issued.
- (iii) However, no final certificate of completion shall be issued, nor shall the work be considered to be complete until the Contractor shall have removed from the premises on which the work is executed, all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work, people on the site in connection with the execution of the works and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution. Similarly, no completion Certificate shall be issued until the work shall have been measured by the Engineer-in-Charge.
- (iv) If the Contractor shall fail to comply with the requirements of this clause as regards removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may remove such scaffolding, surplus materials and rubbish etc. at the expense of the Contractor and dispose of the same as he deems fit and clean off such dirt as aforesaid, and the Contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof less actual cost incurred on removal of materials/ debris / malba etc.
- (v) The Contractor shall be responsible for handing over of the completed works including signing of inventories by the Engineer-in-charge on a pre-approved format.
- (vi) The Contractor shall, during the course of execution, prepare and keep updated a complete set of 'As Built' drawings to show each and every change from the contract /

tender /GFC drawings, changes recorded shall be counter-signed by the Engineer-in-Charge and the Contractor.

No payment of final bill shall be released to the Contractor until final work completion certificate is obtained from Employer.

39.0 Completion Documents

The following documents shall be submitted in soft copy and hard-binders by the Contractor in 05 (Five) sets as a part of completion documents:

- (i) Test Certificates, Warranty/ Guarantee certificates and copies of Purchase Orders (Required for Warranty/ Guarantee).
- (ii) All other documents as specified in the respective specifications.
- (iii) Complete set of "As-built" drawings showing therein corrections and modifications (if any) made during the course of execution of the Works, signed by the Engineer-in-Charge;
- (iv) Declaration by the Contractor that it has duly cleared any and all of the dues payable by it to its labourer, employees, piece-rate workers (PRWs), and other personnel, sub-Contractors, suppliers, vendors, GST, income Tax, entry tax, excise, customs duty, provident fund, employees state insurance (ESI) and royalties, or other amounts payable under any Applicable Law (if any) and Certificate towards 'No claim' other than the claim in the Final bill.

40.0 Prohibition of Unauthorised Construction & Occupation

- (i) No unauthorized buildings, construction of structures should be put up by the Contractor anywhere on the project site, neither any building built by him shall be occupied in un-authorized manner by him or his staff.
- (ii) It shall be the responsibility of the Contractor to see that the building under construction is not occupied by anybody in un-authorized manner during construction and is handed over to the Engineer-in-Charge with vacant possession of complete building. If such building, though completed, is occupied unauthorisedly/ illegally, then the Engineer-in-Charge shall have the option to refuse to accept the said building/ buildings in that position. Any delay in acceptance on this account will be treated as delay in completion and, levy of Penalty may be imposed in line with Clause 8.0 of GCC for such delay.

41.0 Foreclosure of Contract

- (i) If at any time after acceptance of the tender or during the progress of work, the purpose or object for which the work is being done changes due to any unforeseen and compelling reasons and as a result of which the work has to be abandoned or reduced in scope, the Engineer-in-Charge shall give notice in writing to that effect to the Contractor stating the decision as well as the cause for such decision and the Contractor shall act accordingly in the matter. The Contractor shall have no claim of any compensation or otherwise, whatsoever, on account of any profit, loss of profit or advantage which he might have derived from the execution of the works in full but

which he did not derive in consequence of the foreclosure of the whole or part of the works.

- (ii) The Contractor shall be paid for the works executed at site at contract rates at the time of Foreclosure.
- (iii) The Contractor shall, if required by the Engineer-in-Charge, furnish to him, books of account, wage books, time sheets and other relevant documents and evidence as may be necessary to enable him to certify the reasonable amount payable under this condition.
- (iv) In the event of action being taken under Clause 14.0 to reduce the scope of work, the Contractor may furnish fresh Performance Guarantee on the same conditions, in the same manner and at the same rate for the balance tendered amount and initially valid up to the extended date of completion or stipulated date of completion if no extension has been granted plus minimum 60 days beyond that. Wherever such a fresh Performance Guarantee is furnished by the Contractor, the Engineer-in-Charge/Employer may return the previous Performance Guarantee.

42. Defects Liability Period

- (i) The Contractor shall be responsible for rectification of defects in the works for a period 5 (Five) years from the date of issue of Completion Certificate by the Engineer-in-Charge. Any defects, except normal wear & tear, discovered and brought to the notice of the Contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the Contractor fails to carry out these rectifications, the same may, without prejudice to any other right or remedy available, be got rectified by Engineer-in-Charge at the risk and cost of the Contractor.

Provided that the Contractor shall not be liable for any such structural/ architectural defect as may be induced by the allottee(s), by means of carrying out structural or architectural changes from the original specification designs.

- (ii) A part of the security deposit will be retained towards defect liability as per Clause 3.0 of the GCC above. The final amount towards defect liability would be released after 5 years from the actual date of completion or the final justified extended date of completion.

43. Sub-Letting / Sub-Contracting

No subletting of whole work or part shall be allowed. However, the Contractor may engage the sub-Contractor for specialized works as mentioned below:

- (i) The Contractor, after obtaining approval from the Engineer-in-Charge, shall engage specialized agencies in respect of the following works at site, in case the Contractor does not have such in-house expertise:
 - (a) Anti-termite treatment.
 - (b) Water proofing works.
 - (c) Painting work.
 - (d) Fire Fighting works

- (e) Electrical / LV Works
 - (f) HVAC Works
 - (g) BMS works
 - (h) Horticulture works
 - (i) Swimming Pool work,
 - (j) Tree Transplantation Works, if any
 - (k) Any other work as directed by Engineer-in-Charge
- (ii) If the Contractor is required to engage a Sub-Contractor for any part of work, then such Sub-Contractors shall have prior proven experience of similar work and shall require specific approval by the Engineer-in-charge.
 - (iii) The Contractor will submit to the Engineer-in-Charge for approval, the details of Sub-Contractors as per the format enclosed as Form XIV at Section 4 for approval. Contractor shall ensure that very competent and resourceful agencies with proven track record and performance should be proposed for the work to be sub-contracted.
 - (iv) However, whatever arrangements are made by the Contractor for sub-letting any part of the work/ getting any part of the work executed through a sub-contractor, getting the works executed from such sub-contractors or payments to such sub-contractors shall always remain the responsibility of the Contractor and the Employer shall not in any manner deal with such sub-contractors.
 - (v) Notwithstanding any consent to sub-contract given by the Engineer-in-Charge, if in his opinion it is considered necessary, the Engineer-in-Charge shall have full authority to order the removal of any sub-Contractor from the site.

44. Execution of Electrical Works

The Contractor shall engage an approved electrical agency for execution of electrical works, holding valid electrical Contractor licence. In case the Contractor himself executes electrical works, then he shall arrange valid electrical Contractor licence before start of electrical works at site.

45. Force Majeure

- (i) Any delay in or failure to perform on the part of either party, shall not constitute default so as to give rise to any claim for damages, to the extent such delay or failure to perform is caused by an act of God, due to Pandemic, or by fire, explosion, flood or other natural catastrophe, governmental legislation, orders or regulation etc. The time for performance of the respective obligations by the parties shall be deemed to be extended for a period equal to the duration of the force majeure event. Both parties shall make their best efforts to minimize the delay caused by the force majeure event. If the failure/ delay of the Employer in handing over the entire site and/ or in releasing the funds continues even on the expiry of the stipulated date of completion, Engineer-in-charge, may, at the request of the Contractor, foreclose the contract without any liability to either party. In the event of such foreclosure, the Contractor shall not be

entitled to any compensation whatsoever. If prior to such foreclosure, the Contractor has brought any material at site and which remain unused, the Engineer-in-Charge shall always have the option of taking over of all such materials at their purchase price or at the local current /DSR rates, whichever is lower.

- (ii) The Contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in this clause.

46. No Compensation

The Contractor shall have no claim, whatsoever, for compensation or idling charges against the Employer or his authorized representative on any ground or for any reason, whatsoever.

47. Directions for Works

- (i) All works under the contract shall be executed under the direction and subject to approval in all respects of the Engineer-in-Charge.
- (ii) The Engineer-in-Charge and his authorized representative shall communicate or confirm their instructions to the Contractor in respect of execution of work during their site inspection in a 'Works Site Order Book' maintained at the site office of Engineer-in-Charge. The Contractor or his authorized representative shall confirm receipt of such instructions by signing against the relevant orders in of the Site Order Book. A soft copy of this "works site order book" shall be mailed to the contractor and Employer/PMC/TPIA monthly.

48. Work in Monsoon Season and Rains

The execution of the work may entail working in the monsoon season also. The Contractor must maintain labour force as may be required for the work and plan and execute the construction and erection according to the prescribed schedule. No special/ extra rate will be considered for such work during the monsoon season. The stipulated period for completion of project includes the monsoon period, holidays & festivals and the contractor shall make provisions of the same in the contract scheduling submitted to the engineer in charge/Employer. Further;

- (i) During monsoon season and other periods, it shall be the responsibility of the Contractor to keep the construction work site free from any water accumulation at his own cost by making suitable arrangements/ deploying de-watering pumps.
- (ii) Contractor must take due cognizance of the presence of monsoon/ rainy season/ days in his scheduled completion period and accordingly, take all necessary measures to protect, reorganize and maintain progress on the work without any interruptions.
- (iii) No extension of time due to interruption/suspension of work, waterlogging, reduced/ slowing down of progress, non-availability of manpower etc., whatsoever may be the reason, shall be tenable on account of monsoons/ rains and further no claim for stand-by of manpower and equipment, other resources etc. shall be paid for subject to provisions under Clause 17 of the General conditions of contract.
- (iv) Contractor shall procure and stock sufficient quantities of materials viz. coarse and

fine aggregates, bricks etc. adequate for the planned volume of the work during the monsoons, well in advance of the onset of same so that progress of work is not affected on this account.

- (v) All electrical installations, equipment shall be placed on plinths above ground under proper rain sheds to avoid any inundation, short circuit and hazards of electrocution.
- (vi) Price shall be inclusive of all costs and expenses including supply of materials required for monsoon protection like tarpaulins, shed, structural, GI sheet etc. for the above provisions and no separate payment shall be made on this account.

49. Work on Sundays, Holidays and During Night

For carrying out work on Sundays and Holidays or during night, the Contractor shall make necessary arrangements to carry out the works at no extra cost to the Employer, under intimation to the Engineer-in-Charge.

50. Water and Electricity

The Contractor shall make his own arrangements for Water, fit for construction, use & Electrical Power for construction including all necessary materials and equipment's for its distribution and utilisation for construction activities and other purposes at his own cost. The Contractor shall also make standby arrangements for water & electricity to ensure un-interrupted supply of water and electricity for smooth progress of works as per relevant clauses in the special conditions of contract (SCC).

51. Land for Labour Huts/ Site Office and Storage Accommodation

- (i) The Contractor may construct temporary office, storage, accommodation, and labour huts within the site premises with prior approval of the Engineer-in-Charge. In case, where surplus land is not available within the site and/or not permitted by the Employer, the Contractor shall arrange the land for temporary office, storage, accommodation and labour huts at his own cost and shall be responsible for taking the clearance of local authorities, if required, for setting up/construction of labour camp and the same is deemed to be included in the rates quoted by the Contractor for the works. The Contractor shall check the availability of land before tendering and no claim whatsoever shall be entertained in this regard.
- (ii) The Contractor shall ensure that the labour huts are kept clean and in hygienic conditions. The land for the above purposes shall be so placed that it does not hinder the progress of work or access to the worksite. Vacant possession of the land used for the purpose shall be given back by the Contractor to Employer/ authority after completion of the work.
- (iii) The security deposit of the Contractor shall be released only after the Contractor demolishes all temporary structures and clears the site to the satisfaction of Engineer-in-Charge. In the event the Contractor has to shift his labour camps at any time during execution of the work on the instructions of local authorities or as per the requirement of the work progress or as may be required by the Engineer-in-Charge, he shall comply with such instructions at his risk and cost and no claim whatsoever shall be

entertained on this account.

52. Watch & Ward and Lighting of Work Place

- (i) The Contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, obstructions, lights, watchmen etc. during the progress of work as directed by Engineer-in-Charge.
- (ii) The Contractor shall provide uninterrupted lighting of the work-place and surrounding areas during the night hours with a minimum lux level of 10-15 lux. No additional payment shall be made on this account and the cost in this regard is deemed to be included in the quoted rates.

53. Installation of Sign Boards

The Contractor shall fix/ install Construction/safety sign boards of suitable sizes and in adequate numbers as per the instructions of Engineer-in-Charge before/during the execution of work. No additional payment shall be made to the Contractor on this account.

54. Cement and Cement Godown

- (i) Cement shall be procured by Contractor in line with the technical specifications and requirement of the contract.
- (ii) The cement shall be procured directly from the reputed manufacturers/ stockists as per list of approved makes. Relevant vouchers and test certificates will be produced as and when required by the Engineer-in-charge. It shall be stored by the Contractor in 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 CPWD specifications at his own cost. Cement bags shall be used on "first-in -first -out" basis. Cement stored beyond 90 days will not be used in structural works. However, this cement can be used in other works after getting the cement tested and found suitable as per relevant IS codes at Contractor's cost and accepted by Engineer-in-charge, before use in works.

55. Steel & Steel Stockyard

Steel conforming to contract specifications/ BIS specifications (latest edition) shall be procured by the Contractor directly from reputed manufacturers/ producers as per list of approved makes. Relevant vouchers & test certificates will be produced by the Contractor. Reinforcement steel, structural steel shall be stored and stacked in such manner so as to facilitate easy identification, removal etc. The Contractor shall take proper care to prevent direct contact between the steel and the ground/water for which he shall provide necessary arrangement at his own cost including ensuring proper drainage of area to prevent water logging as per directions of the Engineer-in-Charge. Steel shall also be protected by applying a coat of neat cement slurry or any other protective treatment over the TMT bars in order to save it from any rusting, for which no extra payment shall be made. Test certificates for each consignment of steel shall be furnished and tests will be got carried out from the authorized NABL

accredited laboratory, as per the directions of the Engineer-in-Charge, before incorporating the materials in the work.

56. Schedule of Quantities/ Bill of Quantities

The quantities shown against the various items of work are approximate quantities, which may vary as per the actual requirement of work. Any variation in quantities, if occurs during the execution of the works, will be dealt as per the provisions of the contract.

57. Water - proof Treatment

57.1 The water-proof treatment shall be of type and specifications as given in the schedule of quantities.

57.2 The water-proofing of basement, roofs, water retaining areas shall be and remain fully effective for a period of not less than 10 (Ten) years to be reckoned from the date of issue of Completion Certificate, prescribed in the contract. If any defect or any evidence of re-infestation, dampness, leakage in any part of buildings or structure is found in the said treatment at any time during the said guarantee period and the Contractor is notified of the same, the Contractor shall be liable to rectify the defect or give re-treatment. The Contractor shall commence the work or such rectification or re-treatment within seven days from the date of issue of such letter to him. If the Contractor fails to commence such work within the stipulated period, the Employer may get the same done by deploying another agency at the Contractor's risk & cost.

57.3 Water- proofing shall be got done through approved/ specialized agencies only with prior approval of Engineer-in-Charge.

57.4 During the execution of work, if any damage occurs to the treatment already done, either due to rain or any other circumstances, the same shall be rectified and made good to the entire satisfaction of Engineer-in-Charge by the Contractor at his cost and risk.

57.5 The Contractor shall make his own arrangement for all equipment required for the execution of the job. The Contractor shall execute a Guarantee Bond in the prescribed form as appended for guaranteeing the water-proofing treatment.

58. Indian Standards

Wherever any reference is made to any BIS in any particular specifications, drawings or bill of quantities, it means the Indian Standards editions with up-to-date amendments issued till the last date of receipt of tender documents.

59. Centring & Shuttering

Plywood/steel/Aluminium plates or any material fit for the use as mentioned elsewhere in the tender document or as approved by Engineer-in-Charge shall be used for formwork. The shuttering plates shall be cleaned and oiled before every repetition and shall be used only after obtaining approval of the Engineer-in-charge. The number of repetitions allowed for plywood/ steel shuttering/ aluminium shall be at the

discretion of Engineer-in-Charge depending upon the condition of shuttering surface after each use and the decision of Engineer-in-Charge in this regard shall be final and binding on the Contractor. No claim, whatsoever, on this account shall be admissible.

60. Records of Consumption of Cement, Steel & Other Materials

- (i) For the purpose of keeping a record of cement and steel received at site and consumed in works, the Contractor shall maintain a register in the format approved by the Engineer-in-Charge, 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 the representative of the Engineer-in-Charge.
- (ii) The register of cement, steel & other materials (if required) shall be kept at site in the safe custody of Engineer-in-charge during progress of the work. This provision will not, however, absolve the Contractor from the quality of the final product.

61. Borrow Areas

The Contractor shall make his own arrangements for borrow pits and borrow disposal areas including their approaches and space for movement of man, machinery, other equipment as required for carrying out the works. The Contractor shall be responsible for taking all safety measures, getting approval, making payment of royalties, charges etc. and nothing extra shall be paid to the Contractor on this account and unit rates quoted by the Contractor for various items of bill of quantities shall be deemed to include the same.

62. Care of Works

From the commencement to the completion of works and handing over, the Contractor shall take full responsibility for care of all the works and in case of any damage/loss to the works or to any part thereof or to any temporary works due to lack of precautions or due to negligence on the part of Contractor, the same shall be made good by the Contractor at no extra cost to Employer.

63. Coordination with Other Agencies

- (i) Work shall be carried out in such a manner that the work of other agencies operating at the site is not hampered due to any action of the Contractor. Proper coordination with other agencies will be Contractor's responsibility. In case of any dispute, the decision of Engineer-in-charge shall be final and binding on the Contractor.
- (ii) If and when required for the coordination of works with other agencies involved at site, the Contractor shall within the scope of work, re-route and/or prepare approaches and working areas as may be necessary.

64. Setting Out of the Works

The Contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of

the works. If any error appears or arises in the position, levels, dimensions or alignment of any part of the works at any time during the progress of works, the Contractor shall rectify such error to the satisfaction of Engineer-in-charge at his own expenses. The checking of any setting out or of any line or level by the Engineer-in-charge shall not in any way relieve the Contractor of his responsibility for the correctness thereof.

65. Site Clearance

- (i) The Contractor shall ensure that the working site is kept clean and free of obstructions for easy access to job site and also from safety point of view. Before handing over the completed work to the Engineer-in-charge, the Contractor shall remove all temporary structures like the site offices, cement go-down, stores, labour hutments, scaffolding, rubbish, debris, left-over materials, tools and plants, equipment etc. and clean the site to the entire satisfaction of the Engineer-in-charge. If this is not done, the same may be got done by the Engineer-in-charge at the risk and cost of Contractor.
- (ii) The Contractor shall clean all floors, remove cement/ lime/ paint drops and deposits, clean joinery, glass panes etc., touching all painter's works and carry out all other necessary items of works to make the premises clean and tidy before handing over the completed works, and the rates quoted by the Contractor shall be deemed to have included for the same.
- (iii) If the work involves dismantling of any existing structure in whole or part, any RCC foundation and/ or paved area, care shall be taken to limit the dismantling up to the exact point and/ or lines as directed by the Engineer-in-Charge and any damage caused to the existing structure beyond the said line or point shall be repaired and restored to the original condition at the cost and risk of Contractor to the satisfaction of the Engineer-in-Charge, whose decision shall be final and binding upon the Contractor.
- (iv) The Contractor shall not dispose of the ordinary earth excavated from within the boundary limits to any place outside such limits as the same may be required as per the discretion of the engineer in charge.
- (v) Disposal of Debris/ Surplus Earth (including contaminated earth) shall be done by the Contractor at the designated disposal area(s) within the boundary limits as directed by engineer in charge. In case the Employer is not in a position to provide disposal area within the boundary limits due to space constraints, the Contractor has to dispose the same outside the boundary limits as per the provisions of the contract. While disposing the Debris/ Surplus Earth (including contaminated Earth) outside the boundary limit, the Contractor has to ensure that the same are disposed off safely and fulfilling the local statutory regulations including but not limited to the guidelines/ stipulations of State Pollution Control Board.

66. General Guidelines during and before Erection

- (i) The Contractor shall be responsible for organizing the lifting of the equipment in the proper sequence for orderly progress of the work and to ensure that access routes for erecting the other equipment are kept open. The installation of machines at different floor levels/ terrace and at basement shall be carried out by the Contractor with due

care so as to guard against any damage to the existing finishes of the building and shall augment if required, necessary machineries/ lifting crane for installation purpose within the quoted prices.

- (ii) Orientation of all foundations, elevations, lengths and disposition of anchor bolts and diameter of holes in the supports and saddles shall be checked by the Contractor well in advance of the installation. Rectifications, including chipping of foundations, shall be carried out only where necessary in consultation with the Engineer-in-Charge. If a structural member needs to be dismantled to facilitate the equipment erection, this shall be done by the Contractor after ensuring proper stability of the main structure in consultation with the Engineer-in-Charge. All such dismantled members shall be put back in position to the satisfaction of Engineer-in-Charge after the completion of the equipment erection.
- (iii) During the performance of the work the Contractor shall at his own cost keep structures, materials and equipment adequately braced by guys, struts or other approved means which shall be supplied and installed by the Contractor as required till the installation work is satisfactorily completed. Such guys, shoring, bracing, strutting, planking supports etc. shall not interfere with the work of other agencies and shall not damage or cause distortion to other works executed by the Contractor or other agencies.
- (iv) The Contractor shall duly comply with manufacturer(s) recommendations and detailed specifications for the installation of the various equipment and machines. Various tolerances required as marked on the drawings and/or in accordance with the specifications and/or instructions of the Engineer-in-charge shall be maintained. Verticality shall be verified with the Total-station and shall be maintained.

67. Security and Security Arrangements

- (i) The Contractor shall provide adequate number of watch and ward personnel on round the clock basis with limited/restricted access to the site through gates manned by the Security personnel. The responsibility for safe custody of materials, works in progress, office of Employer/ Engineer-in-charge, building and all services etc. lies with the Contractor till handing over of the works to the Employer.
- (ii) The Contractor shall ensure adequate illumination of the worksite(s) on a continuous basis to ensure safe working and to avoid pilferage/theft of materials lying at the work site. The rates quoted shall be deemed to be inclusive of this scope and the Contractor is not entitled for any additional payment in this regard. This is to be implemented from start of work till handing over of the works to the Employer.
- (iii) The project site during execution shall be properly barricaded with Pre-coated sheets/ GI / Galvalume sheets of at least 3.0 meters, as directed by the Engineer-in-charge, with proper supports/ foundations in order to isolate the site from surroundings to avoid any disturbance and to avoid the entry of unauthorized personnel. Expenditure towards this activity is considered to be included in the quoted rates.
- (iv) The Contractor shall make adequate security arrangement for protection of the work site and to prevent unauthorized entry to protect their materials and equipment in its own interest at no extra cost to the Employer.

- (v) If at any place/site, entry is restricted by the Employer, the Contractor shall then arrange to obtain through the Engineer-in-Charge, well in advance, all necessary entry permits/ gate passes for his staff and labourer and entry and exit of his men and materials shall be subject to vigorous checking by the security staff. The Contractor shall not be eligible for any claim or extension of time whatsoever on this account.
- (vi) The Contractor shall, at their own cost, construct their centralized store for safe keeping of the materials/equipment and for proper accounting of the material/equipment being used in this project.

68. Works to remain Open to Inspection

- (i) All works executed or under the course of execution in pursuance of this contract shall at all times be open to inspection of the Engineer-in-charge.
- (ii) The work during its progress or after its completion may be inspected by the third party appointed by the Employer. The compliance of observations/ improvements suggested by the inspecting officers shall be obligatory on the part of the Contractor at his cost.

69. Set-Off of Contractor's Liabilities

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

70. Possession Prior to Completion

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

71. Employment of Personnel

- (i) The Contractor shall employ his representatives and workmen after verifying their antecedents and loyalty. He shall ensure that no personnel of doubtful antecedents is associated with the works in any manner.
- (ii) In case the Engineer-in-charge observes misconduct, negligence or incompetence etc. on the part of any representative, agent and workmen or employees etc. of the Contractor, the Engineer-in-charge shall be competent to instruct the Contractor to remove such engineer/ staff/ worker from the site without giving any reason to the Contractor and ask to provide suitable replacements. The decision of the Engineer-in-

charge shall be final and binding on the Contractor. The Contractor shall not be allowed any compensation on this account.

72. Technical Staff for Work

- (i) The Contractor shall employ adequate number of technical staff at his cost during the execution of this work depending upon the requirement of work. For this purpose, the numbers to be deployed, their qualification and experience, as decided by Engineer-in-charge, shall be final and binding on Contractor. The Contractor shall not be entitled for any extra payment in this regard.
- (ii) The technical staff should be available at site to take instructions from the Engineer-in-Charge.
- (iii) The Contractor shall submit a site organizational chart and Resume, including details of experience of the Project-in-Charge and other staff proposed to be deployed by him. The technical team shall be deputed by the Contractor on the Project after getting approval from the Engineer-in-Charge.
- (iv) In case the Contractor fails to employ the staff as aforesaid, he shall be liable to pay a reasonable amount as defined in Special conditions of contract for each month of default in the case of each person. The decision of the Engineer-in-charge as to number of Technical Staff to be adequate for the project and the period for which the desired strength of technical staff was not employed by the Contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the Contractor.

73. Valuable Articles Found at Site

All gold, silver and other minerals of any description and all precious stones, coins, treasure, relics, antiques and all other similar things which shall be found in, under or upon the site shall be the property of the Employer.

74. Labour Laws - to be Complied with by the Contractor

- (i) The Contractor shall obtain a valid license under the Contract Labour (Regulation & Abolition) Act, 1970 and the Contract Labour Act (Regulation & Abolition) Central Rules 1971, as amended from time to time, and continue to have a valid license until the completion of the work including the defect liability period.
- (ii) The Contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the Building and other Construction Workers Welfare Cess Act, 1996 and its amendments, if any.
- (iii) The Contractor shall also comply with the provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.
- (iv) The Contractor shall not engage any labour below the age of 18 years under any circumstances. The provisions under Child Labour (Prohibition and Regulation) Amendment Act, 2016 shall be strictly adhered to. In case of any non-compliance with the requirements of Labour laws, the Contractor shall be liable for all consequences or

any penalty imposed in this regard.

74.1 Payment of Wages:

- (i) The Contractor shall pay to the labour employed by him either directly or through sub-Contractors, wages not less than fair wages as defined in the Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- (ii) The Contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wages to labour indirectly engaged on the work, including any labour engaged by his sub-Contractors in connection with the said work, as if the labour had been employed by him.
- (iii) The Contractor shall transfer/ credit the wages/ salary of all labourer/ workers preferably in their bank accounts. He shall be responsible for opening of bank accounts of all labourers/workers employed by the Contractor at the work site in this regard.
- (iv) In respect of all labour, directly or indirectly employed in the works for performance of the Contractor's part of this contract, the Contractor shall comply with Labour Regulations in regard to payment of wages, wage period, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable..
- (v) Under the provision of labour rules, the Contractor is bound to allow one-day rest for 6 days' continuous work and pay wages at the same rate as for duty to the labour directly or indirectly employed in the works. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labourer/ worker and pay the same to the persons entitled thereto from any money due to the Contractor.
- (vi) The Contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.
- (vii) The Contractor shall indemnify and keep the Employer indemnified against payments to be made under and for the observance of the laws aforesaid and the Labour Regulations without prejudice to his right to claim indemnity from his sub-Contractors.
- (viii) The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

74.2 Labour Safety Provisions

- (i) The Contractor shall be fully responsible to observe the labour safety provisions. The Contractor shall at his own cost take all precautions to ensure safety of life and

property by providing necessary barriers, lights, watchmen etc. during the progress of work.

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

74.3 Observance of Labour Laws

- (i) The Contractor shall be fully responsible for observance of all labour laws, including the local laws and other laws, applicable in this matter and shall indemnify and keep the Employer indemnified against any adverse effect or non-observance of any such laws. The Contractor shall be liable to make payment to all its employees, workers and sub-Contractors and make compliance with labour laws. If the Employer or his authorized representative is held liable as "Principal Employer" to pay contributions etc. under legislation of Government or Court decision in respect of the employees of the Contractor, then the Contractor would be liable to reimburse the amount of such payments, contribution etc. to the Employer and/ or the same shall be deducted from the payments, security deposit etc. of the Contractor.
- (ii) The Contractor shall submit proof of having a valid EPF registration certificate. He shall within 7 days of the close of every month, submit a statement to the Employer showing the recoveries of contributions in respect of each employee employed by or through him and shall furnish to Employer such information as the Employer is required to furnish under the provisions of para 36B of the EPF Scheme 1952 to the EPF authorities and other information required by the EPFO authorities from time to time. He shall also submit a copy of challan every month in token of proof of having deposited the subscription and contribution of workers engaged on the project, if demanded by the Engineer-in-Charge.
- (iii) The Contractor shall also ensure the compliance of EPF Act, 1952 by the sub-Contractors, if any, engaged by the Contractor for the above said work.
- (iv) The Contractor shall indemnify and keep the Employer harmless from and against all actions, suits, proceedings, losses, costs, damages, charges, claims and demands of every nature and description brought or recovered against the Employer by reasons of any act or omission of the Contractor, his agents or employees in connection with complying the provisions of the Employees Provident Fund & Miscellaneous Provisions Act, 1952 as amended from time to time. All sums payable by way of compensation/ damages/ interest on the outstanding amounts payable by the Contractor shall be considered as reasonable and be payable by the Contractor to the Employer immediately and if the Contractor does not pay the amount immediately the same will be deducted from the security deposit or earnest money or any other amount available with the Employer or any money payable to the Contractor by the Employer.

74.4 Minimum Wages Act

The Contractor shall comply with all provisions of the Minimum Wages Act, 1948, Contract Labour Act (Regulation & Abolition) 1970, and rules framed thereunder and other labour laws/ local laws affecting the contract labour that may be brought into

force from time to time.

74.5 Labour Records

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

(a)	The number of the labourer employed by him (category-wise)	
(b)	Their working hours	
(c)	The wages paid to them	
(d)	The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused.	
(e)	The number of female workers who have been allowed Maternity Benefits and the amount paid to them.	
(f)	Any other information required by Engineer-in-Charge	

- (ii) In the event of the Contractor(s) committing a default or breach of any of the provisions of the Labour Regulations and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and Rules which is materially incorrect, the compensation imposed, if any, by the concerned Department will be recoverable from his dues.
- (iii) Should it appear to the Engineer-in-Charge that the Contractor is not properly observing and complying with the provisions of the Contractor's Labour Regulations and Model Rules and the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (R&A) Central Rules 1971, for the protection of health and sanitary arrangements for workers employed by the Contractor(s) (hereinafter referred as "the said Rules") the Engineer-in-Charge shall be competent to give a notice in writing to the Contractor requiring that the said Rules be complied with the amenities prescribed therein and shall be provided to the workers within a reasonable time to be specified in the notice.
- (iv) If the Contractor(s) fails to comply with the notice and observe the said rules within the period specified to provide the amenities to the workers as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities hereinbefore mentioned at the cost of the Contractor(s). The Contractor(s) shall erect, make and maintain at his/their own expense and in accordance with the approved standards all necessary huts and sanitary arrangements required for his/their work-people on the site in connection with the execution of the works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge shall have the power to give notice in writing to the Contractor(s) requiring that the said huts and sanitary arrangements be remodelled and/or reconstructed according to

- approved standards. If the Contractor(s) fail to remodel or reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in-Charge shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the Contractor(s).
- (v) The Contractor shall provide his labourers with a sufficient number of huts (hereinafter referred to as the camp) at his own cost of the following specifications on a suitable plot of land:
 - (a) The minimum height of each hut at the eave's level shall be 2.10 m. (7 ft.) and the floor area to be provided will be at the rate of 2.70 s q m (30 Sqft.) for each member of the worker's family staying with the labourer.
 - (b) The Contractor shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6'x5') adjacent to the hut for each family.
 - (c) The Contractor shall also construct temporary latrines and urinals, and bathing & washing places for the use of labour/ workers, which shall be at the rate one such facility for each 25 users (men and women to be counted separately), and separate latrines and urinals to be provided for women. These facilities shall be suitably screened.
 - (vi) All the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-Charge. In case of sun-dried bricks, the walls should be plastered with mud *gobri* on both sides. The floor may be *kutch*a but plastered with mud *gobri* and shall be at least 15 cm (6") above the surrounding ground. The roofs shall be laid with thatch, or any other materials as may be approved by the Engineer-in-Charge and the Contractor shall ensure that throughout the period of their occupation, the roofs remain water-tight.
 - (vii) The Contractor(s) shall provide each hut with proper ventilation.
 - (viii) All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.
 - (ix) There shall be kept an open space of at least 7.2 m. between the rows of huts, which may be reduced to 6 m. according to the availability of site with the approval of the Engineer-in-Charge. Back-to-back construction will be allowed.
 - (x) Water Supply - The Contractor(s) shall provide adequate supply of water for the use of labourer. The provisions shall not be less than two gallons of pure and wholesome water per head per day for drinking purposes and three gallons of clean water per head per day for bathing and washing purposes. Where piped water supply is available, supply shall be at stand posts and where the supply is from wells or river, tanks which may be of metal or masonry, shall be provided. The Contractor(s) shall also at his/ their own cost make arrangements for laying pipelines for water supply to his/ their labour camp from the existing mains wherever available, and shall pay all fees and charges thereof.
 - (xi) Disposal of Excreta- The Contractor shall make necessary arrangements for the disposal of excreta from the latrines by trenching or incineration which shall be according to the requirements laid down by the Local Health Authorities. If trenching

or incineration is not allowed, the Contractor shall make arrangements for the removal of the excreta through the Municipal Committee/authority and inform it about the number of labourers employed so that arrangements may be made by such Committee/authority for the removal of the excreta. All charges on this account shall be borne by the Contractor and paid directly by him to the Municipality/authority. The Contractor shall provide one sweeper for every eight seats in case of dry system.

- (xii) Drainage - The Contractor shall provide efficient arrangements to drain away sullage water so as to keep the camp neat and tidy.
- (xiii) The Contractor shall make necessary arrangements for keeping the camp area sufficiently lighted to avoid accidents to the workers.
- (xiv) Sanitation - The Contractor shall make arrangements for conservancy and sanitation in the labour camps according to the Public Health and Medical Authorities.

75. Recovery of Compensation Paid to Workmen

In every case in which by virtue of the provisions of the Workmen's Compensation Act, 1923, Employer is obliged to pay Compensation to a workman employed by the Contractor, in execution of the works, Engineer-in-Charge/Employer will recover from the Contractor, the amount of the Compensation so paid from any sum due to the Contractor whether under this contract or otherwise.

76. Ensuring Payment and Amenities to Workers if Contractor Fails

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation & Abolition) Central Rules 1971, Employer is obliged to pay any amount of wages to workman employed by the Contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act or under the Labour Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by Contractors, Employer will recover from the Contractor, the amount of wages so paid or the amount of expenditure so incurred from any sum due by Employer to the Contractor whether under this contract or otherwise.

77. Change in Firm's Constitution to be Intimated

Where the Contractor is a partnership firm, the prior approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the Contractor is an individual or a Hindu Undivided Family business concern such approval as aforesaid shall likewise be obtained before the Contractor enters into any partnership under agreement where the partnership firm would have the right to carry out the works hereby undertaken by the Contractor.

78. Indemnity Against Patent Rights

The Contractor shall fully indemnify the Employer and his authorized representatives from and against all claims and proceedings for or on account of any infringement of

any patent rights, design, trademark or name or other protected rights in respect of any construction plant, machine, work or material used for in connection with the works or temporary works.

79. Law Covering the Contract

This contract shall be governed by the Indian laws for the time being in force.

80. Laws, Bye-Laws Relating to the Work

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

81. Jurisdiction

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

82. Contractor Liable for Damages, Defects During Defect Liability Period

If the Contractor or his working people or servants shall break, deface, injure, or destroy any part of the building in which they may be working, or any building, road, road kerb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work, he shall, upon receipt of a notice in writing from Engineer-in-Charge on that behalf, make the same good at his own expense or in default, the Engineer-in-Charge shall cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the Contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof.

83. Resolution and Settlement of Disputes & Arbitration

Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same, whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with

as mentioned hereinafter:

- (i) If the Contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-Charge or if the Engineer-in-Charge considers any act or decision of the Contractor on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable and is disputed, such party shall promptly within 15 days of the arising of the disputes, request as under.
 - (a) Dispute to be put up before the Employer for resolution.
 - (b) If the resolution fails, the matter be put up before the Conciliation Committee to be appointed by the Employer.
 - (c) If the conciliation also fails, the Contractor may request for the appointment of arbitrator under intimation to the other party.
 - (d) On receipt of such request, the Employer may appoint a sole arbitrator for adjudication of the dispute(s).
- (ii) It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed, if any, in respect of each such dispute along with the notice for appointment of arbitrator.
- (iii) The parties shall share the Arbitration fees equally. In case there is no finalization of place of arbitration, the Arbitral Tribunal shall determine the place of arbitration. The venue of the arbitration shall be such place as may be fixed by the Arbitral Tribunal in consultation with both the parties. Failing any such agreement, the Arbitral Tribunal shall decide the venue.

84. Action where no Specifications are prescribed

In the case of any class of work for which there is no such specifications, such work shall be carried out in accordance with the latest CPWD, Bureau of Indian Standards Specifications. In case there are no such specifications mentioned in the CPWD/ Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications, if not available then as per State/ District Specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.

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SECTION - 4

Forms and Formats

Declaration by the bidder regarding bidding document

1. I/ We_____ (Name of the Bidder) hereby represent that we have gone through and understood the Bidding Documents (including but not limited to) the Commercial & Technical Requirements/ Specifications and that our Bid has been prepared accordingly in compliance with the requirements stipulated in the said documents.
2. I/ We are submitting the **Table of Contents of Bidding Documents and amendments, if any**, as part of our Bid duly signed and stamped on each page in token of our acceptance. We are not submitting the total Bidding Document as part of our Bid but undertake that said Bidding Document shall be deemed to form part of our Bid and in the event of award of work to us, all parts shall be considered for constitution of the Contract Agreement. Further, I/ We shall sign and stamp each page of these documents as a token of Acceptance and as a part of the Contract in the event of award of Contract to us.

Signed for and on behalf of <bidder's name>
<Name of the Signatory>
Authorised Representative of the Bidder

Place: _____

Date: _____

Letter of Waiver (on Letter-head of the Bidder)

1. I/ We _____<Bidder's Name> _____ hereby agree to fully comply with, abide by and accept without variation, deviation or reservation, all technical, commercial and other conditions whatsoever of the Bidding Document including Addenda (if any).
2. I/ We further hereby waive, withdraw and abandon any and all deviations, variations, objections or reservations whatsoever thereto here to-before set out, given or indicated in our offer, clarifications, correspondence, communications, or otherwise, with a view that the price bid submitted shall be treated to conform in all respects with the terms and conditions of the said Bidding Documents including all Addenda.
3. I/ We further hereby confirm that the prices quoted in the price bid are as per the provisions of the Bidding Document and there is no deviation in the price bid.

Signed for and on behalf of <bidder's name>
<Name of the Signatory>
Authorised Representative of the Bidder

Place: _____

Date: _____

Undertaking for Non-engagement of Child Labour

I/ We hereby declare that:

- (i) We are committed to elimination of child labour in all its forms.
- (ii) Neither we nor any of our nominated sub-contractor(s) are engaging Child Labour in any of our work(s) in terms of the provisions of The Child Labour (Prohibition and Regulation) Act, 1986 and other applicable laws.
- (iii) We, as well as our nominated sub-contractor(s), undertake to fully comply with provisions of The Child Labour (Prohibition and Regulation) Act, 1986 and other applicable labour laws in case the work is awarded to us.
- (iv) It is understood that if I/We, either before award or during execution of Contract, commit a transgression through a violation of (ii) and (iii) above or in any other form, such as to put my/our reliability or credibility in question, the Employer is entitled to disqualify us from the Tender process or terminate the Contract, if already executed or exclude me/us from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression as determined by the Employer. Such exclusion may be for a period of 1 year to 3 years as per the procedure prescribed in the guidelines for holiday listing of the Employer.
- (v) I/ We accept and undertake to respect and uphold the Employer's absolute right to resort to and impose such exclusion.

Signed for and on behalf of <bidder's name>
<Name of the Signatory>
Authorised Representative of the Bidder

Place: _____

Date: _____

Form for submission of Pre-bid queries by the bidders

[illegible]

**(Name & Signature of the Bidder
or his authorised representative)**

Place:
Dated:

Application for Extension of Time

(To be submitted by the Contractor)

1.	Name of the Contractor											
2.	Name of the work as given in the Agreement											
3.	Agreement No.											
4.	Estimated amount put to tender											
5.	Date of commencement of work as per agreement											
6.	Period allowed for completion of work as per agreement											
7.	Date of completion stipulated as per agreement											
8.	Period for which extension of time has been given previously: Extension Granted earlier: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 5%; text-align: center;">a)</td> <td style="width: 35%;">First extension vide Engineer-in-charge letter No... ..date</td> <td style="width: 15%; text-align: center;">Months</td> <td style="width: 15%; text-align: center;">Days</td> </tr> <tr> <td style="text-align: center;">b)</td> <td>2nd extension vide Engineer-in-charge letter No..... date</td> <td style="text-align: center;">Months</td> <td style="text-align: center;">Days</td> </tr> </table>				a)	First extension vide Engineer-in-charge letter No... ..date	Months	Days	b)	2nd extension vide Engineer-in-charge letter No..... date	Months	Days
a)	First extension vide Engineer-in-charge letter No... ..date	Months	Days									
b)	2nd extension vide Engineer-in-charge letter No..... date	Months	Days									
9.	Reasons for which extension have been previously given (copies of the previous application should be attached)											
10.	Period for which extension is applied for:											
11.	Hindrances on account of which extension is applied for with dates on which hindrances occurred, and the period for which these are likely to last - <ul style="list-style-type: none"> a) Serial No. b) Nature of hindrance c) Date of Occurrence d) Period for which it is likely to last e) Period for which extension required for this particular hindrance. f) Overlapping period, if any, with reference to item g) Net extension applied for h) Remarks, if any 											

12.	Total period for which extension is now applied for on account of hindrances mentioned above	Month/ days
13.	Extension of time required for extra work.	
14.	Details of extra work and on the amount involved: a) Total value of extra work b) Proportionate period of extension of time based on estimated amount put to tender on account of extra work.	
15.	Total extension of time required for 11 & 12	

Submitted in the office of the Engineer-in-Charge.

Signed for and on behalf of <bidder's name>
<Name of the Signatory>
Authorised Representative of the Bidder

Place: _____

Date: _____

Performa of Bank Guarantee in lieu of EMD

(Judicial Stamp paper of appropriate value as per stamp Act of respective state)

Employer/PMC,

1. In consideration of the Employer/PMC, having its Registered Office at _____(hereinafter called "Employer/PMC" which expression shall, unless repugnant to the subject or context, include its successors and assigns) having issued Notice Inviting Tender No. _____ and M/s. _____ having its Registered Office at _____ (hereinafter called the "Tenderer") is to participate in the said tender for _____.
2. Whereas the Employer/PMC, as a special case, has agreed to accept an irrevocable and unconditional Tender Bond Guarantee for an amount of Rs. _____, valid up to _____ from the tenderer in lieu of Cash Deposit of Rs. _____ required to be made by the tenderer, as a condition precedent for participation in the said tender.
3. We the (hereinafter called the "BANK") having its Registered Office at _____ and branch office at _____, do hereby unconditionally and irrevocably undertake to pay to the Employer/PMC immediately on demand in writing, without any demur/ protest, any amount but not exceeding Rs. _____ and any such demand made by the Employer/PMC shall be conclusive and binding on us irrespective of any dispute or differences that may be raised by the tenderer. Any change in the constitution of the tenderer or the Bank shall not discharge our liability under this Guarantee.
4. We, the _____ Bank, lastly undertake not to revoke this guarantee during its currency without the prior consent of the Employer/PMC in writing and this guarantee shall remain valid up to _____ upon expiry of which, we shall be relieved of our liability under this guarantee thereafter.

For and on behalf of the Bank

Place:
Dated:

Witness.

- 1.
- 2.

Performa of Bank Guarantee (Performance)

(Judicial Stamp paper of appropriate value as per stamp Act of respective state)

Employer/PMC,

1. Whereas the Employer/ PMC, having its Registered Office at _____ (hereinafter called "Employer/PMC", which expression shall include its successors and assigns) having awarded a work order/contract / supply order No. dated _____ (hereinafter called the contract) to M/s _____ (hereinafter called the contractor/ supplier) at a total price of Rs. _____ subject to the terms and conditions contained in the contract.
2. Whereas, the terms and conditions of the contract require the contractor to furnish a bank guarantee for Rs. _____ (Rupees _____) being ____ % of the total value of the contract for proper execution and due fulfilment of the terms and conditions contained in the contract.
3. We, the Bank, (hereinafter called the "Bank") do hereby unconditionally and irrevocably undertake to pay to the Employer/PMC immediately on demand in writing and without protest/or demur all moneys payable by the contractor/ supplier to the Employer/PMC in connection with the execution/ supply of and performance of the works/ equipment, inclusive of any loss, damages, charges, expenses and costs caused to or suffered by or which would be caused to or suffered by Employer/PMC by reason of any breach by the contractor/ supplier of any of the terms and conditions contained in the contract as specified in the notice of demand made by Employer/PMC to the bank. Any such demand made by Employer/PMC on the bank shall be conclusive evidence of the amount due and payable.
4. This guarantee shall be a continuing guarantee and irrevocable for all claims of the Employer/PMC as specified above and shall be valid during the period specified for the performance of the contract.
5. We, the said bank, further agree with the Employer/PMC that the Employer/PMC shall have the fullest liberty, without our consent and without affecting in any manner our obligations and liabilities hereunder, to vary any of the terms and conditions of the said contract or to extend time for performance of the contract by the contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by Employer/PMC against the contractor/supplier under the contract and forbear or enforce any of the terms and conditions relating to the said contract and we shall not be relieved from our liability by reason of any such variations or extension being granted to the contractor or for any forbearance, act or omission on the part of Employer/PMC or any indulgence by Employer/PMC to the contractor or by any such matter or thing, whatsoever, which under the law relating to the sureties would, but for this provision, have effect of so relieving us.

6. This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever Employer/PMC may now or at any time have in relation to the performance of the works/ equipment and the Employer shall have full re-course to or enforce this security in performance to any other security or guarantee which the Employer/PMC may have or obtained and there shall be no forbearance on the part of the Contractor in enforcing or requiring enforcement of any other security which shall have the effect of releasing the Bank from its full liability. It shall not be necessary for Employer/PMC to proceed against the said contractor/supplier before proceeding against the Bank.
7. This guarantee/ undertaking shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier/ contractor, but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to Employer/PMC are paid by the Bank in terms thereof.
8. The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the bank in terms hereof shall not be otherwise effected or suspended by reasons of any dispute or disputes having been raised by the supplier/ contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial of liability by the supplier/ contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to Employer/PMC in terms hereof.
9. We, the said Bank, lastly undertake not to revoke this guarantee during its currency except with the previous consent of Employer/PMC in writing, upon expiry of which we shall be relieved from all liabilities under this guarantee thereafter.
10. Signed this _____ day of _____ at _____.

For and on behalf of the Bank

(Signature, name and Designation of the Signatory
along with the Bank Seal)

WITNESS.

1.

2.

Performa of Bank Guarantee

(For mobilization advance)

(Judicial Stamp paper of appropriate value as per stamp Act of the respective state)

Employer/PMC,

1. In consideration of the Employer/PMC, having its Registered Office at _____ (hereinafter called "Employer/PMC", which expression shall unless repugnant to the subject or context include its successor and assigns) having agreed under the terms and conditions of Contract No. _____ dated _____ made between _____ and the Employer/PMC in connection with _____ (hereinafter called "the said contract") to make at the request of the Contractor a Mobilization Advance of Rs. _____ for utilizing it for the purpose of the Contract on his furnishing a guarantee acceptable to Employer/PMC, we the _____ Bank Ltd. (hereinafter referred to the "the said Bank") and having our registered office at _____ do hereby guarantee the due recovery by Employer/PMC of the said advance as provided according to the terms and conditions of the Contract.
2. We, the said Bank, do hereby undertake to pay the amount due and payable under this Guarantee without any demur, merely on a demand from the Employer/PMC stating that the amount claimed is due to the Employer/PMC under the said Agreement. Any such demand made on the _____ shall be conclusive as regards the amount due and payable by the _____ under this guarantee and _____ agree that the liability of the _____ to pay the amount so demanded to the Employer/PMC, shall be absolute and unconditional notwithstanding any dispute or disputes raised by the Contractor and notwithstanding any legal proceeding(s) pending in any Court or Tribunal relating thereto. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. _____, which shall be valid up to _____.
3. We, _____ Bank further agree that Employer/PMC shall be the sole judge of and as to whether the amount claimed has fallen due to the Employer/PMC under the said agreement or whether the said Contractor has not utilized the said advance or any part thereof for the purpose of the Contract and the extent of loss or damage caused to or suffered by Employer/PMC on account of the said advance together with interest not being recovered in full and the decision of Employer/PMC that the amount has fallen due from contractor or the said Contractor has not utilized the said advance or any part thereto for the purpose of the contract and as to the amount or amounts of loss or damage caused to or suffered by Employer/PMC shall be final and binding on us.
4. We, the said Bank, further agree that the Guarantee herein contained shall remain in full force and effect till the said advance has been fully recovered and its claims satisfied or discharged and till the Employer/PMC certify that the said advance has been fully recovered from the said contractor and, accordingly, discharges this Guarantee subject, however, that Employer/PMC shall have no claims under this

Guarantee after the said advance has been fully recovered, unless a notice of the claims under this Guarantee has been served on the bank before the expiry of the said Bank Guarantee in which case the same shall be enforceable against the Bank.

5. The Employer/PMC shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or indemnity from time to time to vary any of the terms and conditions of the said Contract or the advance or to extend time of performance by the said Contractor or to postpone for any time and from time to time of the powers exercisable by it against the said Contractor and either to enforce or forbear from enforcing any of terms and conditions governing the said Contract or the advance or securities available to the Employer/PMC and the said Bank shall not be released from its liability under these presents by any exercise by Employer/PMC of the liberty with reference to the matters aforesaid or by reasons of time being given to the said Contractor or any other forbearance, act or omission on the part of Employer/PMC or any indulgence by Employer/PMC to the said Contractor or of any other matter or thing whatsoever which under sureties the law relating to would but for this provision have the effect of so releasing the bank from its such liability.
6. It shall not be necessary for Employer/PMC to proceed against the Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which Employer/PMC may have obtained or obtain from the Contractor or shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.
7. We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of Employer/PMC in writing and agree that any change in the constitution of the said Contractor or the said Bank shall not discharge our liability hereunder.
8. Signed this _____ day of _____ at _____.

For and on behalf of the Bank

(Signature, name and Designation of the Signatory
along with the Bank Seal)

WITNESS.

1.

2.

Performa for Bank Guarantee

(in lieu of Security Deposit)

(Judicial Stamp paper of appropriate value as per Stamp Act of respective state)

Employer/PMC,

- A. In consideration of the Employer/PMC, having its Registered Office at _____ (hereinafter called "Employer/PMC"), which expression shall include its successors and assigns, having awarded to M/s _____ (hereinafter called "the Supplier/ Contractor"), which expression shall wherever the subject or context so permits includes its successors and assigns, a Contract in terms inter-alia of Employer/PMC's letter No. _____ dated _____ and the Contract/ Purchase Conditions of the Employer/ PMC with the condition of the Contractor/ Supplier furnishing a Bank Guarantee to secure the performance of Contractor's/ Supplier's obligations and /or discharge of the contractor's/ supplier's liability under and/or in connection with the said supply/ contract up to a sum of Rs. _____ (Rupees _____ only).
- B. We, _____, ((hereinafter called "the Bank"), which expression shall include its successors and assigns, hereby undertake and guarantee payment to Employer/ PMC forthwith on the same day on demand in writing and without any protest or demur of any and all moneys payable by the supplier/contractor to the Employer/PMC under, in respect or in connection with the said contract inclusive of all the losses, damages, costs, charges and expenses and other moneys payable in respect of the above as specified in any notice of demand made by Employer/PMC to the Bank with reference to this guarantee up to and aggregate limit of Rs. _____ (Rupees _____ only) and the Bank hereby agree with Employer/PMC that:
1. This Guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of the Employer/PMC and liabilities of Supplier/ Contractor arising up to and until midnight of _____ ;
 2. This Guarantee shall be in addition to any other Guarantee or Security whatsoever that Employer/PMC now or at any time have in relation to the Supplier's/ Contractor's obligations/ liabilities under and/or in connection with the said supply/contract, and the Employer/PMC shall have full authority to take recourse or to enforce this Security in preference to any other Guarantee or Security which the Employer/PMC may have or obtain and no forbearance on the part of Employer/PMC in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its liability hereunder;
 3. The Employer/PMC shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the Supplier's/Contractor's obligations and/ or liabilities under or in connection with the said supply/contract or to grant time and / or indulgence to the supplier/

contractor or to increase or otherwise vary the prices or the total contract value or to release or to forbear from enforcement of all or any of the conditions under the said supply/ contract and/or the remedies of the Employer/PMC under any other security/securities now or hereafter held by Employer/PMC and no such dealings, increase(s) or other indulgence(s) or arrangement(s) with the supplier/ contractor or releasing or forbearance whatsoever shall have the effect of releasing the Bank from its full liability to Employer/PMC hereunder or prejudicing rights of Employer/ PMC against the Bank;

4. This Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the supplier/ contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys payable to the Employer/PMC in terms thereof;
5. The Bank hereby waives all rights at any time inconsistent with the terms of this Guarantee and the obligations of the Bank in terms hereof shall not be otherwise affected or suspended by reason of any dispute or disputes having been raised by the supplier/ contractor (whether or not pending before any Arbitrator, Tribunal or Court) or any denial or liability by the supplier/ contractor stopping/ preventing or purporting to stop or prevent any payment by the Bank to Employer/PMC in terms thereof;
6. The amount stated in any notice of demand addressed by Employer/PMC to the Guarantor as liable to be paid to the Employer/PMC by the supplier/contractor or as suffered or incurred by Employer/PMC on account of any losses or damages, costs, charges and/or expenses shall as between the Bank and Employer/PMC be conclusive of the amount so liable to be paid to the Employer/PMC or suffered or incurred by Employer/PMC as the case may be and payable by the Guarantor to the Employer/PMC in terms hereof subject to a maximum of Rs _____ (Rupees _____ only);
7. Unless demand or claim under this Guarantee is made on the Guarantor in writing within three months from the date of expiry of the Guarantee i.e. up to the Guarantor shall be discharged from all liabilities under this Guarantee there under;
8. Notwithstanding anything contained hereinbefore, our liability under this guarantee is restricted to Rs. _____ (Rupees _____ only). This guarantee will expire on _____. Any claim under this Guarantee must be received by us within three months from the date of expiry.
9. Signed this _____ day of _____ at _____.

For and on behalf of the Bank

(Signature, name and Designation of the Signatory
along with the Bank Seal)

WITNESS.

- 1.
- 2.

Form for Guarantee Bond for anti-termite Treatment

THIS AGREEMENT is made this ____ day of _____ at _____ between:

M/s _____ (hereinafter called the guarantor) of the one part;

and

M/s Employer/ PMC, hereinafter called the Employer/PMC of the other part, which expression shall include its successors or assigns, more particularly the Resident Welfare Association (RWA) of the said complex.

This agreement witnesses as under:

1. Whereas this agreement is supplementary to the contract hereinafter called the Main Contract dated _____ between the guarantor of the one part and the Employer/PMC of the other part whereby the contractor, inter-alia, is understood to render the buildings and structures in the said contract recited, completed, termite proof.
2. And whereas the guarantor agreed to furnish a guarantee to the effect that the said structure will remain termite proof for TEN YEARS to be so reckoned from the date of issue of Completion Certificate of the Contract by the Employer/ PMC;
3. During this period of guarantee, the guarantor shall make good all defects and for that matter shall replace at his risk and cost such wooden member(s) as may be damaged by termite and in case of any other defect being found, he shall render the building termite- proof at his cost to the satisfaction of the Engineer-in-charge and shall commence the works of such rectification within seven days from date of issuing notice from the Engineer-in-Charge, and later the manager concerned from the concerned RWA, calling upon him to rectify the defects falling which the work shall be got done by Employer/PMC/ Employer by some other contractor at the guarantor's cost and risk and in the latter case the decision of the Engineer-in-charge as to the cost recoverable from the guarantor shall be final and binding.
4. That if the Guarantor fails to execute the Anti-Termite treatment or commits breaches hereunder, then the Guarantor will indemnify Employer/PMC against all losses damages, costs, expenses or otherwise which may be incurred by him by reasons of any default on the part of the guarantor in performance and observance of this supplemental Agreement. As to the amount of loss and or damage and/or cost incurred by Employer/PMC, decision of the Engineer-in-charge will be final and binding on the parties.
5. In witness where of these presents have been executed by the Guarantor _____ and by _____
for and on behalf of Employer/PMC on the day of month and year first above written.

For and on Behalf of the Guarantor	For and on behalf of the Employer/ PMC
<Signature>	<Signature>
<Name and Address of the Authorised Signatory>	<Name and Address of the Authorised Signatory>
Witnesses	
1.	1.

Draft for Guarantee to be executed by the Contractor for removal of defects after completion in respect of Water-proofing works

This agreement made on this ____ day of _____, Two thousand Twenty Two between _____ (hereinafter called Guarantor of the one Part) and the Employer/ PMC (hereinafter called the Execution Agency of the other Part).

- A. WHEREAS this agreement is supplementary to a contract (hereinafter called the Contract) dated _____ made between the GUARANTOR of the ONE Part and the Employer/ PMC of the Other Part, whereby the Contractor, inter-alia, undertook to render the buildings and structures in the said contract recited completely water and leak proof.
- B. AND WHEREAS the Guarantor agreed to give a guarantee to the effect that the said structures will remain water and leak proof for a period of Ten years from the date of issue of Completion Certificate by the Employer.

NOW, THE GUARANTOR hereby guarantees that the water-proofing treatment given by him will render the structures completely leak-proof and the minimum life of such water-proofing treatment shall be Ten years to be reckoned from the date of issue of Completion Certificate of the building/ project by the Employer/PMC as prescribed in the contract.

Provided that the Guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose.

- (a) Misuse of roof shall mean any operation, which will damage water-proofing treatment, like chopping of fire wood and things of the same nature which might cause damage to the roof.
- (b) Alternation shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts.
- (c) The decision of the Engineer-in-Charge with regard to cause of leakage shall be final.

That this Agreement, inter alia, provides for the following:

1. During this period of guarantee, the Guarantor shall make good all defects, in case of any defect being found, and render the building completely water-proof to the satisfaction of the Engineer-in-Charge at his cost. The Guarantor shall commence the work for such rectification within seven days from the date of issue of notice by the Engineer-in-Charge calling upon him to rectify the defects, failing which the work shall be got done by the Employer/ PMC from some other Contractor at the guarantor's cost and risk. The decision of Engineer-in-Charge as to the cost, payable by the Guarantor, shall be final and binding.
2. That if the Guarantor fails to execute the waterproofing or commits any breach

thereunder, then the Guarantor will indemnify the principal and his successors against all laws, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the Employer/PMC, the decision of the Engineer-in-Charge will be final and binding on the parties.

3. IN WITNESS WHEREOF these presents have been executed by the Obligator _____ and by _____ and for and on behalf of the Employer/PMC on the day, month and year first above written.

For and on Behalf of the Guarantor	For and on behalf of the Employer/PMC
<Signature>	<Signature>
<Name and Address of the Authorised Signatory>	<Name and Address of the Authorised Signatory>
Witnesses	Witnesses
1.	1.
2.	2.

**Performa for
Indenture for Secured Advance or Credit**

THIS INDENTURE made this _____ day of _____

Between

The Contractor, which expression shall where the Context as admits or implies be deemed to include his executor/ administrators and assigns of the one part;

And

The Employer/PMC, having its Registered Office at _____ (represented trough the Engineer-in-Charge), which expression shall where the context so admits or implies be deemed to include its successors and assign of the other part;

Whereas by an agreement dated (hereinafter called the said agreement), the Contractor has agreed to construct _____ ;

And whereas the Contractor has applied to the Engineer-in-Charge that he may be or be given credit for materials brought by him to the site of the work subject to the said agreement for use in construction of the work.

NOW. THIS INDENTURE Witnesseth that in pursuance of the said agreement and in consideration of the sum of Rs. _____ (Rupees _____ only) paid to the contractor by the Engineer-in-Charge, the receipt whereof the Contractor hereby acknowledges and of such advance or credit (if any) as may be made to him as aforesaid, the Contractor hereby covenants and agrees with the Engineer-in-Charge and declares as follows:

1. That all sums given as advance or credit by the Engineer-in-Charge to the Contractor as aforesaid shall be employed by the Constructor in or toward the execution of the said works and for no other purpose whatsoever.
2. That the material for which the advance or credit is given are offered to and accepted by the Engineer-in-Charge as security and are absolutely the Contractor's own property and free from encumbrances of any kind. The Contractor will not make any application for or receive further advance or credit on the security or material which are not absolutely his own property and free from encumbrances of any kind and the Contractor shall indemnify the Engineer-in-Charge against any claims to any material in respect of which advance or credit has been made to him as aforesaid.
3. That the said material and all other material on the security of which any further advance or advances or credit may be given as aforesaid (hereinafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of the Engineer-in-Charge and in terms of said agreement.
4. That the Contractor shall make all necessary and adequate arrangements for the proper safe custody and protection at his own cost against all risks qua the said material and, that until used in the construction as aforesaid, the material shall

remain at the site of the said works in the Contractor's custody and on his responsibility and shall at all times be open to inspection by the Engineer-in-Charge. In the event of the materials or any part thereof being stolen, destroyed or damaged or getting deteriorated, the Contractor will replace the same with other materials of like quality or repair and make good the same as required by the Engineer-in-Charge.

5. That said material shall not on any account be removed from the site of work except with the written permission of the Engineer-in-Charge.
6. That the advance shall be repayable in full when or before the Contractor receives payment from the Engineer-in-Charge of the price payable to him for the said work under the terms and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done then on the occasion of each payment, the Engineer-in-Charge will be at liberty to make a recovery from the Contractor's bill from such payments by deducting therefrom the value of the said materials than actually used in the construction and in respect of which recovery has not been made previously. The value of this purpose being determined in respect of each description of materials at the rates at which the amounts of the advance as made under these presents was calculated.
7. That if the Contractor shall at any time make any default in the performance of observance in respect of any of the terms and provisions of the said agreement or of that provisions the total amount of the advance or advances that may still be owing to the Engineer-in-Charge, shall immediately on the happening of such default be repayable by the Contractor to the Engineer-in-Charge together with interest thereon at 12% p.a. from the date of respective dated to such advance or advances to the date of payment and with all costs. Damages and expenses incurred by the Engineer-in-Charge in or for recovery hereof or the Contractor hereby covenants and agrees with The Engineer to repay and pay the same respective to him accordingly.
8. That the Contractor hereby charges all the said materials with the repayment to The Engineer of all sums advances or credit as aforesaid and all costs. Charges, damages and expenses payable under these presents PROVIDED ALWAYS it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and wherever the covenant for payment and repayment herein before contained shall be become enforceable and the money owing shall not be paid in accordance therewith. The Engineer may at any time thereafter adopt all or any of the following courses he may deem best:
 - (i) Seize the utilize the said material or any part thereof in the completion of the said works in accordance with the provision in that behalf contained in the said agreement debating the Contractor with the actual cost of effecting such completion and the amount due in respect of advance or credit under these presents and crediting the Contractor with value of work done as if he has carried it out in accordance with the said agreement and the rates thereby provided if the balance is against the Contractor is to pay the same to the engineer on demand.
 - (ii) Remove and sell by public action the seized materials or any part thereof and

out of the money arising from the sale repay the engineer under these presents and pay over the surplus (if any) to the Contractor.

- (iii) Deduct all or any part of the moneys owing from any sums due to the contractor under said agreement.
9. Expect in the event of such default on the part of contractor as aforesaid, interest or the said advance shall not be payable.
10. That in the event of conflict between the provisions of these presents and the said agreements, the provision of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents, the settlement of which has not been hereinbefore expressly provided for the same shall so far as is lawful be subject to jurisdiction of Delhi courts only.

IN WITNESS whereof the said the engineer and the contractor hereunto set their respective hands and seals the day year first above written.

Signed Sealed and delivered by

Contractor

Undertaking by the Contractor regarding Compliance with the provisions of Contract Labour (Regulation & Abolition) Act & Rules, EPF and ESI Obligations

(To be submitted along with each RA/Final Bill)

I, S/o Sh. _____, authorised representative of M/s _____ <the Contractor> _____ do hereby declare and undertake as under:

- (i) That in the capacity of independent Contractor for M/s _____ <Employer/PMC> _____ at _____, I and the sub-contractor engaged by me for the above said work, if any, have complied with the provisions of Contract Labour (Regulation & Abolition) Act, 1970 by holding a valid license under the Act and Rules thereto. I have paid the wages **for the month of** _____.
- (ii) These wages are not less than the minimum rates applicable to all the employees and no other dues are payable to any employee.
- (iii) That I and the sub-contractor engaged by me for the above said work, if any, have covered all the eligible employees under the Employees Provident Funds and Miscellaneous Provisions Act, 1952 and the Employees State Insurance Act, 1948 and deposited the Contributions for the months up to _____ and, as such, no amount towards EPF/ESI contributions, whatsoever is payable, is pending.
- (iv) I further declare and undertake that in case any liability pertaining to my employees or towards employees of the sub-contractor engaged by me for the above said work, if any, arises in future, I shall be fully responsible for all consequences. In case any liability is discharged by Employer/PMC due to my/ my sub-contractor's lapse, I undertake to reimburse the same or the Employer/PMC is authorised to deduct the same from my dues at this Project or at any other Project.

**Authorised Signatory
(Name & Seal of Company)**

Date

Witness

1. -

2. -

Approval of Sub-Contractor

1.	Name of Main Contractor	
2.	Name of Work, Location	
3.	Name of Proposed Sub- Contractor	
4.	Scope of Work Proposed to be Sub-contracted (Brief)	
5.	Estimated Value of the Proposed Work to be Sub-Contracted (INR)	
6.	Qualifying Criteria for Sub-Contractor	
6.1	Similar Work Experience	
(i)	1 (One) Contract of 50% or 2 (Two) Contracts of 30% Each of Estimated Value of Proposed Work to be Sub-Contracted	
(ii)	Annual Turnover (Not Less Than 100% of Estimated Value of the Proposed Work to be Sub-Contracted)	
(iii)	Positive Net Worth as per latest Annual Balance Sheet/ Profit & Loss Account	
7	Experience and Financial Details of Proposed Sub-Contractor	
(i)	Contract Value of Similar Work Executed (as Evidenced by Work Order & Completion Certificate) during the Last 7 Years	
(ii)	Maximum Annual Turnover During Last 3 (Three) Years (as Evidenced by Balance Sheet)	
(iii)	Net Worth as per latest Annual Balance Sheet/ Profit & Loss Account	
8	Criteria for Qualification of Sub-Contractor	
(i)	Sl. No. 7(i) > 6(i)	YES / NO
(ii)	Sl. No. 7(ii) > 6(ii)	YES / NO
(iii)	Sl. No. 7(iii)>0	YES / NO
9.	Based On Above Mentioned Information, We M/S_____ (Name Of Main Contractor) Propose M/S_____ (Name Of Proposed Sub-Contractor) As Our Sub-Contractor For The Above Mentioned Works. We Understand That Notwithstanding Above Approval, We Shall Remain Fully Responsible For The Performance Of The Said Sub-Contractor And Any Failure Of The Sub-Contractor Shall Not Absolve/Relieve Us Of Our Responsibility To Complete The Works As Per The Terms And Condition Of The Contract.	

Note: Contractor to fill all the details in the above Proforma. Further Contractor shall also fill-in the details at Sl.No.5 above based on the estimated value of the proposed work to be subcontracted.

(STAMP & SIGNATURE OF CONTRACTOR)

SPECIAL CONDITIONS OF CONTRACT

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1. General

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 Employer shall issue necessary clarifications or instructions to the Contractor, and the order of precedence of the documents shall be as follows:

- I. Contract Agreement
- II. Letter of Award
- III. Bill of Quantities
- IV. GFC Drawings
- V. Technical Specifications
- VI. Special Conditions of Contract
- VII. Instructions to Tenderers
- VIII. General Conditions of Contract
- IX. Other

2. Scope of Work

The scope of work covered in this contract will be as described in **Annexure - I to SCC.**

3. Scope of Supply

The scope of supply covered in this contract will be as described in **Annexure -II to SCC.**

4. Time Schedule

- 4.1. The work shall be executed strictly as per the Time Schedule mentioned in **Annexure - III to SCC.** The period of completion given includes the time required for mobilization & demobilization as well as testing, commissioning, rectifications, if any, re-testing, and completion in all respects as per the directions of the Engineer-in-Charge.

5. Statutory Approvals

- 5.1. Obtaining statutory approvals (for both temporary and permanent works) during construction and upon completion, as required, and as defined in Contractor's Scope of Work in **Annexure-I to SCC**, shall be the responsibility of the Contractor. Contractor shall arrange the inspection of the works by the authorities and necessary co-ordination and liaison work in this respect.

The statutory approvals/ permissions (but not limited to the following) are required to be arranged by the contractor for the execution of works. In case the permissions/ approvals are arranged by the contractor in the name of employer, the fees paid for obtaining such statutory approvals shall be reimbursed as per actuals by the employer on production of documentary evidence .

- (a) Permission for excavation
- (b) Labour registration
- (c) Temporary water, sewer and electricity connections.
- (d) NOC from electrical inspectorate.
- (e) NOC from Labour department.
- (f) Any other approvals from the statutory authorities that the Contractor may need to obtain in connection with his scope of work.

5.2 However, in addition to the above, the contractor shall render all possible support for submission and approval of various other statutory approvals required to be taken by the PMC/ Employer, including the following:

- (a) Application for obtaining the Occupation Certificate and to support checking by the authorities that the Building has been constructed in conformity with the sanctioned building plans;
- (b) Obtaining the Fire NOC;
- (c) Obtaining Permanent Water, Sewer and Electricity connections from the authorities;
- (d) Any other approval arising from the execution of works that may be required.

6. Site Organization and Construction Equipment

6.1. Site Organisation:

- (i) The contractor stands liable and responsible to provide adequately qualified, skilled, semi-skilled, and unskilled personnel on the work. The contractor shall deploy the minimum key Construction Personnel as specified in **Annexure-IV to SCC** and augment the same from time to time as decided by the Engineer-in-Charge depending upon the site requirements & the exigencies of work so as to complete all works within the contracted time schedule and the same shall be done without any additional cost to the Employer. In case the contractor fails to deploy the minimum required key personal, the recovery shall be effected as per details in **Annexure -IV**.

6.2. Construction Equipment

To complete the work as per specifications and within the time schedule, the Contractor shall progressively deploy **Equipment & Machinery** as specified in **Annexure-V to SCC** as and when required and augment the same as decided and directed by the Engineer-in-Charge depending on the exigencies of the work so as to complete all works within the contracted time schedule and without any additional cost to the Employer. The Employer shall not supply any equipment, [except those mentioned in Clause 8](#).

7. Materials to be supplied by the Employer

In continuation to Clause 31 of the GCC, the issue of materials lying at Site and listed in **Annexure-VI to SCC** shall be supplied by the Employer to the contractor against

Payment as per rates depicted in **Annexure-VI** which includes GST. The contractor shall be responsible for the transportation, up-keep and watch and ward of the material after issue.

Rates of material available at site are mentioned in Annexure VI to SCC. However, if no rate is mentioned for any material, the rate shall be worked out as per DSR rate with "plus" or "minus" percentage quoted by the bidder for such item in that tender. If the rate is not available in DSR, then the same shall be as per the market rate of new material (Non-Schedule Items) at the time of execution of the work.

8. Tools and Equipment Lying at Site.

- (i) The Employer shall not supply any Tools and Equipment lying at site as 'free issue' material.
- (ii) However, for the purpose of faster mobilization and timely project execution, if opted by the contractor, the tools and equipment already lying at site under Employer's Possession, will be offered to the Contractor for work execution at the rates as mentioned in **Annexure-VII**. The amount based on the mentioned Rates will be recovered by the Employer from the RA/ final bills of the contractor on a pro rata basis.
- (iii) It is not compulsory to use Plant & Machinery lying at site. Only, if the contractor is willing to use the same at mutually agreed rates, he is free to use the same.
- (iv) It may be noted that the repair, operation and maintenance of the equipment so made available would be the responsibility of the contractor.
- (v) The quality of work shall be as per bid document irrespective of the Employer's offered equipment supply. The responsibility of the quality of work that has been executed using the corresponding equipment solely lies with the Contractor, without any time and cost implications to the Employer.
- (vi) On completion of the work, the contractor shall handover the possession of tools and equipment to the Engineer-in-Charge in working condition. In case of any damage to the tools and equipment, contractor shall repair the same before handing over to the Employer/ his representative.

9. Health Safety and Environment (HSE) Management

In continuation with Clause 34 of the GCC, the HSE management at site shall be carried out in strict compliance to **Annexure - VIII to SCC**.

10. Office Accommodation to be arranged by the Contractor for the Engineer-in-Charge/ PMC/ TPIA/ Employer

- (i) The Contractor to establish/ provide an Office at site, furnished with basic furniture, for the PMC/ TPIA/ Employer's personnel to the satisfaction of Engineer-in-charge. Minimum capacity of the number of persons and area shall be as per site requirements.
- (ii) The contractor shall maintain the aforesaid facilities for various site activities operational during the currency of the contract and till the contractual completion date including extensions (if any). Operation and maintenance cost on the above facilities

shall be completely borne by the contractor.

11. Maintenance of the Works

- (i) The maintenance cost of the works executed shall be borne by the Employer after the offer of possession to the homebuyers or 6 months from the date of issue of the Completion Certificate, whichever is later.
- (ii) Contractor shall prepare and submit all Operation & Maintenance manuals as per “Good Engineering Practices” after completion of work, which shall be got approved from the Engineer- in-charge.

12. Additional Special conditions of contract (Annexure-IX)

Additional special project specific conditions are given in the **Annexure-IX**.

Annexure - I

(Special Conditions of Contract) : Scope of Work

1. The scope of work includes New and Balance Road, Landscape and Compound Development works of Unihomes Phase 1, Phase 2 & Phase 3 at Plot GH-01, Sector 117, NOIDA, U.P. as mentioned in Schedule of Rates. **Unihomes Phase 1** spread across 11.73 Acre is a Group Housing Project with 1032 units having pending works of part Compound Wall, some Landscape, refurbishment and new Roads etc.. **Unihomes Phase 2** spread across 9.81 Acre is a Group Housing Project with 1128 units having pending works of part Compound Wall, some Landscape, refurbishment and new Roads etc... **Uniworld Gardens (Phase 3)** spread across 5.55 Acre is a Group Housing Project with 336 units having pending works of part Compound Wall, entire Landscape and new Roads etc. complete.
2. The quantities of various items as entered in the "BILL OF QUANTITIES" are approximate and may vary depending upon the actual requirement of the work. The contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items specified in the bill of quantities. The variation of quantities will be governed as per Section 3, clause No. 6.0 of the contract
3. The approximate balance works are as under for main components of work:

<u>Sr. No.</u>	<u>Particulars</u>	<u>Phase 1</u>	<u>Phase 2</u>	<u>Phase 3</u>
	Civil works	15%	35%	75%
	Internal finishing works & flooring	N.A.	N.A.	N.A.
	External finishing works	25%	45%	95%
	HVAC / Ventilation works	N.A.	N.A.	N.A.
	Electrical works	N.A.	N.A.	N.A.
	Plumbing & sanitary works	15%	25%	95%
	Common infrastructure	15%	55%	95%
	External works	25%	55%	95%
	Soft and Hard Landscape Work	35%	55%	100%
	Roads and Other contingent work	50%	55%	100%

4. These quantities given in percentage above are approximate only. These may vary at site during execution of work for completing the works as per SOR/BOQ Items.

Annexure - II
(Special Condition of Contract)

Scope of Supply

1. Scope of Supply shall be as specified in the technical section of the bidding document.
2. All material, equipment, consumables etc. required for successful completion of the works are to be supplied by the contractor.
3. All materials, equipment, labour & consumables required for successful completion of work as per the description of items in the Schedule of Rates shall be supplied by the Contractor and the cost of such supply shall be deemed to be included in the quoted rates without any additional liability on the Employer except for the material (if any) specifically covered under Employer's Scope of Supply.
4. The Equipment tools and tackles to facilitate construction and after final commissioning, Performance Guarantee, Test run shall be in Contractor's scope. The Contractor may arrange the same through purchase/ hire/ lease basis and such equipment, tools, tackles shall remain the property of the Contractor and it shall be removed from site after its requirement is over. No additional payment shall be made for mobilization and/or demobilization of such equipment, tools & tackles etc.

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Annexure- III
(Special Condition of Contract)

Time Schedule

Name of Work: Construction of Balance & New Compound Development, Road & Landscape works of Unihomes Phase 1, Phase 2 & Phase 3 at Plot GH-01, Sector 117, NOIDA, U.P. as mentioned in Schedule of Rates :

Sr. No.	Description	Time of Completion
1	Execution of Balance / Refurbishment & New Construction of Roads, Landscaping, Compound Development etc. for and around Unihomes Phase 1, Phase 2 & Phase 3 at Sector 117, NOIDA, U.P..	24 Month (1) Road resurfacing Work Phase 1: 6 Month (2) New Roads Phase 1 & Phase 2: 21 Month (3) Compound Wall: 18 Month (4) Landscape work for the project: 24 Month

Notes:

1. Time of Completion shall be as defined in the NIT.
2. The Time indicated is for completing all the works in all respects as necessary and as per specifications, codes, drawings and instructions of Engineer-in-Charge.
3. The Contractor shall prepare and furnish a Micro as well as Macro Schedule jointly in consultation with PMC. This Schedule which will form part of Contract shall reflect progressive stagewise handing over of priority areas during the currency of Contract.

Annexure- IV
(Special Conditions of Contract)
Qualifications & Experience of Key Construction Personnel

1. Minimum Qualification, Experience & Numbers of Key Personnel to be deployed along with rate of recovery in case minimum staff not deployed:

Sr. No.	Category	Qualification & Experience	Nos.	Rate at which recovery shall be made per month form the contractor in the event of not fulfilling provision of clause 36
1	Project Head	Degree in Engineering with minimum 15 years of relevant experience. He should have experience of supervising construction of Residential/ Commercial/ Institutional building complex and must have completed at least one major project from construction commencement till handover.	1	₹ 100000/- Rupees One Lac Only
2	Discipline Engineers	Degree in relevant Engineering / Horticulture with minimum 5 years' experience in Construction of commercial / institutional building / Group Housing complex. Civil Engineer OR Diploma in relevant Engineering Discipline with minimum 10 years' experience in Construction of commercial/ institutional building complex. Diploma Engineer Civil Diploma Engineer Horticulture	1 1	₹ 75000/- Rupees Seventy five thousand Only
3	QA/QC Engineer	Degree in Engineering with minimum 10 years' relevant experience OR Diploma in Engineering with minimum 15 Years' relevant experience.	To ensure the compliance of clause 33.0 Page 79	₹ 75000/- Rupees Seventy five thousand Only
4	Safety Manager	A recognized degree/ diploma or equivalent in any branch of engineering or technology. Also, had practical experience of working in a construction project site in supervisory capacity for a period of not less than 10-15 years. Possesses a degree or diploma in construction / industrial safety recognized by the Central / State Government.	1	₹. 60000/- Rupees Sixty thousand Only

Sr. No.	Category	Qualification & Experience	Nos.	Rate at which recovery shall be made per month form the contractor in the event of not fulfilling provision of clause 36
5	Horticulturist	A recognized degree/ diploma or equivalent in Horticulture or Agriculture with practical experience of working in a Soft Landscape project site in supervisory capacity for a period of not less than 5-10 years. Possesses a degree or diploma in Horticulture recognized by the Central / State Government is mandatory.	2	₹ 75000/- Rupees Seventy Five thousand Only
6	Head Mali	The Head Mali should be diploma holder in Horticulture or Agriculture with minimum 3 years' experience in gardening and handling of tools and knowledge of Bonsai/grafting etc..	1	₹ 50000/- Rupees Fifty thousand Only
7	Watersupply, Drainage and /or PHE & Fire Fighting Engineer	A recognized degree/ diploma or equivalent in Civil / Mechanical engineering or technology. Also, should have practical experience of working in a construction project site in supervisory capacity for a period of not less than 5-10 years..	1	₹ 50000/- Rupees Fifty thousand Only
8	Q.S. / Billing Engineer	A recognized degree/ diploma or equivalent in Civil / Mechanical engineering or technology. Also, should have practical experience of working in a construction project site in supervisory capacity for a period of not less than 5-10 years..	2	₹ 50000/- Rupees Fifty thousand Only

2. Notes-

- (i) The detail of manpower required to be deployed by the contractor during Construction for Completion of the work within schedule time is Indicative only. This should be corresponding to the scale and size of the Contract. The Contractor is required to augment the above list with additional numbers/categories of personnel as required and/or as directed by Engineer-in-Charge to carry out the works in working hours including night shifts and complete the work within the stipulated completion schedule.
- (ii) The Key Personnel identified above shall be well qualified & having adequate relevant experience as specified in document above. The other manpower shall also be qualified and experienced with their assigned work. The contractor shall submit the month wise Detailed Manpower Deployment schedule along with the Bid.
- (iii) Engineering, Supervisory and Administrative Manpower as necessary for Rate of Progress shall be maintained on site and offices as required &/or directed by the Engineer-in-Charge.
- (iv) CVs of key persons proposed to be deployed shall be submitted to Engineer-in-Charge prior to their mobilization at site.

Annexure - V

(Special Conditions of Contract)

Indicative List of Equipment & Machinery to be deployed by the Contractor

The Equipment/ Machinery required to be mobilized by the contractor during Construction to Complete the work within schedule time is Indicative only. Contractor is required to augment the above list with additional numbers/categories as required and/or as directed by Engineer-In-Charge to carry out the works within the completion schedule.

Sr. No.	Equipment	Minimum Capacity	Indicative Nos.
1	Concrete Vibrator (Electrical / Pneumatic / Diesel)	No.-	As required
2	DG Set	40 KVA	1
3	Water Pumps	No.	As required
4	Bar Cutting Machine	No.	As required
5	Bar Bending Machine	No.	As required
6	HILTI Breaker	No.	2
7	Steel Scaffolding pipes , clamps and related accessories	No.	As Required
8	Concrete Mixture Machines	No.	As required
9	New PLC operated Batching Plant of minimum 15 Cu.M. per Hour capacity	No.	As required
10	Concrete Pumps (20 Cu.M. per Hour and 60 m Lift)	No.	As required
11	Transit Mixers (6 Cu.M./8 Cu.M.)	No.	As required
12	Dewatering Pump (5/10/15 HP)	No.	As required
13	Power Winch & Hand Winches	No.	As required
14	Compressor and Pneumatic Jack Hammer	No.	As required
15	Electric Breaker	No.	As required

Sr. No.	Equipment	Minimum Capacity	Indicative Nos.
16	Plate Compactor	No.	As required
17	Civil Testing Laboratory with Testing Equipment as per BIS, Total Station, Auto Level and Staff	No.	As required
18	Electric Blower, Walk Behind Blower	No.	As required
19	Portable Welding Machines	No.	As required
20	Safety Shoes, Safety Glasses, Long Trousers	No.	As required
21	Tool Pouch, Tool Box, Tool Bucket	No.	As required
22	Pliers, Adjustable Wrench, Utility Knife with Blades, Hand Saw	No.	As required
23	Drill, Drill Bits, Cutters, Torch, Battery operated Brush Cutter	No.	As required
24	Spade Shovel, Flat Shovel, Edging Shovel	No.	As required
25	Water Pipe (PVC / cPVC) of desired dia.	Meter	As required
26	Pitch Fork, Digging Fork, Pry Bar, Sledge Hammer, Axe, Push Broom, Whisk Broom, Wheel Barrow, etc.	No.	As required
27	String Trimmer, Hedge Trimmer	No.	As required
28	Electrical Lawn Mowers, Quick Turn Mower	No.	As required
29	Post Hole Digger	No.	As required
30	Grass Trimmer	No.	As required

The Equipment/ Machinery required to be mobilized by the contractor during Construction to Complete the work within schedule time is Indicative only. Contractor is required to augment the above list with additional numbers/categories as required and/or as directed by Engineer-In-Charge to carry out the works within the completion schedule.

Annexure - VI
(Special Conditions of Contract)
Material lying at site to be supplied by the Employer

<u>S</u> <u>No.</u>	<u>Material</u>	<u>Quantity</u>	<u>Rate</u>	<u>Remarks</u>
	<u>Not Applicable</u>			

Annexure - VII
(Special Conditions of Contract)

**List of Plant & Equipment in possession of Employer, lying at Site
along with rates to be recovered from the Contractor.**

Sr. No.	Name of Equipment	Unit	Qty.	Rate (₹) per Unit
	<u>NOT APPLICABLE</u>			

Annexure - VIII
(Special Conditions of Contract)

Health, Safety & Environment Management Plan

1. SCOPE

This specification establishes the Health, Safety and Environment (HSE) management requirement to be complied by Contractors/Vendors including their sub-contractors/sub vendors during construction.

This specification is not intended to replace the necessary professional judgment needed to design & implement an effective HSE system for construction activities and the contractor is expected to fulfill HSE requirements in this specification as a minimum. It is expected that contractor shall implement best HSE practices beyond whatever are mentioned in this specification.

Requirements stipulated in this specification shall supplement the requirements of HSE Management given in relevant Act(s)/ Legislations, General Conditions of Contract (GCC), Special Conditions of Contract (SCC) and Technical Specifications. Where different documents stipulate different requirements, the most stringent shall apply.

2. REFERENCES

The document should be read in conjunction with following:

- General Conditions of Contract (GCC)
- Special Conditions of Contract (SCC)
- Building and other construction workers Act,
- Indian Factories Act
- Technical specifications
- Relevant State & National Statutory requirements.
- Operating Manuals Recommendation of Manufacturer of various construction Machineries

3. REQUIREMENTS OF HEALTH, SAFETY & ENVIRONMENTAL (HSE) MANAGEMENT SYSTEM TO BE COMPLIED BY CONTRACTORS

3.1 Management Responsibility

3.1.1 HSE Policy & Objectives

The Contractor should have a documented and duly approved HSE policy & objectives to demonstrate commitment of their organization to ensure health, safety and environmental aspects in their line of operations.

3.1.2 Management System

The HSE management system of the Contractor shall cover the HSE requirements & commitments to fulfill them, including but not limited to what have been specified under clauses 1.0 and 2.0 above. The Contractor shall obtain the approval of its site specific HSE Plan from Engineer in charge prior to commencement of any site works. Corporate as well as Site management of the Contractor shall ensure compliance of their HSE Plan at work sites in its entirety in true spirit.

3.1.3 Indemnification

Contractor shall indemnify & hold harmless, Owner/PMC & their representatives, free from any and all liabilities arising out of non-fulfillment of HSE requirements or its consequences.

3.1.4 Deployment & Qualifications of Safety Personnel

The Contractor shall designate / deploy various categories of HSE personnel at site as indicated below in sufficient number. The Safety supervisors, Safety stewards/Observer etc. would facilitate the HSE tasks at grass root level for construction sites and shall assist Safety Officer /Engineers. Contractor shall appoint safety personnel as given below;

3.1.4.1 Safety Observer/Steward: Contractor shall depute one Safety Observer/Steward.

3.1.4.2 Safety Supervisor: In addition to above, contractor shall depute one Safety Supervisor for every 250 workers and additionally thereon.

3.1.4.3 Safety Engineer: In addition to above (i & ii), one safety engineer/ officer for every 1000 workers and additionally thereon.

a) Safety Steward/Observer

As a minimum, he shall possess class XII pass certificate and should have minimum two year of practical experience in construction work environment and should have adequate knowledge of the local language spoken by majority of the workers at the construction site.

b) Safety Supervisor

As a minimum, he shall possess a recognized graduation Degree or a Diploma in Engg. with minimum Two years of practical experience in construction work environment and should possess requisite skills to deal with construction safety related day-to-day issues.

c) Safety Officer / Safety Engineer

Safety Officer/Engineer should possess following qualification & experience:

(i) Recognized degree in any branch of Engg. or Tech. or Architecture with practical experience of working in a building or other construction work in supervisory capacity for a period of not less than two years, **or** possessing recognized diploma in any branch of Engg. or Tech with practical experience of working in a building or other construction work in supervisory capacity for a period of not less than five years.

(ii) Recognized degree or one year diploma in Industrial safety (from any reputed Indian Institutes).

(iii) Preferably have adequate knowledge of the language spoken by majority of the workers at the construction site.

Alternately

(i) Person possessing Graduation Degree in Science with Physics & Chemistry and degree or one year diploma in Industrial Safety (from any reputed Indian institutes) with practical experience of working in a building, plant or other construction works (as Safety Officer) for a period of not less than five years, may be considered as Safety Officer.

The Contractor shall verify & authenticate credentials of such safety personnel and furnish Bio-Data/Resume/Curriculum Vitae of the safety personnel as above for approval of Engineer in charge.

Imposition/ Realization of penalty shall not absolve the Contractor from his/her responsibility of deploying competent safety officer at site.

Adequate planning and deployment of safety personnel shall be ensured by the Contractor so that field activities do not get affected because of non-deployment of competent & qualified safety personnel in appropriate numbers.

3.1.5 Implementation, Inspection/Monitoring

- a) The Contractor shall be fully responsible for planning, reporting, implementing and monitoring all HSE requirements and compliance of all laws & statutory requirements.
- b) The Contractor shall also ensure that the HSE requirements are clearly understood & implemented conscientiously by their site personnel at all levels at site.
- c) The Contractor shall ensure physical presence of their field engineers / supervisors, during the continuation of their contract works / site activities including all material transportation activities. Physical absence of experienced field engineers / supervisors of Contractor at critical work spot during the course of work may invite halting / stoppage of work.
- d) The Contractor shall regularly review inspection report internally and implement all practical steps / actions for improving the status continuously.
- e) Contractor skilled workmen like riggers, scaffold erectors, welders, crane operators etc. should have sufficient past experience and skill on the relevant job.
- f) The Contractor shall ensure important safety checks right from beginning of works at every work site locations. and to this effect format No. HSE-10 "Daily Safety Check List" shall be prepared by field engineer & duly checked by safety personnel for conformance.
- g) The Contractor shall carry out inspection to identify various unsafe conditions of work sites/machinery/equipments as well as unsafe acts on the part of workmen/supervisor/engineer while carrying out different project related works.
- h) Adequate records for all inspections shall be maintained by the Contractor and the same shall be furnished to Engineer in charge, whenever sought.
- i) As a general practice lifting tools/tackles, machinery, accessories etc. shall be inspected, tested and examined by competent person (approved by concerned State authorities) before being used at site and also at periodical interval (e.g. during replacement, extension, modification, elongation/reduction of machine/parts, etc.) as per

relevant statutes. Hydra, cranes, lifting machinery, mobile equipments/ machinery/ vehicles, etc. shall be inspected regularly by only competent / experienced personnel at site and requisite records for such inspections shall be maintained by contractor. Contractor shall also maintain records of maintenance of all other site machinery (e.g. generators, rectifiers, compressors, cutters, etc.) & portable tools/equipments being used at project related works (e.g. drills, abrasive wheels, punches, chisels, spanners, etc.).

- j) Site facilities /temporary. installations, e.g. batching plant, cement go down, DG-room, temporary electrical panels/distribution boards, fabrication yards, etc. and site welfare facilities, like labour colonies, canteen/pantry, rest-shelters, motor cycle/bicycle-shed, First-aid centers, urinals/toilets, etc. should be periodically inspected by Contractor.

3.1.6 Awareness and Motivation

- a) The Contractor shall promote and develop awareness on Health, Safety and Environmental protection among all personnel working for the Contractor.
- b) The contractor shall display safety statistics board at all prominent location .Also shall provide dedicated notice board for displaying of safety alerts or any other safety related notices for awareness site workforces.
- c) Regular awareness programs and fabrication shop/work site meetings at least on monthly basis shall be arranged on HSE activities to cover hazards/risks involved in various operations during construction.
- d) Contractor to motivate & encourage the workmen & supervisory staff by issuing/ awarding them with tokens/ gifts/ mementos/ monetary incentives/ certificates etc. The motivational program shall be organized on regular basis.

3.1.7 Fire Prevention & First-Aid

- a) The Contractor shall arrange suitable First-aid measures such as First Aid Box
(Refer Appendix-B for details), stand-by Emergency Vehicle .Additionally separate ambulance. At least one fire extinguisher shall be placed at each location of DG Set, Hot works, electrical booth etc.
- b) The Contractor shall arrange installation of fire protection measures such as adequate number of steel buckets with sand & water and adequate number of appropriate portable fire extinguishers (Refer Appendix-C for details) to the satisfaction of EIL/Owner.
- c) The Contractor shall arrange EMERGENCY MOCK DRILL like fire, bomb threat, gas leakage, earth quake, etc. at each site at least once in three months, involving site workmen and site supervisory personnel & engineers.
- d) The contractor shall require to tie-up with the hospitals located in the neighborhood for attending medical emergency.

3.1.8 Documentation

The Contractor shall evolve a comprehensive, planned and documented system covering the following as a minimum for implementation and monitoring of the HSE requirements and the same shall be submitted for approval by owner/EIL.

- HSE Organogram
- Site specific HSE Plan
- Safety Procedures, forms and Checklist. Indicative list of HSE procedures is attached as Appendix :H
- Inspections and Test Plan

3.1.9 Audit

The Contractor shall submit an Audit Plan to Engineer in charge indicating the type of audits covering following as minimum:

- a) Internal HSE audits regularly on six monthly basis by engaging internal qualified auditors However, minimum two internal HSE audit will have to be conducted irrespective of time period of the contract.

All HSE shortfalls/ non-conformances on HSE matters brought out during review/audit, shall be resolved forthwith (generally within a week) by Contractor& compliance report shall be submitted to Engineer in charge.

In addition to above audits by contractor, the contractor's work shall be subjected to HSE audit by Engineer in charge at any point of time during the pendency of contract. The Contractor shall take all actions required to comply with the findings of the Audit Report and issue regular Compliance Reports for the same to Engineer in charge till all the findings of the Audit Report are fully complied.

Failure to carry-out HSE Audits& its compliance by Contractor, shall invite penalization.

3.1.10 Meetings

- i. The Contractor shall ensure participation of his top most executive at site (viz. Resident Construction Manager / Resident Engineer/ Project Manager / Site-in-Charge) in Safety Committee/HSE Committee meetings arranged by Engineer in charge usually on monthly basis or as and when called for. In case Contractor's top most executive at site is not in a position to attend such meeting, he shall inform Engineer in charge in writing before the commencement of such meeting indicating reasons of his absence and nominate his representative – failure to do so may invite very stringent penalization against the specific Contractor, as deemed fit as per Contract. The obligation of compliance of any observations during the meeting shall be always time bound. The Contractor shall always assist Engineer in charge to achieve the targets set by them on HSE management during the project implementation.
- ii. In addition, the Contractor shall also arrange internal HSE meetings

chaired by his top most executive at site on fortnightly basis and maintain records. Such internal HSE meetings shall essentially be attended by field engineers / supervisors including safety personnel of the Contractor and its associates. Records of such internal HSE meetings shall be maintained by the Contractor for review by Engineer in charge or for any HSE Audits.

iii. Agenda of internal HSE meeting should broadly cover: -

- a) Confirmation of record notes /minutes of previous meeting
 - b) Discussion on outstanding subjects of previous points / subjects, if any
 - c) Incidents / Accidents (of all types) at project site, if any
 - d) Current topics related to site activities / subjects of discussion
 - e) House keeping
 - f) Information / views / deliberations of members / site sub-contractors
 - g) Report from Owner / Client
 - h) Status of Safety awareness, Induction programs & Training programs
- The time frame for such HSE meeting shall be religiously maintained by one and all.

3.1.11 Intoxicating drinks & drugs and smoking

- a) The Contractor shall ensure that his staff members & workers (permanent as well casual) shall not be in a state of intoxication during working hours and shall abide by any law relating to consumption & possession of intoxicating drinks or drugs in force.
- b) The Contractor shall not allow any workman to commence any work at any locations of project activity who is/are influenced / effected with the intake of alcohol, drugs or any other intoxicating items being consumed prior to start of work or working day.
- c) Awareness about local laws on this issue shall form part of the Induction Training and compulsory work-site discipline.
- d) The Contractor shall ensure that all personnel working for him comply with “No-Smoking” requirements of the Owner as notified from time to time. Cigarettes, lighters, auto ignition tools or appliances as well as intoxicating drugs, dry tobacco powder, etc. shall not be allowed inside the project / plant complex.
- e) Smoking shall be permitted only inside smoking booths, if any, exclusively designated & authorized by the Engineer in charge.

3.1.12 Penalty

The Contractor shall adhere consistently to all provisions of HSE requirements. In case of non-compliances and also for repeated failure in implementation of any of the HSE provisions, Engineer in charge may impose stoppage of work without any cost & time implication to the Owner

and/or impose a suitable penalty.

The amount of penalty to be levied against defaulted Contractor shall be up to a cumulative limit of 2.0% (Two percent) of the contract value.

This penalty shall be in addition to all other penalties specified elsewhere in the contract. The decision of imposing stop-work-instruction and imposition of penalty shall rest with Engineer in charge. The same shall be binding on the Contractor. Imposition of penalty does not make the Contractor eligible to continue the work in unsafe manner.

The amount of penalty applicable for the Contractor on different types of HSE violations is specified below:

Sl. No.	Violation of HSE Norms	Penalty Amount
1.	For not using personal protective equipment like Helmet, Safety Shoes, and other safety gadgets as applicable as per nature of work.	Rs.500/- per day/Item / Person
2.	Execution of work without deployment of requisite field engineer / supervisor at work spot	Rs.5,000/- per violation per day
3.	Unsafe electrical practices (not installing ELCB, using poor joints of cables, using naked wire without top plug into socket, laying wire/cables on the roads, electrical jobs by incompetent person, etc.)	Rs.5,000/- per item per day
4.	Working at height without full body harness, using non-standard/ rejected scaffolding and not arranging fall protection arrangement as required, like handrails, life-lines, Safety Nets etc.	Rs.10,000/ per - case per day
5.	No fencing/barricading of excavated areas / trenches.	Rs.5,000/- per occasion
6.	Absence of Contractor's RCM/SIC or his nominated representative (prior approval must be taken for each meeting for nomination) from site HSE meetings whenever called by EIL/Owner& failure to nominate his immediate deputy for such HSE meetings.	Rs.10,000/ per - meeting

7.	Poor House Keeping	Rs.5,000 /- per occasion per subject
8.	Failure to report & follow-up accident (including Near Miss) reporting system within specific timeframe.	Rs.20,000/ per - occasion
9.	Failure to deploy adequately qualified and competent Safety Officer	Rs.10,000/ per - day
10.	Any violation not covered above	To be decided by Engineer i n charge

Note: Penalty amount deducted from the contractor shall be utilized by Engineer in charge for the promotion of the safety during the currency of the project.

The Contractor shall make his field engineers/supervisors fully aware of the fact that they keep track with the site workmen for their behavior and compliance of various HSE requirements. Safety lapses / defects of project construction site shall be attributable to the concerned job supervisor / engineer of the Contractor, (who remains directly responsible for safely executing field works). For repeated HSE violations, concerned job supervisor / engineer shall be reprimanded or appropriate action, as deemed fit, shall be initiated (with information to Engineer in charge) by the concerned Contractor.

Contractor shall initiate verbal warning shall be given to the worker/employee during his first HSE violation. A written warning shall be issued on second violation and specific training shall be arranged / provided by the Contractor to enhance HSE awareness/skill including feedback on the mistakes/ flaws. Any further violation of HSE stipulations by the erring individuals shall call for his forthright debar from the specific construction site. A record of warnings for each worker/employee shall be maintained by the Contractor, like by punching their cards / Gate passes or by displaying their names at the Project entry gate. Warnings, penalizations, appreciations etc. shall be discussed in HSE Committee meetings by site Head of the Contractor.

3.1.13 Accident/ Incident investigation

All accidents/incidents shall be informed to Engineer in charge at least telephonically by Contractor immediately and in writing within 24 hours on Format No. HSE-2 as applicable, by Contractor. Thereafter, a Supplementary Accident/Incident investigation Report on Format No. HSE-3 shall be submitted to EIL/Owner within 72 hours. Near Miss incident(s), Dangerous accidents/incident shall also be reported on Format No. HSE-4 within 24 hours. The accident/ incident shall be investigated by a team of Contractor's senior Site personnel (involving Site-in- Charge or at least by his deputy) for establishing root-cause and recommending corrective & preventive actions. Findings shall be documented and suitable actions taken to avoid recurrences shall be communicated to Engineer in charge. Engineer in charge shall have the liberty to independently investigate such occurrences and the Contractor shall extend all necessary help and cooperation in this regard. Engineer in charge shall have the right to share the content of this report with the outside world.

3.2 House Keeping

The Contractor shall ensure that a high degree of housekeeping is maintained and shall ensure inter-alia; the followings:

- a) All surplus earth and debris are removed/disposed-off from the working areas to designated location(s).
- b) Unused/surplus cables, steel items and steel scrap lying scattered at different places within the working areas are removed to identify location(s).
- c) All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from work place to identified location(s).
- d) Roads shall be kept clear and materials like pipes, steel, sand, boulders, concrete, chips and bricks etc. shall not be allowed on the roads to obstruct free movement of men & machineries.
- e) Fabricated steel structural, pipes & piping materials shall be stacked properly.
- f) Water logging on roads shall not be allowed.
- g) No parking of trucks/trolleys, cranes and trailers etc. shall be allowed on roads, which may obstruct the traffic movement.
- h) Utmost care shall be taken to ensure over all cleanliness and proper upkeep of the working areas.
- i) Protective measures to be ensured with projected rebar by suitable means.
- j) Trucks carrying sand, earth and pulverized materials etc. shall be

covered while moving within the plant area/ or these materials shall be transported with top surface wet.

- k) The contractor shall ensure that the atmosphere in plant area and on roads is free from particulate matter like dust, sand, etc. by keeping the top surface wet for ease in breathing.
- l) At least two exits for any unit area shall be assured at all times – same arrangement is preferable for digging pits/ trench excavation/ elevated work platforms/ confined spaces etc.
- m) Welding cables and the power cable must be segregated and properly stored and used. The same shall be laid away from the area of movement and shall be free from obstruction.
- n) Schedule for upkeep /cleaning of site to be firmed up and implemented on regular basis.

The Contractor shall carry-out regular checks (minimum one per fortnight) as per format No. HSE-11 for maintaining high standard of housekeeping and maintain records for the same. The Contractor shall provide supervisor for housekeeping exclusively for management of day-to-day housekeeping activities.

3.3 HSE Measures

3.3.1 Construction Hazards

The Contractor shall ensure identification of all Occupational Health, Safety & Environmental hazards in the type of work he is going to undertake and enlist mitigation measures specially towards following activities;

- a) Working at height (+2.0 Mts height)
- b) Work in confined space,
- c) Deep excavations & trench cutting (depth > 2.0 mts.)
- d) Operation & Maintenance of Batching Plant.
- e) Shuttering / concreting (in single or multiple pour) for columns, parapets & roofs.
- f) Erection & maintenance of Tower Crane.
- g) Erection of structural steel members / roof-trusses / pipes at height more than 2.0 Mts. with or without crane.
- h) All lifts using 100T Crane plus mechanical pulling.
- i) Any lift exceeding 80% capacity of the lifting equipments (hydra, crane etc.).
- j) Laying of pipes (isolated or fabricated) in deep narrow trenches – manually or mechanically.
- k) Maintenance of crane / extension or reduction of crane-boom on

roads or in yards.

- l) Erection of any item at >2.0 Mts. height using 100T crane or of higher capacity
- m) Work in Live Electrical installations / circuits
- n) Demolishing/ dismantling activities
- o) Welding/ gas cutting jobs at height (+2.0 Mts.)
- p) Lifting/placing roof-girders at height (+2.0 Mts.)
- q) Working in "Charged/Live" elect. Panels
- r) Erection/dismantling of scaffolding

The necessary HSE measures devices shall be put in place, prior to start of an activity & also shall be maintained during the course of works, by the Contractor.

3.3.2 Accessibility

- e) The Contractor shall provide safe means of access(in sufficient numbers) & efficient exit to any working place including provisions of suitable and sufficient scaffolding at various stages during all operations of the work for the safety of his workmen and EIL/Owner.
- f) The Contractor shall implement use of all measures including use of "life line", "fall- arresters", "retractable fall arresters", "safety nets" etc. during the course of using all safe accesses & exits, so that in no case any individual remains at risk of slip & fall during their travel.
- g) A ladder or step- ladder must have a level and firm footing, in case of use of fixed ladders, sufficient foot hold and hand hold to be provided.
- h) The access to operating plant / project complex shall be strictly regulated. Any person or vehicle entering such complex shall undergo identification check, as per the procedures in force / requirement of Engineer in charge.
- i) Accessibility to 'confined space' shall be governed by specific system / regulation, as established at project site.

3.3.3 Personal Protective Equipment (PPEs)

- a) The Contractor workmen shall be permitted entry inside the project premises only with proper PPEs.
- b) The Contractor shall ensure that all their staff, workers and visitors including their sub- contractor(s) have been issued (records to be kept) & wear appropriate PPEs like nape strap type safety helmets preferably with head & sweat band with $\frac{3}{4}$ " cotton chin strap, High ankle safety shoes with steel toe cap and antiskid sole, full body harness, protective

goggles, gloves, ear muffs, respiratory protective devices, etc. All these gadgets shall conform to applicable IS Specifications. The Contractor shall implement a regular regime of inspecting physical conditions of the PPEs being issued / used by the workmen of their own & also its sub-agencies and the damaged / unserviceable PPEs shall be replaced forthwith.

- c) Engineer in charge may issue a comprehensive color scheme for helmets to be used by various agencies. The Contractor shall follow the scheme issued by the Engineer in charge and shall choose colour other than blue (for Owner and their representatives). All HSE personnel shall preferably wear dark green band on their helmet or green color safety helmet so that workmen can approach them for guidance during emergencies. HSE personnel shall preferably wear such dresses with fluorescent stripes, which are noticeable during night, when light falls on them.
- d) Florescent jackets with respective company logo to be worn by the contractor workmen with different color coding for categories like supervisor and workmen.
- e) An indicative list of HSE standards/codes is given under **Appendix-A**.
- f) Contractor shall ensure procurement & usage of following safety equipments/ accessories (conforming to applicable IS mark) by their staff, workmen & visitors including their subcontractors all through the span of project construction.
 - i. PPEs (Helmet with company name/logo, Safety Goggles, Coverall, Ear-muff, Face Shield, Hand Gloves, High Ankle Safety Shoes, Gum Boot etc.)
 - ii. Barricading tape / warning signs
 - iii. Rechargeable Safety torch (flame-proof)
 - iv. Safety nets (with tie-chords)
 - v. Fall arresters
 - vi. Portable ladders (varying lengths)
 - vii. Life-lines (steel wire-rope, dia. not less than 8.0 mm)
 - viii. Full body double lanyard Safety harness with Rebar/ladder hook or scaffolding hook.
 - ix. Retractable fall arresters (various length)
 - x. Portable fire extinguishers of adequate capacity
 - xi. Portable Multi Gas detector

3.3.4 Working at height

- a) The Contractor shall issue permit for working (PFW) at height after verifying and certifying the checkpoints as specified in the attached

permit (Format No. HSE-6). He shall also undertake to ensure compliance to the conditions of the permit during the currency of the permit including adherence of personal protective equipments. Contractor's Safety Officer shall verify compliance status of the items of permit document after implementation of action is completed by Contractor's execution / field engineers at work site.

- b) Such PFW shall be initially issued for one single shift or expected duration of normal work and extended further for balance duration, if required.
- c) Contractors are expected to maintain a register for issuance of permit and extensions thereof including preserving the used permits for verification during audits etc.
- d) The Contractor shall ensure that Full body harnesses with double lanyards conforming IS Specifications is used by all personnel while working at height. The life lines should have enough tensile strength to take the load of the worker in case of a fall. The harness should be capable of keeping the workman vertical in case of a fall, enabling him to rescue himself.
- e) The Contractor shall ensure that a proper Safety Net System is used wherever the hazard of fall from height is present. The safety net, preferably a knotted one with mesh ropes conforming to relevant IS specifications shall have a border rope & tie cord of minimum 12mm dia. The Safety Net shall be located not more than 6.0 meters below the working surface extending on either side upto sufficient margin to arrest fall of persons working at different heights.
- f) In case of accidental fall of person on such Safety Net, the bottom most portion of Safety Net should not touch any structure, object or ground.
- g) Beam Clamps may be used for construction of localized temporary working platforms
sheds for welding booths etc. at height in all types of steel structure due to faster installation and requirement of less scaffolding materials.
- h) Hanging Platform, manufactured by Standard HSE equipment vendors must be encouraged for painting of Buildings etc.
- i) All the tools used at height (like spanner, screw driver etc.) shall be provided with securing arrangement like back-pack/waist pouch to prevent accidental slippage from worker hand.
- j) The Contractor shall install temporary lightening arrester in tall structures during construction to save human life and to avoid damage

to equipments & machineries. During the possibility of a thunderstorm, all the work at height where a person can be exposed to lightning shall be stopped.

3.3.5 Scaffoldings& Barricading

- a) Suitable steel scaffoldings only shall be provided to workmen for all works that cannot be safely done from the ground or from solid construction except such short period work that can be safely done using ladders or man-basket. When a ladder is used, an extra workman shall always be engaged for holding the ladder. The ladder shall be inspected before use for cracked or split stiles, missing, broken, loose or damaged rungs & splinters. The ladder shall be of adequate length to enable it to extend to at least 1.0m above the landing place or working point. Metallic ladders shall be only used as access.
- b) The Contractor shall ensure that the scaffolds used during construction activities shall be strong enough to take the designed load. Only metallic scaffold boards shall be allowed to use. Steel tubes shall be free from cracks, splits, Surface flaws & other defects. All couplers & fittings shall be properly oiled and maintained.
- c) All scaffolds shall be inspected by a safety officer. He shall paste a GREEN tag on each scaffold found safe and a RED tag on each scaffold found unsafe. Scaffolds with GREEN tag only shall be permitted to be used and Scaffolds with RED ones shall immediately be made inaccessible.
- d) The Contractor shall ensure positive barricading (indicative as well as protective) of the excavated, radiography, heavy lift, high pressure hydrostatic & pneumatic testing and other such areas. Sufficient warning signs shall be displayed along the barricading areas.
- e) Scaffolding shall be constructed using foot seals or base plates only. Base plates shall be used below each standard on surface. Sole plate of timber shall be used beneath the base plate to achieve greater load distribution.

3.3.6 Electrical installations

- a) All electrical installations/ connections shall be carried out as per the provisions of latest Indian codes/standard.
- b) All temporary electrical installations / facilities shall be regularly

checked by the licensed/competent electricians of the Contractor.

The Contractor shall meet the following requirements:

- a. Ensure that electrical systems and equipment including tools & tackles used during construction phase are properly selected, installed, used and maintained as per provisions of the latest revision of the Indian Electrical/ applicable international regulations.
- b. Shall deploy qualified & licensed electricians.
- c. All switchboards / welding machines shall be kept in well-ventilated & covered shed/ with rain shed protection. The shed shall be elevated from the existing ground level to avoid water logging inside the shed. Installation of electrical switch board must be done taking care of the prevention of shock and safety of machine.
- d. No flammable materials shall be used for constructing the shed. Also flammable materials shall not be stored in and around electrical equipment / switchboard. Adequate clearances and operational space shall be provided around the equipment.
- e. Fire extinguishers and insulating mats shall be provided in all power distribution centers.
- f. Temporary electrical equipment shall not be employed in hazardous area without obtaining safety permit.
- g. Proper housekeeping shall be done around the electrical installations.
- h. All temporary installations shall be tested before energizing, to ensure proper earthing, bonding, suitability of protection system, adequacy of feeders/cables etc.
- i. All welders shall use hand gloves irrespective of holder voltage.
- j. Multilingual (Hindi, English and local language) caution boards, shock treatment charts and instruction plate containing location of isolation point for incoming supply, name & telephone No. of contact person in emergency shall be provided in substations and near all distribution boards / local panels.

- k. ELCB tester /test meter shall be used for testing the ELCBs operation. ELCBs testing shall be carried out by using ELCB tester on monthly basis but in specific cases like heavy rain as decided by owner/EIC. Record of the testing shall be maintained.
- l. Regular inspection of all installations at least once in a month.

The following features shall also be ensured for all electrical installations during construction phase by the contractor:

- a. Each installation shall have a main switch with a protective device, installed in an enclosure adjacent to the metering point. The operating height of the main switch shall not exceed 1.5 M. The main switch shall be connected to the point of supply by means of armoured cable.
- b. The outgoing feeders shall be double or triple pole switches with fuses / MCBs. Loads in a three phase circuit shall be balanced as far as possible and load on neutral should not exceed 20% of load in the phase.
- c. The installation shall be adequately protected against overload, short circuit and earth leakage by the use of suitable protective devices. Fuses wherever used shall be HRC type. Use of rewirable fuses shall be strictly prohibited. ELCB/RCCB (Residual Current Circuit Breaker) must be fitted with all Electrical installation. The earth leakage device shall have an operating current not exceeding 30 mA.
- d. All connections to the hand tools / welding receptacles shall be taken through proper switches, sockets and plugs.
- e. All single phase sockets shall be minimum 3 pin type only. All unused sockets shall be provided with socket caps.
- f. Only 3 core (P+N+E) overall sheathed flexible cables with minimum conductor size of 1.5 mm² copper shall be used for all single phase hand tools.
- g. Only metallic distribution boxes with double earthing shall be used at site. No wooden boxes shall be used.
- h. All power cables shall be terminated with compression type cable glands. Tinned copper lugs shall be used for multi-strand wires / cables.

- i. Cables shall be free from any insulation damage.
- j. Minimum depth of cable trench shall be 750 mm for MV & control cables and 900 mm for HV cables. These cables shall be laid over a sand layer and covered with sand, brick & soil for ensuring mechanical protection. Cables shall not be laid in waterlogged area as far as practicable. Cable route markers shall be provided at every 25 M of buried trench route. When laid above ground, cables shall be properly cleated or supported on rigid poles of atleast 2.1 M high. Minimum head clearance of 6 meters shall be provided at road crossings.
- k. Underground road crossings for cables shall be avoided to the extent feasible. In any case no underground power cable shall be allowed to cross the roads without pipe sleeve.
- l. All cable joints shall be done with proper jointing kit. No taped/temporary joints shall be used.
- m. An independent earthing facility should preferably be established within the temporary installation premises. All appliances and equipment shall be adequately earthed. In case of armored cables, the armour shall be bonded to the earthing system. IS: 3043 Code for earthing practices shall be followed at project site.
- n. All cables (green colour) and wire rope used for earth connections shall be terminated through tinned copper lugs.
- o. In case of local earthing, earth electrodes shall be buried near the supply point and earth continuity wire shall be connected to local earth plate for further distribution to various appliances. All insulated wires for earth connection shall have insulation of greencolour.
- p. Separate core shall be provided for neutral. Earth / Structures shall not be used as a neutral in any case.
- q. ON/OFF position of all switches shall be clearly designated / painted for easy isolation in emergency.

3.3.7 Ergonomics and tools & tackles

- a) The Contractor shall assign to his workmen, tasks commensurate with their qualification, experience and state of health.

- b) All lifting tools, tackles, equipment, trailers, trucks/dumpers, accessories including cranes shall be tested periodically by competent authority for their condition and load carrying capacity. Valid test & fitness certificates from the applicable authority shall be submitted to Engineer in charge for their review/acceptance before the lifting tools, tackles, equipment, trailers, trucks/dumpers, accessories and cranes are used. Third party inspection certificate is mandatory for all lifting tools & tackles before put into use.
- c) Load testing of Cranes by competent person must be made mandatory after each modification/alteration of crane configuration/change in boom length. All heavy equipments including cranes must be maintained in good condition & record of such maintenance shall be maintained.
- d) The contractor shall not be allowed to use defective equipment or tools not adhering to safety norms.
 - i. Tower Crane, Crane, Hydra mobile Crane (F-15 or equivalent), Hydraulic Rig & Boom
Lift shall be inspected on fortnightly basis as per Format No. HSE-20, HSE-21, HSE- 22, HSE-23 & HSE-24.
 - ii. **The Contractor shall deploy experienced operator & may arrange training program for operators of hydra mobile crane, crane, excavator, mobile machinery, Tower Crane, etc. at site by utilizing services from renowned manufacturers.**
 - iii. Hydra mobile crane (F-15 or equivalent) having steering control mechanism shall be permitted at construction site only for the purpose of loading/unloading. However, continuous rigger availability during marching of hydraulic crane at site shall be ensured by contractor.

3.3.8 Occupational Health

- a) The contractor shall identify all operations that can adversely affect the health of its workers and issue & implement mitigation measures.
- b) The Contractor shall arrange Medical Camps at regular intervals at work sites and labor colonies to assess health condition of workers.
- c) The Contractor shall ensure vaccination of all the workers including their families if residing at site, during the course of entire project span.

3.3.9 Hazardous substances

- a) Hazardous, inflammable and/or toxic materials such as solvent coating, thinners, anti- termite solutions, water proofing materials shall be stored in appropriate containers preferably with lids having spillage catchment trays and shall be stored in a good ventilated area. These containers shall be labeled with the name of the materials highlighting the hazards associated with its use and necessary precautions to be taken.
- b) The work place shall be checked prior to start of activities to identify the location, type and condition of any asbestos materials which could be disturbed during the work. In case asbestos material is detected, usage of appropriate PPEs by all personnel shall be ensured.

3.3.10 Slips, trips & falls

- a) The contractor shall establish a regular cleaning and basic housekeeping programme that covers all aspects of the workplace to help minimize the risk of slips, trips & falls. The contractor shall take positive measures like keeping the work area tidy, storing waste in suitable containers & harmful items separately, keeping passages, stairways, entrances & exits especially emergency ones clear, cleaning up spillages immediately and replacing damaged carpet/ floor tiles, mats & rugs at once to avoid slips, trips & falls.

3.3.11 Demolition/ Dismantling

- a) The contractor shall adhere to safe demolishing/ dismantling practices at all stages of work to guard against unsafe working practices.
- b) Before carrying out any demolition/dismantling work, the contractor shall take prior approval of Engineer in charge and generate the Format No.HSE-9.

3.3.12 Road Safety

- a) The Contractor shall ensure adequately planned road transport safety managementsystem.
- b) The vehicles shall be fitted with reverse warning alarms & flashing lights / fog-lights and usage of seat belts shall be ensured.
- c) The Contractor shall also ensure a separate pedestrian route for safety of the workers and comply with all traffic rules & regulations,

including maintaining speed limit of 20 KMPH or indicated by owner for all types of vehicles / mobile machinery. The maximum allowable speed shall be adhered to.

- d) In case of an alert or emergency, the Contractor must arrange clearance of all the routes, roads, access.
- e) Dumpers, Tippers, etc. shall not be allowed to carry workers within the site and also to & from the labour colony to & from project sites.
- f) The Contractor shall not deploy any such mobile machinery / Equipments, which do not have competent operator and / or experienced banks-man/signal-man. Such machinery/equipments shall have effective limit-switches, reverse-alarm, front & rear-end lights etc. and shall be maintained in good working order.
- g) The Contractor shall not carry-out maintenance of vehicles / mobile machinery occupying space on project / plant roads and shall always arrange close supervision for such works.
- h) Contractor's shall arrange /install visible road signs, diversion boards, caution boards, etc. on project roads for safe movement of men and machinery.

3.3.13 Welfare measures

Contractor shall, at the minimum, ensure the following facilities at work sites:

- a) A crèche at site where 10 or more female workers are having children below the age of 6 years.
- b) Adequately ventilated / illuminated rooms at labour camps & its hygienic up-keeping.
- c) Reasonable canteen facilities at site and in labour camps at appropriate location depending upon site conditions. Contractor shall make use of "industrial" variety of LPG cylinder & satisfactory illumination at the canteens. Necessary arrangement for efficient disposal of wastes from canteens & urinals /toilets shall also be made and regular review shall be made to maintain the ambience satisfactorily hygienic & shall also comply with all applicable statutory requirements.
- d) Adequately lighted & ventilated Rest rooms at site (separate for male workers and female workers).
- e) Provision for suitable mobile toilets to be made available by Contractor for remote/scattered job locations.
- f) Urinals, Toilets, drinking water, washing facilities, adequate lighting at site and labour camps.
- g) The contractor at periodic interval shall arrange to prevent mosquito

breeding by fumigation/spraying of insecticides at workplace/fabrication yard.

3.3.14 Environment Protection

Contractor shall ensure proper storage and utilization methodology of materials that are detrimental to the environment. Where required, Contractor shall ensure that only the environment friendly materials are selected and emphasize on recycling of waste materials, such as metals, plastics, glass, paper, oil & solvents. The waste that cannot be minimized, reused or recovered shall be stored and disposed of safely. In no way, toxic spills shall be allowed to percolate into the ground. The contractor shall not use the empty areas for dumping the wastes.

The contractor shall strive to conserve energy and water wherever feasible.

The contractor shall ensure dust free environment at workplace by sprinkling water on the ground at frequent intervals. The air quality parameters for poisonous gases, toxic releases, harmful radiations, etc. shall be checked by the contractor on daily basis and whenever need arises.

The contractor shall not be allowed to discharge chemicals, oil, silt, sewage, sillage and other waste materials directly into the controlled waters like surface drains, streams, rivers, ponds. A discharge plan shall be submitted to Engineer in charge for approval.

3.3.15 Rules & Regulations

All persons deployed at site shall be knowledgeable of and comply with the environmental laws, rules & regulations relating to the hazardous materials, substances and wastes. Contractor shall not dump, release or otherwise discharge or disposes off any such materials without the express authorization of Engineer in charge. An indicative list of Statutory Acts & Rules relating to HSE is given under Appendix-D.

3.3.16 Weather Protection

Contractor shall take appropriate measures to protect workers from severe storms, rain, solar radiations, poisonous gases, dust, etc. by ensuring proper usage of PPEs like Sun glasses, Sun screen lotions, respirators, dust masks, etc. and rearranging/ planning the construction activities to suit the weather conditions. Effective arrangement (without creating inconvenience to project facilities & permanent installations) for protecting workmen from hailstorm, drizzle in the form of temporary shelter shall be made at site.

3.3.17 Communication

All persons deployed at the work site shall have access to effective means of communication so that any untoward incident can be reported immediately and assistance sought by them.

All health & safety information shall be communicated in a simple & clear language easily understood by the local workforce.

For information to all, typical subjects that should be communicated are: -
Inside the company (Top to down)

- a. Quality Policy
- b. HSE Policy contents
- c. Environment Policy
- d. HSE Objectives
- e. Safety Cardinal Rules
- f. HSE Target – reached or missed
- g. Praises & Warnings to personnel for HSE Management
- h. Safety Walk Through Reports and safety defects / shortfalls (by management)
- i. HSE Audit results
- j. Revised Statutory Health & Safety provisions, if any
- k. H & S publicity
- l. Suggestions

Inside the Company (Bottom to up)

- a. Complaints
- b. Compliances on safety defects / shortfalls
- c. Suggestions
- d. Proposals for changes & improvements
- e. HSE Reports (including near-miss reports)

3.3.18 Confined Space Entry

The contractor shall generate a work permit (Format No. HSE -7) before entering a confined space. People, who are permitted to enter into confined space, must be medically examined. All necessary precautions mentioned therein shall be adhered to. An attendant shall be positioned outside a confined space for extending help during an emergency. Effective communication shall be maintained between personnel in confined space and outside by combination of visual/voice or portable radio. Compressed gas cylinders shall not be taken into confined space.

Entry Register for confined space to be maintained with the name and time of entry/exit.

3.3.19 Excavation

The Contractor shall obtain permission from competent authorities prior to excavation wherever required.

The Contractor shall locate the position of buried utilities (water line, cable route, etc.) by referring to project in consultation with Engineer in charge. The Contractor shall start digging manually to locate the exact position of buried utilities & thereafter use mechanical means.

The Contractor shall keep soil heaps at least 1.5 M away from edge or a distance equal to depth of pit (whichever is more)

All excavated pits greater than 10 Sq.M plan area and depth more than 1.5M shall have at least two access routes for ingress and egress. Also, additional access routes shall be provided such that distance between any two access routes shall not be more than 20M.

The Contractor shall maintain sufficient “angle of repose” during excavation – shall also provide slope or suitable bench as decided by EIL / Owner.

The Contractor shall arrange “battering” or “benching” wherever required for preventing collapse of edge of excavations.

The Contractor shall identify & arrange de-watering pump or well-point system to prevent earth collapse due to heavy rain / influx of underground water.

The Contractor shall arrange protective fencing/ hard barricading with warning signal around excavated pits, trenches, etc. along with minimum 2 (two) entries, exits / escape ladders.

The Contractor must avoid “underpinning” / under-cutting to prevent collapse of chunk of earth during excavation

The Contractor shall use “stoppers” to prevent over-run of vehicle wheels at the edge of excavated pits / trenches.

The Contractor shall arrange strengthening of “shoring” & “strutting” proactively to avoid collapse of earth / edges due to vehicular movement in close proximity of excavated areas / pits/ trenches, etc.

3.4

Tool Box Talks (TBT)

Contractor shall conduct daily TBT with workers prior to start of work and shall maintain proper record of the meeting. A record shall be maintained in a format suggested by Engineer in charge.

The Contractor shall conduct TBT before start of every morning or evening shift or night shift activities, for alerting the workers on specific hazards and their appropriate dos & don'ts. The Contractor shall provide sufficient rests to the site workmen and their foremen to avert fatigue & thereby

endangering their lives during the course of site works.

3.5 Training & Induction Programme

- a) Initial induction of workers into Construction oriented activities and appraising them about the methodology of works and how to carry-out safely and the same should not be inter mixed with Tool Box Talks or HSE Training. In this regard careful action should be made & maintained for imparting HSE induction to every individual, irrespective of his task/designation/level of employment, whereas, HSE Training should be imparted to specific person/group of people who are to carry-out that specific task more than once – for

example, Riggers must be trained for working at heights, welders must be trained for work in confined space, fitters/carpenters, mesons must be trained for work at heights, etc.

- b) Contractor shall conduct Safety induction programme on HSE for all his workers and maintain records. The Gate Pass shall be issued only to those workers who successfully qualify the Safety induction programme.
- c) The Contractor shall brief the visitors about the HSE precautions which are required to be taken before their proceeding to site and make necessary arrangements to issue appropriate PPEs like Aprons, hard hats, ear-plugs, goggles & safety shoes etc., to his visitors. The Contractor shall always maintain relevant acknowledgement from visitor on providing him brief information on HSE actions.
- d) Contractor shall ensure that all his personnel possess appropriate training to carry out the assigned job safely. The training should be imparted in a language understood by them and should specifically be trained about
- Potential hazards to which they may be exposed at their workplace
 - Measures available for prevention and elimination of these hazards The topics during training shall cover, at the minimum: -
 - Why safety should be considered during work - explanation
 - Education about hazards and precautions required
 - Employees' duties & responsibilities
 - Emergency and evacuation plan
 - HSE requirements during project activities
 - Fire fighting and First-Aid

- Use of PPEs
 - Occupational health issues – dos & don'ts
 - Local laws on intoxicating drinks, drugs, smoking in force
 - Common environmental subjects – lighting, ventilation, vibration, smoke/fumes etc.
- e) Records of the training shall be kept and submitted to Engineer in charge.

DETAILS OF HSE MANAGEMENT SYSTEM BY CONTRACTOR

On Award of Contract

The Contractor shall submit a comprehensive Health, Safety and Environmental Plan or programme for approval by Engineer in charge prior to start of work. The Contractor shall participate in the pre-start meeting with Engineer in charge to finalize HSE Plans which shall including the following:

- HSE policy & Objectives
- Job procedure to be followed by the Contractor for construction activities including handling of equipments, scaffolding, electric installations, etc. describing the risks involved, actions to be taken and methodology for monitoring each activity. Indicative list of procedures is enclosed as Annexure-H
- PMC/Owner review/audit requirement.
- Organization structure along with responsibility and authority, on HSE activities.
- Administrative & disciplinary steps involving implementation of HSE requirements
- Emergency evacuation plan/ procedures for site and labour camps
- Procedures for reporting & investigation of accidents and near misses.
- HSE Inspection
- HSE Training programme at project site
- HSE Awareness programme at project site
- Reference to Rules, Regulations and statutory requirements.
- HSE documentation viz reporting, analysis & record keeping.

SP: 53	Safety code for the use, Care and protection of hand operated tools.
IS: 838	Code of practice for safety & health requirements in electric and gas welding and cutting operations
IS: 1179	Eye & Face precautions during welding, equipment etc.
IS: 1860	Safety requirements for use, care and protection of abrasive grinding wheels. IS: 1989 (Pt -II) Leather safety boots and shoes
IS: 2925	Industrial Safety Helmets
IS: 3016	Code of practice for fire safety precautions in welding & cutting operation. IS: 3043 Code of practice for earthing
IS: 3764	Code of safety for excavation work
IS: 3786	Methods for computation of frequency and severity rates for industrial injuries and classification of industrial accidents
IS: 3696	Safety Code of scaffolds and ladders
IS: 4083	Recommendations on stacking and storage of construction materials and components at site
IS: 4770	Rubber gloves for electrical purposes
IS: 5121	Safety code for piling and other deep foundations
IS: 5216 (Pt-I)	Recommendations on Safety procedures and practices in electrical works IS: 5557 Industrial and Safety rubber lined boots
IS: 5983	Eye protectors
IS: 6519	Selection, care and repair of Safety footwear
IS: 6994 (Pt-I)	Industrial Safety Gloves (Leather & Cotton Gloves) IS: 7293 Safety Code for working with construction Machinery
IS: 8519	Guide for selection of industrial safety equipment for body protection IS: 9167 Ear protectors
IS: 11006	Flash back arrestor (Flame arrestor)
IS: 11016	General and safety requirements for machine tools and their operation IS: 11057 Specification for Industrial safety nets
IS: 11226	Leather safety footwear having direct moulded rubber sole
IS: 11972	Code of practice for safety precaution to be taken when entering a sewerage system
IS: 13367	Code of practice-safe use of cranes
IS: 13416	Recommendations for preventive measures against hazards at working place

B. INTERNATIONAL STANDARDS ON HSE

Safety Glasses : ANSI Z 87.1, ANSI ZZ 87.1, AS 1337, BS 2092,
BS 1542, BS 679, DIN 4646/

58311 Safety Shoes : ANSI Z 41.1, AS 2210, EN
345

Hand Gloves : BS 1651

Ear Muffs : BS 6344, ANSI S 31.9

Hard Hat : ANSI Z 89.1/89.2, AS 1808, BS 5240, DIN 4840

Goggles : ANSI Z 87.1

Face Shield : ANSI Z 89.1

Breathing Apparatus : BS 4667,

NIOSH Welding & Cutting :
ANSI Z49.1

Safe handling of compressed:P-1 (Compressed Gas Association Gases in cylinders 1235
Jefferson Davis
Highway,
Arlington VA 22202 -USA)

Full body harness : EN-

361 Lanyard : EN-
354

Karabiner : EN-362 and EN-12275

APPENDIX-B**DETAILS OF FIRST AID BOX**

SL. NO.	DESCRIPTION	QUANTITY
1.	Small size Roller Bandages, 1 Inch Wide (Finger Dressing small)	6 Pcs.
2.	Medium size Roller Bandages, 2 Inches Wide (Hand & Foot Dressing)	6 Pcs.
3.	Large size Roller Bandages, 4 Inches Wide (Body Dressing Large)	6 Pcs.
4.	Large size Burn Dressing (Burn Dressing Large)	4 Pkts.
5.	Cotton Wool (20 gms packing)	4 Pkts.
6.	Antiseptic Solution Dettol (100 ml.) or Savlon	1 Bottle
7.	Mercurochrome Solution (100 ml.) 2% in water	1 Bottle
8.	Ammonia Solution (20 ml.)	1 Bottle
9.	A Pair of Scissors	1 Piece
10.	Adhesive Plaster (1.25 cm X 5 m)	1 Spool
11.	Eye pads in Separate Sealed Pkt.	4 pcs.
12.	Tourniquet	1 No.
13.	Safety Pins	1 Dozen
14.	Tinc. Iodine/ Betadine (100 ml.)	1 Bottle
15.	Polythene Wash cup for washing eyes	1 No.
16.	Potassium Permanganate (20 gms.)	1 Pkt.
17.	Tinc. Benzoine (100 ml.)	1 Bottle
18.	Triangular Bandages	2 Nos.
19.	Band Aid Dressing	5 Pcs.
20.	Iodex/ Moov (25 gms.)	1 Bottle
21.	Tongue Depressor	1 No.
22.	Boric Acid Powder (20 gms.)	2 Pkt.
23.	Sodium Bicarbonate (20 gms.)	1 Pkt.
24.	Dressing Powder (Nebasulf) (10 gms.)	1 Bottle
25.	Medicinal Glass	1 No.
26.	Duster	1 No.
27.	Booklet (English& Local Language)	1 No. each
28.	Soap	1 No.

29.	Toothache Solution	1 No.
30.	Vicks (22 gms.)	1 Bottle
31.	Forceps	1 No.
32.	Snake –Bite Lancet	1No.
33.	Note Book	1 No.
34.	Splints	4 Nos.
35.	Lock	1 Piece
36.	Life Saving/Emergency/Over-the counter Drugs	As decided at site

Box size: Suitable size first aid box to be used for first aid items

Note : The medicines prescribed above are only indicative. Equivalent medicines can also be used.
A prescription, in this regard, shall be required from a qualified Physician.

TYPE OF FIRES VIS-À-VIS FIRE EXTINGUISHERS

Fire Extinguisher Fire ↓	→ Water	Foam	CO ₂	Dry Powder	Multi purpo se (ABC)
Originated from paper, clothes, wood	?	?	can control minor surface fires	can control minor surface fires	?
Inflammable liquids like alcohol, diesel, petrol, edible oils, bitumen	x	?	?	?	?
Originated from gases like LPG, CNG, H ₂	x	X	?	?	?
Electrical fires	x	X	?	?	?

LEGEND : ? : CAN BE USED

 x : NOT TO BE USED

Note: Fire extinguishing equipment must be checked atleast once a year and after every use by an authorized person. The equipment must have an inspection label on which the next inspection date is given. Type of extinguisher shall clearly be marked on it.

List of Statutory Acts & Rules Relating to HSE

- The Indian Explosives Act and Rules
- The Motor Vehicle Act and Central Motor Vehicle Rules
- The Factories Act and concerned Factory Rules
- The Petroleum Act and Petroleum Rules
- The Workmen Compensation Act
- The Gas Cylinder Rules and the Static & Mobile Pressure Vessels Rules
- The Indian Electricity Act and Rules
- The Indian Boiler Act and Regulations
- The Water (Prevention & Control & Pollution) Act
- The Water (Prevention & Control of Pollution) Cess Act
- The Mines & Minerals (Regulation & Development) Act
- The Air (Prevention & Control of Pollution) Act
- The Atomic Energy Act
- The Radiation Protection Rules
- The Indian Fisheries Act
- The Indian Forest Act
- The Wild Life (Protection) Act
- The Environment (Protection) Act and Rules
- The Hazardous Wastes (Management & Handling) Rules
- The Manufacturing, Storage & import of Hazardous Chemicals Rules
- The Public Liability Act
- The Building and Other Construction Workers (Regulation of Employment and Condition of Service) Act
- Other statutory acts Like EPF, ESIS, Minimum Wages Act.

LIST OF PROCEDURES (MINIMUM) TO BE FORMING PART OF HSE PLAN:-

- A. HSE Management Procedures:
- HSE Objectives & Performance
 - HSE Training and Competence (including Induction)
 - HSE Motivation & Award Scheme
 - HSE Audits
 - HSE Emergency Management
 - HSE Incidents Reporting and Management
 - First Aid & Management
 - Roles, Responsibility, accountabilities and Authorities
- B. Job procedures/Safe Operating procedures
- Setting Up Site & Signages
 - Working at Height
 - Confined Space Entry
 - Permit to Work
- Housekeeping
- Transportation of materials including Manual Handling
 - Earthmoving Operations & excavation
 - Scaffolding
 - Fire Prevention/Protection
 - Hazardous Substance handling & Storage
 - Personal Protective Equipment

ACCIDENT / INCIDENT REPORT

(To be submitted by Contractor after every Incident / Accident within 24 hours to EIL/ Owner)

Report No.:_____ **Date:**_____

Project site:_____ **Name of work:** _____

Contractor's name:_____ **Contractor's Job Engineer (name)** _____

Non-disabling injury (Non-LTA)	Hospitalized but resumed duty before end of 48 hrs	
Disabling injury (other LTA)	Hospitalized & failed to resume duty within next 48 hrs	
Fatal (LTA):	Death / Expiry	
First Aid case (non LTA)	Resume duty after first aid	

Name of the injured:_____ **Father's name of victim:** _____

Sub Contractor's Name:

Gate Pass No.:**Age:**_____ **Yrs. Victim's medical fitness exam. (Pre-empl.) date:-** __

Date & time of Accident / Incident: _____ **Names of**

Witnesses: (1_ (2)____ (3)_____ **Profession of victim:**

Bar bender		Carpenter		Meson	
Fitter		Helper		Gas cutter	
Grinder		Welder		Electrician	
Driver		Rigger		M/c. operator	
Engineer		Manager		Other/specify	

Qualification

No formal education		Non-Matriculate		Matriculate	
Graduate		Post- grad		Other/specify	

Job Experience

NIL		Less than 2 yrs		2-5 yrs	
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5-10 yrs		11-15 yrs		15 years and above	
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Location where the incident happened: _____

Activity / Works that were continuing during incident / accident: -

Excavation		Demolition		Concrete carrying	
Concrete pouring		Transportation of materials (manually)		Transportation of materials (mechanically)	
Work on or adjacent to water		Work at height (+2.0 mts)		Scaffold preparation	
Scaffold dismantling		Piling works		Welding	
Grinding		Gas-cutting		Pipe fit-ups & fabrication	
Structural fabrications		Machine works		Hydro-testing works	
Electrical works		Erection activities		Other/specify	

What exactly the victim was doing just before the incident / accident?

.....

.....

Nature of injury:

Bruise or Contusion		Abrasion (superficial wound)		Sprains or strains	
Cut or Laceration		Puncture or Open wound		Burn	
Inhalation of toxic or Poisonous fumes or gases		Absorption		Amputation	
Fracture		Other/specify			

Parts of body involved in incident / accident

Head		Face		Eyes	
Throat		Arm (above wrist)		Hand (including wrist)	
Fingers		Trunk (Abdomen / Back / Chest / Shoulder)		Throat	
Leg (above ankle)		Foot (incl. ankle)		Toes	
Multiple				Other/specify	

Accident type:

Struck against		Struck by		Fall from Elevation	
Fall on same level		caught in		caught under	
caught in between		Rubbed or abraded		Contact with (Electricity)	
Contact with (Temp./ extremes)		Contact with chemicals or oils		Vehicle accident	
Other/specify					

Medical Aid provided:- (indicate specific aids / treatment etc.)-

.....
.....

Actionstaken to prevent recurrence of similar incident / accident:

.....
.....
.....
.....
.....
.....

Intimation to local authorities (Dist. Collector / Local Police Station / ESI authority): Yes / No / NA. If yes, to whom

.....

Safety Officer
Manager (Signature and Name)
Stamp of Contractor

Site Head / Resident Construction
(Signature and Name)

SUPPLEMENTARY INCIDENT / ACCIDENT INVESTIGATION REPORT
TICK THE APPROPRIATE ONE AS APPLICABLE (furnish within 72 hours)

Supplementary to Incident / Accident Report No.:(Copy enclosed)

Report No.:_____ **Date:**_____

Project site:_____ **Name of work:** _____

Contractor's name:_____ **Contractor's Job Engineer (name)** _____

Non-disabling injury (Non- LTA)	Hospitalized but resumed duty before end of 48 hrs.	
Disabling injury (other LTA)	Hospitalized & failed to resume duty within next 48 hrs.	
Fatal (LTA):	Death / Expiry	
First Aid case (non LTA)	Resume duty after first aid	

Name of the injured:_____ **Father's name of victim:** _____ **Sub**

Contractor's Name:

Gate Pass No.:**Age:**_____ **Yrs. Victim's medical fitness exam. (Pre-empl.) date:-** _

Date & time of Accident / Incident: _____ **Names of**

Witnesses: (1)_____ (2)_____ (3)_____ **Profession of victim:**

Bar bender		Carpenter		Meson	
Fitter		Helper		Gas cutter	
Grinder		Welder		Electrician	
Driver		Rigger		M/c. operator	
Engineer		Manager		Other/specify	

Qualification

No formal education		Non-Matriculate		Matriculate	
Graduate		Post- grad		Other/specify	

Job Experience

NIL		Less than 2 yrs.		2-5 yrs.	
5-10 yrs.		11-15 yrs.		15 years and above	

Location where the incident happened: _____

Activity / Works that were continuing during incident / accident: -

Excavation		Demolition		Concrete carrying	
Concrete pouring		Transportation of materials (manually)		Transportation of materials (mechanically)	
Work on or adjacent to water		Work at height (+2.0 mts)		Scaffold preparation	
Scaffold dismantling		Piling works		Welding	
Grinding		Gas-cutting		Pipe fit-ups & fabrication	
Structural fabrications		Machine works		Hydro-testing works	
Electrical works		Erection activities		Other/specify	

What exactly the victim was doing just before the incident / accident?

.....

Particular of tools & tackles being used and condition of the same after incident/accident:

Description of Incident/Accident (How the incident was caused) :

.....

Nature of injury:

Bruise or Contusion		Abrasion (superficial wound)		Sprains or strains	
Cut or Laceration		Puncture or Open wound		Burn	
Inhalation of toxic or Poisonous fumes or gases		Absorption		Amputation	
Fracture		Other/specify			

Parts of body involved in incident / accident

Head		Face		Eyes	
Throat		Arm (above wrist)		Hand (including wrist)	
Fingers		Trunk (Abdomen / Back / Chest / Shoulder)		Throat	
Leg (above ankle)		Foot (incl. ankle)		Toes	
Multiple				Other/specify	

Accident type

Struck against		Struck by		Fall from Elevation	
Fall on same level		caught in		caught under	
caught in between		Rubbed or abraded		Contact with (Electricity)	
Contact with (Temp./ extremes)		Contact with chemicals or oils		Vehicle accident	
Other/specify					

Name & Designation of person who provided First-Aid to the victim: _____

Name & Telephone number of Hospital where the victim was treated _____

Mode of transport used for transporting victim – Ambulance / Private car / Tempo

/ Truck / Others How much time taken to shift the injured person to Hospital _____

In case of FATAL incident, indicate clearly the BOCW
Registration No. of the
victim/Company.....

...

Comments of Medical Practitioner, who treated / attended the victim/injured
(attached / described here) _____

What actions are taken for investigation of the incident, please indicate clearly –
(Video film / Photography / Measurements taken etc)

Immediate cause (Please tick the right applicable) –

Hazardous methods or procedures inadequately guarded		Poor housekeeping		Inadequate or improper PPE	
Environmental hazards (excess noise/ space constraint/ inadequate Ventilation		improper illumination/Moving on oval surface		Working on dangerous equipment	

Failure to secure		Horse-play		Failure to use PPE	
Inattention to surroundings		Improper use of hands & body-parts		By-passing safety devices	
Unsafe mixing or placement of tools & tackles		Bypassing standard procedures		Failure in communication	
Operating without authority		Improper use of equipment or tools & tackles		drug or alcoholic influence	
excessive haste		Others(specify)			

Basic cause

Over confidence		Impulsiveness		over-exertion	
Faulty judgement or poor understanding		Failing to keep attention constantly		Nervousness & Fear	
Fatigue		Defective vision		Ill health or sickness	
Slow reaction		Others (specify)			

Root cause

Inadequate Engg		Improper Design		Inadequate Planning & organization	
Inadequate knowledge		Inadequate skill		Inadequate training	
Inadequate supervision		Improper work procedure		Inadequate compliance with standard	
Substandard performance		Inadequate maintenance		Improper inspection	
Others (specify)					

Loss of man days and impact on site works, (if any) –

Remarks from Contractor's Safety Officer/ Engineer –

Was the victim performing relevant tasks for which he was engaged /employed?	Yes / No
Was the Supervisor present on work-site during the incident?	Yes /No
Have the causes of incident rightly identified?	Yes / No
Cause of Accident was_____	

Remedial measures recommended by **Safety Officer of Contractor** for avoiding similar incident in future

:

.....

.....

.....

.....

.....

.....

Intimation to local authorities (Dist. Collector / Local Police Station / ESI authority): Yes / No / NA. If yes, to whom

.....

Safety Officer
Manager (Signature and Name)

Site Head / Resident Construction
(Signature and Name)
Stamp of Contractor

NEAR MISS INCIDENT / DANGEROUS OCCURRENCE SUGGESTED PROFORMA
(to be submitted within 24 hours)

- Near Miss : **Human injury escaped & no damage to property, equipment or interruption to work.**
- **Dangerous Occurrence:** Damage to property, equipment or interruption of work, but not resulting in personal injury/ illness, e.g. Fire incident, collapse of structure, crane failure, etc.

Report No.: _____

Name of Site: _____

Date: _____

Name of work: _____

Contractor: _____

Incident reported by :

Date & Time of Incident :

Location :

Brief description of incident

Probable cause of incident

Suggested corrective action

Steps taken to avoid recurrence

Yes ☐

No ☐

Safety Officer
Manager (Signature and Name)
Stamp of Contractor

Site Head / Resident Construction
(Signature and Name)

FORMAT NO. : HSE-5 REV:-0
MONTHLY HEALTH, SAFETY & ENVIRONMENTAL (HSE) REPORT

(To be submitted by each Contractor)

Actual work start Date: _____ Project: _____ Name of the Contractor: _____ Name of Work : _____
 For the Month of: _____ Report No: _____

Status as on : _____ Job No : _____

(Contractor in consultation with EIL shall generate the reports through web based package (www3.eil.co.in/eilhse) only.

ITEM	UPTO PREVIOUS MONTH	THIS MONTH	CUMULATIVE
1) Average number of Staff & Workmen (average daily headcount, not man days)			
2) Total Man-hours worked			
3) Number of Induction programmes conducted			
4) Number of HSE meetings organized at site			
5) Number of HSE awareness programmes conducted at site			
6) Number of Tool Box Talks conducted			
7) Number of Lost Time Accidents (LTA)	Fatal		
	Other LTA		
8) Number of Loss Time Injuries (LTI)	Fatalities		
	Other LTI		
9) Number of Non-Loss Time Accidents			
10) Number of First Aid Cases			
11) Number of Near Miss Incidents			
12) No. of unsafe acts/ practices detected			
13) No. of disciplinary actions taken against staff/ workmen			
14) Man-days lost due to accidents			
15) LTA Free man-hours i.e. LTA free man-hours counted from the Last LTA (enter date:)			
16) Frequency Rate (No. of LTA per 2 lacs man-hours worked)			
17) Severity Rate (No. of man days lost per 2 lacs man-hours worked)			
18) Loss Time Injury Frequency (No. of LTI per 2 lacs man-hours worked)			
19) No. of activities for which HIRAC completed			
20) No. of incentives/ awards given			

21) No. of occasions on which penalty imposed by EIL/ Owner			
22) No. of Audits conducted			
23) No. of pending NCs in above Audits			
24) Compensation cases raised with Insurance			
25) Compensation cases resolved and paid to workmen			
26) No of Vehicular Accident cases			
27) No of fire/Explosion cases			
28) Whether workmen compensation policy taken		Yes	No
29) Whether workmen compensation policy is valid		Yes	No
30) Whether workmen registered under ESI Act, as applicable		Yes	No
31) Whether HIRAC Register prepared and updated		Yes	No
32) Whether Environment Aspect Impact Register prepared and updated		Yes	No
33) Whether Legal Register prepared and updated		Yes	No
Remarks, if any			

Date: Prepared by Safety Officer
(Signature and Name)

Approved by Site Head / Resident Construction Manager
(Signature and Name)

PERMIT FOR WORKING AT HEIGHTS (ABOVE 2.0 METER)

Permit No. Name of Main Contractor

Name of work executing agency / sub agency / vendor:

Date Exact Location of work

Nature of work Duration of work (from) (to)

Number of workers covered within this permit

(List enclosed with name & gate pass numbers.)

Sl. No.	Items / Subjects	Status of compliance (Yes / No)	
1	Work areas / Equipments inspected		
2	Work area cordoned off		
3	Adequate lighting is provided		
4	Precautions against public traffic taken		
5	Concerned persons in & around have been alerted & cautioned		
6	Hazards / risks involved in routine / non-routine task assessed and control measures have been implemented at specific task		
7	ELCB provided for electrical connection & found working		
8	Ladder safely attached / fixed		
9	Scaffoldings are checked and TAGs are found used correctly		
10	Working platforms are provided and are found sound /safe for use		
11	Safe access & egress arrangements (e.g. ladders, fall arresters, life-lines etc.) are satisfactorily incorporated		
12	a. Openings on platform / floors are effectively cordoned /covered		
	b. Safety Nets are provided wherever required		
13	Use of following safety gadgets by people working at area under this permit, is checked and found satisfactory - Safety helmet Safety harness (full body) with double lanyard Safety Shoes Safety gloves Safety goggles		
14	Housekeeping of work area found satisfactorily tidy / clean & clear		
15	Adequate measures have been taken for works being continued at the ground level, when simultaneous works are permitted overhead at that very location.		
16	Materials are not thrown from heights on to ground		
17	Medical examination of workers are made & found satisfactory		

7			
1 8	Responsible job engineer / supervisor found physically present at work spot for overall administration of work as well as safety of people.		

Above items have been checked & compliance has been found in place. Hence work is permitted to start / continue at the above-mentioned location. Work shall not start till identified lapses are rectified.

Additional Precautions, if any

Work Permit issued by
Contractor Engineer/RCM

Verification By
Contractor Safety Officer

AT THE END OF THE DAY/WORK:

All works at height are completed & workmen have returned safely from work location at (time)..... (date)

(Sig. Contractor Engineer)

CONFINED SPACE ENTRY PERMIT

Project site _____ Name of the work _____ Name _____ of
 Contractor _____ Exact location of work _____ Sr. No. _____ Date _____
 Nature of work _____

Safety Requirements POSITIVE ISOLATION OF THE VESSEL IS MANDATORY
(A) Has the equipment been ?

Y NR	Y NR	Y NR
<input type="checkbox"/> <input type="checkbox"/> Isolated from power/steam/air isolated from liquid or gases	<input type="checkbox"/> <input type="checkbox"/> water flushed &/or steamed	<input type="checkbox"/> <input type="checkbox"/> radiation sources removed
<input type="checkbox"/> <input type="checkbox"/> depressurized &/or drained	<input type="checkbox"/> <input type="checkbox"/> Man ways open & ventilated	<input type="checkbox"/> <input type="checkbox"/> proper lighting provided
<input type="checkbox"/> <input type="checkbox"/> blanked/ blinded/ disconnected	<input type="checkbox"/> <input type="checkbox"/> cont. inert gas flow arranged	<input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> <input type="checkbox"/> adequately cooled	<input type="checkbox"/> <input type="checkbox"/>

(B) Expected Residual Hazards

<input type="checkbox"/> <input type="checkbox"/> lack of O ₂	<input type="checkbox"/> <input type="checkbox"/> combustible gas/ liquid	<input type="checkbox"/> <input type="checkbox"/> H ₂ S / toxic gases
<input type="checkbox"/> <input type="checkbox"/> corrosive chemicals	<input type="checkbox"/> <input type="checkbox"/> pyrophoric iron / scales	<input type="checkbox"/> <input type="checkbox"/> electricity / static
<input type="checkbox"/> <input type="checkbox"/> heat/ steam / frost	<input type="checkbox"/> <input type="checkbox"/> high humidity	<input type="checkbox"/> <input type="checkbox"/> ionizing radiation
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

(C) Protection Measures

<input type="checkbox"/> <input type="checkbox"/> gloves	<input type="checkbox"/> <input type="checkbox"/> ear plug / muff	<input type="checkbox"/> <input type="checkbox"/> goggles / face shield
<input type="checkbox"/> <input type="checkbox"/> protective clothing	<input type="checkbox"/> <input type="checkbox"/> dust / gas / air line mask attendant with SCBA/air mask	<input type="checkbox"/> <input type="checkbox"/> personal gas alarm rescue equipment/team communication equipment
<input type="checkbox"/> <input type="checkbox"/> grounded air duct/blower /AC	<input type="checkbox"/> <input type="checkbox"/> safety harness & lifeline	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input type="checkbox"/> Fire fighting arrangements	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

Authorization / Renewal (It is safe to enter the confined space)

	No. of persons allowed	Name of persons allowed	Signature		Time		Signature
			Contractor's Supervisor	Contractor's Safety Officer	From	To	Workman

--	--	--	--	--	--	--	--

Permit Closure :

(A) Entry ☐ was closed ☐ stopped ☐ will continue on ...

(B) ☐ Site left in a safe condition ☐ Housekeeping done

(C) Multilock ☐ removed ☐ key transferred

☐ Ensured all men have come out ☐ Man-ways
barricadedRemarks, if any:

DEMOLISHING/DISMANTLING WORK PERMIT

Project : Sr. No. :
 Name of the work : Date :
 Name of contractor : Job No.:

Name of sub-contractor : No. of workers to be engaged:
(List enclosed with name & gate pass numbers.)

Line No./ Equipment No./ Structure to be dismantled :

Location details of dismantling/ demolition with sketch : (clearly indicate the area)

S. No.

The following items have been checked & compliance shall be ensured during currency of the permit:

Item description	Done	Not Applicable
Services like power, gas supply, water, etc. disconnected	<input type="checkbox"/>	<input type="checkbox"/>
Dismantling/ Demolishing method reviewed & approved	<input type="checkbox"/>	<input type="checkbox"/>
Usage of appropriate PPEs ensured	<input type="checkbox"/>	<input type="checkbox"/>
Precautions taken for neighboring	<input type="checkbox"/>	<input type="checkbox"/>
structures First-Aid arrangements made	<input type="checkbox"/>	<input type="checkbox"/>
Fire fighting arrangements ensured	<input type="checkbox"/>	<input type="checkbox"/>
Precautions taken for blasting	<input type="checkbox"/>	<input type="checkbox"/>

(Contractor's Supervisor)

(Contractor's Safety Officer)

Permission is granted.

(Permit issuing authority-Client)

Name :
 Date :

Completion report:

Dismantling/ Demolishing is completed on _____ Date at ____ Hrs.

Materials/ debris transported to identified location ☐

Tagging completed (as applicable) ☐

Services like power, gas supply, water, etc. ☐

restored (Permit issuing authority-Client)

CONTRACTOR's NAME

HOUSEKEEPING ASSESSMENT& COMPLIANCE

(Sheet 1 of 2)

Project : Sr. No. :
 Name of the work : Date :
 Name of contractor : Job No. :
 Name of contractor : Fortnightly

Sl. No.	Subjects of Review	Satisfactory/ Yes	Non satisfactory/ No	Remarks	Action
1.	Cleanliness at the Main entry / access of site				
2.	Ground condition / floor areas free from water- logging / oil spillage				
3.	Ground & elevated floors free from rubbish / wastes / accumulated debris / scraps.				
4.	Manholes / openings are covered / fenced				
5.	Trenches are barricaded / walkways are in place				
6.	Drains are cleaned / not choked / not occupied by dumped materials				
7.	Sufficient CAUTION boards / instructions displayed				
8.	Construction machinery are maintained & parked in orderly manner.				
9.	Movement of site people are not obstructed because of dumping / storing of construction materials				
10.	Access / egress to Electrical Distribution Boards / Panels clear from wires / cables / earth-strips etc.				
11.	Electrical panel rooms / sheds / MCC / Control rooms / Substations etc. are clean & tidy and not used for storing dress / clothes, tiffin-box or bicycles.				
12.	Passage behind Elec. panels are free for access				

13.	Fire extinguishers / fire-buckets are accessible without any difficulty.				
14.	Stair-steps, platforms & landings are clear & tidy				
15.	Sheds / rooms & work areas have got sufficient illumination as well as ventilation				
16.	Cables / Wires / welding leads are routed / hanged appropriately & are not creating unsafe condition.				
17.	Stacking / storing of insulation materials or their packing.				
18.	Removal or cleanliness of left-over sand, concrete, brick-bats, insulation-materials, excess earth, wastes etc.				
19.	Storing / stacking of sand, metal chips, re-bars, steel pipes, valves, fittings etc.				
20.	One escape route at ground & minimum two escape routes at elevation available,				

(Sheet 2 of 2)

Sl. No.	Subjects of Review	Satisfactory/ Yes	Non satisfactory/ No	Remarks	Action
21.	Captions / Posters / Slogans on various safety instructions are displayed legibly in local language				
22.	Cable trenches are water-free or regular arrangement for taking out accumulated water exists.				
23.	Windows of rooms / offices are regularly cleaned				
24.	Facilities for cycle sheds, drinking water, washing, rest-rooms etc. are maintained in tidy manner.				
25.	Toilet, Urinals, Canteen / kitchen / pantry etc. are maintained & free from obnoxious smell.				
26.	Construction tools / tackles are stored systematically - the items are tagged / tested / certified by competent third party.				
27.	Sufficient numbers of Dust-bins / Waste-bins found at site and are regularly emptied.				

Additional remarks, if any -

.....

Inspected by
Contractor Engineer

Verification By
Contractor Safety Officer

FORMAT NO. : HSE-13 REV 0

INSPECTION FOR SCAFFOLDING

Project : Sr. No. :
Name of the work : Date :
Name of contractor : Job No.:

(Sheet 1 of 2)

Sl. No	Description	Yes	No	N.A.	Action s taken
1	Whether work permit is obtained to take up work at height above 1.5 Mts?				
2	Whether atmospheric condition is "stormy" or "raining" and works at heights have been permitted?				
3	Whether steel pipes scaffoldings are used for units /off-site areas?				
4	Whether scaffolding has been erected on rigid/firm/leveled surfaces / ground? Whether "foot-seals" or "base-plates" are used beneath the up-rights (vertical steel pipes)				
5	Whether scaffold construction is as per IS specification with toe-board and hand-rails (top-rail as well as mid-rail)?				
6	Whether distance between two successive up-rights are less than 2.5 Mts (height of scaffold & load carrying capacity governs the distance between two uprights)				
7	Whether all uprights are extended at least 900 mm above the top most working platform (to enable fitting of handrails)?				
8	Whether vertical distance of two successive ledgers is satisfactory? (<i>varying between 1.3 Mts. To 2.1 Mts</i>)				
9	Whether the peripheral areas of working at height are cordoned-off? (for avoiding accident to people arising out of dropped / deflected materials)				
10	Whether platform is provided? Is it safely approachable?				
11	Whether end of scaffold platform / board are extended beyond transoms? (125mm to 150 mm)				
12	Whether CE / IS approved quality and worthy conditioned full-body safety harness (with double lanyard & karabiners) are used while working at heights?				
13	Whether life-line of safety harness is anchored to an independent secured support capable of withstanding load of a falling person?				
14	Whether the area around the scaffold is cordoned off to prohibit the entry of unauthorized person / vehicle?				
15	Whether clamps used are of good condition, of adequate strength and free from defects?				
16	Whether ladder is placed at secured and leveled surface?				
17	Whether water-pass and oil-spills are avoided around the				

	scaffold structure?				
18	Whether ladder is extended 1.5mts. above the landing point at height?				
19	Whether more than one access/egress provided to the scaffold?				
20	Whether ladder used are of adequate length and overlapping of short ladders avoided?				
21	Whether metallic ladders are placed much away from near-by electrical transmission line?				
22	Whether rungs of ladder are inspected and found in good order?				
23	Whether fall-arresters provided on both the access/egress routes?				
24	Whether diagonal (cross) bracings are provided at regular interval on the scaffold?				
25	Whether working platform on the scaffold has been made free from "jolt" or "gap"?				
26	Whether tools or materials are removed after completion of the day's job at heights?				
27	Whether a valid Permit for Work (PFW) is obtained before taking up work over asbestos or fragile roof?				
28	Whether sufficient precaution is taken while working on fragile roof?				

(Sheet 2 of 2)

Sl. No	Description	Yes	No	N. A	Actions taken
29	Whether provision is made to arrange duck ladder, crawling board for working on fragile roof?				
30	Whether scaffold has been inspected by qualified civil engineers prior to their use?				
31	Whether the scaffolding has been designed for the load to be borne by the same?				
32	Whether the erection and dismantling of the scaffolding is being done by trained persons and under adequate supervision?				
33	Whether safety net with proper working arrangement and life-line has been provided?				
34	Whether TAGS (Green for acceptable and Red for incomplete/unsafe scaffolds) are used on scaffolds?				
35	Whether sufficient illumination is provided in and around the scaffold and access?				
36	Whether emergency rescue / response arrangements are made in place				

Inspected by
Contractor Engineer

Verification By
Contractor Safety Officer

(sheet 1 of 2)

PERMIT FOR ERECTION / MODIFICATION & DISMANTLING OF SCAFFOLDING

Project : Sr. No. :
 Name of the work : Date :
 Name of contractor : Job No.:
 Nature of activities : Duration: From.....To.....

SL. No.	SUBJECTS / ITEMS	DONE	NOT DONE	REMARKS
1	Specific task of Erection / Modification / Dismantling of scaffolds, identified & TAGGED accordingly (before as well as after carrying-out jobs).			
2	People engaged in doing the job are identified & are certified by Job Engineer of Main Contractor as experienced / trained.			Names to be noted
3	Concerned persons are alerted by the Job Engineer of Main Contractor in connection with possible hazards & what the workmen MUST do / MUST not do.			
4	Verification by Job Engineer of Main Contractor made for confirming that all persons permitted to carry-out the jobs are making use of Helmet, Safety Shoes, Goggles, Gloves & Double lanyard safety harness and other relevant PPEs.			
5	Area of work is effectively cordoned-off / barricaded / illuminated.			
6	For taking-up / lowering down Scaffolding members / clamps / couplings etc. appropriate ropes / pulleys/ chains etc. have been arranged for use (not to throw any item) & the same have been verified as "fit for purpose".			
7	Items / members of scaffold, being lowered are removed from the area & stacked correctly.			
8	Ropes, chains, pulley blocks etc. being used for lifting or lowering scaffold items, are inspected by the Job Engineer & their certifications as well as physical conditions have been found O.K, before signing this PERMIT.			
9	Safety Net / Life-line / Fall Arresters etc. are arranged in position and Job Engineer has found working conditions favorable for activities to start.			
10	Scaffold erection or dismantling tasks are being supervised by Experienced Engineer / Competent person.			
11	Only competent & experienced people have been selected / engaged in Scaffolding erection, modification or dismantling tasks.			
12	Adequate & effective actions for traffic and movement of people around the cordoned-off area taken to avoid inadvertent incident			

1 3	Working platforms are protected with handrails & toe-boards.			
1 4	Access & Exit (for reach & escape) are safe for use by people.			
1 5	Tools, tackles to be used for above jobs are verified by job Engineers of Main contractor as genuinely good and tied-up at height (to prevent their fall).			
1 6	Site important Telephone Nos. are made known to everyone			
1 7	SOP (Safe Operating Procedure) for the specific task is made & followed too.			
1 8	Emergency vehicle has been arranged at work locations.			

- This permit for work shall be available at specific work location all the time.
- After completion of work, permit shall be returned to safety cell of main contractor, without fail.
- This Permit shall be issued maximum upto (Monday to Sunday).
- Additional Precautions, if any
-
ACCORD OF PERMISSION (to be ticked) - **YES** () / **NO** ()

Inspected by
Contractor Engineer

Verification By
Contractor Safety Officer]

FORMAT NO. : HSE-14 REV 0
(sheet 2 of 2)

Everyday Site working conditions & performance of workmen shall be assessed / checked by Contractor Site Engr. and Safety Officer shall verify the same.

	Name / Sign.	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Site Engr.								
Safety Off.								

PERMIT FOR EXCAVATION

(depth 2m and above)

Project :
Name of the work :
Name of contractor :
Job Description :
Size of excavation :

Sr. No. :
Date :
Job No.:
Location:

(Sheet 1 of 2)

SL. NO.	Description of Item	COMPLIANCE STATUS			Remarks
		Yes	No	Not applicable	
1)	Suitable and sufficient risk assessments and method statements has been carried to ensure that the work shall be undertaken in accordance with specification and standard.				
2)	Are plans/details of underground services available and the same has been reviewed?				
3)	Has survey done to locate the services/obstacles etc.				
4)	Has the live services (electrical, water line, air line, telephone line, etc.) has been disabled for carrying out the job.				
5)	Is adequate barriers/fences to protect the excavation are in place?				
6)	Is Adequate warning signs are in place?				
7)	Is Assessment of ground conditions done and remedial action (if any) taken?				
8)	Safe access / egress (e.g. ramp / steps / ladders etc.) provided for site workmen & supervisors.				
9)	Is the excavation work being undertaken in proximity of structure, etc.? If Yes, its effect is considered?				
10)	Availability of competent person for supervising the excavation work?				
11)	Adequate safe arrangement to prevent collapse of edges (e.g. shoring / strutting / benching / sloping etc.) made at site.				
12)	Hard barricades (at least 1.0M away from edge & for excavation near site access roads) with warning signs/caution boards are provided				
13)	Accumulation / passage-ways of water at periphery of excavation / trench stopped/restricted.				
14)	Is the equipment being used for excavation has been checked for adequacy and is in good working condition				

	having all the safety features?				
15)	Age & fitness of workmen ensured by medical test before engagement in job ?				
16)	Arrangement of Monitoring of possible oxygen deficiency or obnoxious gases done & action taken?				

PERMIT GRANTED - Yes / No
(List enclosed with name & gate pass numbers.)

Name & Signature of Site Engr.

Name & Signature of Area – In charge/RCM of

Contractor (Initiator)

Contractor (Issuing

authority) Verification by Contractor Safety Officer

NOTES: -

1. Slopes or benches for excavation beyond 2.0M depth shall be designed & approved by Contractor's site head.
2. Excavated earth to be kept at least 1.5M away from edges
3. Safety helmets, Safety shoes or gum-boots, gloves, goggles, Face shield, Safety Harness shall be essential PPEs.
4. Permit shall be made in **duplicate** and original shall be available at site of work.
5. Permit shall be issued for maximum **one week** only (Monday to Sunday)
6. After completion of works, permit shall be closed & preserved for record purpose

GRANT OF PERMIT AND EXTENSIONS

Sl. No.	Validity period From ___ To ___	Working Time From ___ To ___	Initiator (site Engr. of Main Contractor)	Issuing authority (Area In charge/RCM of Main Contractor)	Review by EIL / Owner (Remarks with date)
1.					
2.					
3.					
4.					
5.					
6.					
7.					

Additional safety instructions if any: - 1.

2.

3.

Inspection of Tower Crane**Name of Contractor:****Project:****Name of Work:****Job No:****Vehicle Identification/Registration No:****Date:**

Sr. No.	Description	Observation	Remarks & Suggestions
1	Serial number plate & SWL marking		
2	Valid TPI Certificate		
3	Valid Insurance		
4	Safe access and egress are provided to the crane operator.		
5	Front glass of Operator cabin		
6	Operator crane cabin is provided with a locking mechanism so as to prevent unauthorised entry.		
7	A safety bar is fitted across the operator's cabin window where there is likelihood of the operator falling through it.		
8	Manufacturer Operating Manual and Maintenance Manual are made available.		
9	An updated Operation and Maintenance log book is available in the operator cabin.		
10	All mounting bolts are in good condition.		
11	Load chart provided		
12	SLI available		
13	Crane hooks have got smooth surface and no dent		
14	Hook-latch / Dog-clamp in hook is effective		
15	Over hoist limit switch		
16	Double body earthing of Tower Crane		
17	Jib angle indicator is provided (For Luffing Jib Tower Crane).		
18	Emergency stop button, which will terminate the operation of the crane engine, is installed in the operator cabin and correctly identified.		
19	Effective braking mechanisms for Hoisting, Derricking, Slewing, Trolley Travelling maintained:		
20	Trolley Travelling limiter to prevent over-travelling of trolley is		

	functional.		
21	Limit switches to prevent over-derricking and over-lowering of jib (For Luffing Jib Tower Crane) is functional.		
22	Slewing limiter to restrict slewing of crane is functional.		
23	Over load Limiter to prevent overloading of crane is functional.		
24	Load Moment Limiter to prevent over-turning moment is functional.		
25	Anti-collision devices are tested to stop the tower crane's operation such that the crane-to-crane interference must be maintained at not less than 3 m.		
26	Condition of boom		
27	Counter weight placement and pins		
28	Winches, pulleys and wire ropes are in good working condition.		
29	Colour coding		
30	Leakage in hydraulic cylinder		
31	Fire Extinguisher		
32	Tower crane is adequately grounded or protected against lightning.		
33	Wind anemometer is installed and is in good working condition.		
34	Aviation lamp is functional (Reqd. for 30mt and above)		
35	Pre Medical Check-up& Periodic Medical check-up (every 6 months) including vision test for Operator		
36	Safety Induction for Operator		
37	Others		

Signature & Name of Operator:

Signature and name of Job Engineer

Signature & Name of Contractor's Safety Officer

FORMAT NO. : HSE-21 REV 0

Crane Inspection Checklist

Name of Contractor:

Project:

Name of Work:

Job No:

Vehicle Identification/Registration No:

Date:

Sr. No.	Description	Observation	Remarks & Suggestions
1	Crane hooks have got smooth surface and no dent		
2	Hook-latch / Dog-clamp in hook is effective		
3	Over hoist limit switch		
4	Over Load Indicator		
5	Over Boom limit switch		
6	Boom angle indicator		
7	Colour coding		
8	Condition of boom		
9	Condition of wire rope		
10	Rope drum / sheaves are in good working condition		
11	Swing break & lock		
12	Swing Alarm		
13	Over hoist break & lock		
14	Boom break & lock (For Telescopic Boom)		
15	Leakage in hydraulic cylinder		
16	Condition of Outrigger (For Tyre Mounted Crane)		
17	Outrigger fully extended Marking (For Tyre Mounted Crane)		
18	Condition of Tyre (For Tyre Mounted Crane)		
19	Wheel chokes are present and are used whenever required (For Tyre mounted)		
20	Battery & lamps		
2	Moving & rotating parts guarded		

1			
2 2	Load chart provided		
2 3	Reverse horn (For Tyre Mounted Crane)		
2 4	Body Condition of crane		
2 5	Front glass of Operator cabin		

26	Both side Mirror		
27	Number Plate (For Tyre Mounted Crane)		
28	Fire Extinguisher		
29	Horn		
30	Windshield and wipers		
31	Working of light & Indicator		
32	SLI		
33	Spark Arrestor(For Running Refinery/ Petrochemical/Chemical Plant)		
34	Foot-steps and hand-holds are in good working condition for exit /enter in to cabin		
35	TPI Certificate		
36	RC Document (For Tyre Mounted Crane)		
37	Fitness Certificate of Vehicle by authority		
38	Insurance		
39	PUC		
40	HMV License for Operator		
41	Pre Medical Check-up& Periodic Medical check- up (every 6 months) including vision test for Operator		
42	Safety Induction for Operator		
43	Others		

Signature & Name of Operator:

Signature & Name of Contractor's Concern Engineer

**Signature & Name of Contractor's
Safety Officer**

FORMAT NO. : HSE-22 REV 0
Hydra Crane Inspection Checklist

Name of Contractor:

Project:

Name of Work:

Job No:

Vehicle Identification/Registration No:

Date:

Sr. No.	Description	Observation	Remarks & Suggestions
1	Identification number of Hydra crane boldly scribed in front and rear end of machine		
2	Hydra Operator has got adequate document in support of his competency (i.e. HMT driving license, knowledge & training)		
3	Marking of SWL on hook position is clearly visible		
4	Test & examination of Hydra crane by statutory / competent authority is carried out & document is valid		
5	Colour Coding		
6	RC Document		
7	Fitness Certificate of Vehicle by authority		
8	Valid Insurance		
9	Valid PUC		
10	Pre Medical Check-up& Periodic Medical check-up (every 6 months) including vision test for Operator		
11	Safety Induction for Operator		
12	Crane hooks have got smooth surface and no dent		
13	Hook-latch / Dog-clamp in hook is effective		
14	Over hoist limit switch		
15	Over Load Indicator		
16	SLI		
17	Condition of boom		
18	Condition of wire rope		
19	Rope drum / sheaves are in good working condition		
20	Leakage in hydraulic cylinder		
21	Tyre condition		
22	Battery		

23	Moving & rotating parts guarded		
24	Break		
25	Parking Break		
26	Front horn		
27	Reverse horn		
28	Hydra cabin body and frame of machine is in good order		
29	Both side Mirror		
30	Fire Extinguisher		
31	Front glass pane of the Hydra operator's cabin is clean & clear (i.e. not cracked / damaged / broken)		
32	Windshield and wipers condition		
33	Working of front & back lights, turn Indicators, parking lights & fog lamps		
34	Spark Arrestor (For Running Refinery/ Petrochemical/ Chemical Plant)		
35	Wheel chokes are present and are used whenever required		
36	Foot-steps and hand-holds are in good working condition for exit /enter in to cabin		
37	Others		

Signature & Name of Operator

**Signature & Name of
Contractor's Concern
Engineer**

Signature & Name of Contractor's Safety Officer

FORMAT NO. : HSE-23 REV 0

Hydraulic Rig Inspection Checklist

Name of Contractor:

Project:

Name of Work:

Job No:

Vehicle Identification/Registration No:

Date:

Sr. No.	Description	Observation	Remarks & Suggestions
1	Control panel is clean & all buttons/switches are clearly visible (no paint over spray, etc.)		
2	All switch & mechanical guards are in good condition and properly installed		
3	All Safety Indicator lights work		
4	Drive controls function properly & accurately labelled (up, down, right, left, forward, back)		
5	Motion alarms are functional		
6	Safety decals are in place and readable		
7	Any defects such as cracked welds, fuel leaks, hydraulic leaks, damaged control cables or wire harness, etc.		
8	Braking devices are operating properly		
9	Winches, pulleys and wire ropes are in good working condition.		
10	Function of interlocks and limit switch		
11	The manufacturer's operations manual (in all languages of the operators)		
12	Oil level, Hydraulic Oil Level, Fuel Level, Coolant Level		
13	Battery Charge		
14	Outriggers in place or functioning. Associated alarms working		
15	Moving & rotating parts guarded		
16	Load chart provided		
17	Fire Extinguisher		
18	Spark Arrestor, if operated by using fuel (For Running Refinery/ Petrochemical/ Chemical Plant)		

19	Serial number plate		
20	SLI		
21	TPI Certificate		
22	Colour Coding		
23	Insurance		
24	Pre Medical Check-up & Periodic Medical check-up (every 6 months) including vision test for Operator		
25	Safety Induction for Operator		
26	Others		

Signature & Name of Operator:

Signature & Name of Contractor's Concern Engineer

Signature & Name of Contractor's Safety Officer

Boom Lift Inspection Checklist

Name of Contractor:

Project:

Name of Work:

Job No:

Vehicle Identification/Registration No:

Date:

Sr. No.	Description	Observation	Remarks & Suggestions
1	Operating and emergency controls are in proper working condition, EMO button or Emergency Stop Device		
2	Functional upper drive control interlock (i.e. foot pedal, spring lock, or two hand controls)		
3	Emergency Lowering function operates properly		
4	Lower operating controls successfully override the upper controls		
5	Both upper and lower controls are adequately protected from inadvertent operation.		
6	Control panel is clean & all buttons/switches are clearly visible (no paint over spray, etc.)		
7	All switch & mechanical guards are in good condition and properly installed		
8	All Safety Indicator lights work		
9	Drive controls function properly & accurately labelled (up, down, right, left, forward, back)		
10	Motion alarms are functional		
11	Safety decals are in place and readable		
12	Guardrails and anchor points are in place, and in good condition		
13	Work platform & extension slides are clean, dry, & clear of debris		
14	Work platform extension slides in and out freely with safety locking pins in place to lock setting on models with extension platforms.		
15	Any defects such as cracked welds, fuel leaks, hydraulic leaks, damaged control cables or wire harness, etc.		
16	Braking devices are operating properly		
17	The manufacturer's operations manual is stored on AWP (in all languages of the operators)		
18	Oil level, Hydraulic Oil Level, Fuel Level, Coolant Level		
19	Battery Charge		

20	Outriggers in place or functioning. Associated alarms working		
21	Tyres and wheels are in good condition, with adequate air pressure if pneumatic		
22	Wheel chokes are present and are used whenever required		
23	Moving & rotating parts guarded		
24	Load chart provided		
25	Fire Extinguisher		
26	Spark Arrestor, if operated by using fuel (For Running Refinery/ Petrochemical/ Chemical Plant)		
27	Serial number plate with Load capacity		
28	TPI Certificate		
29	Colour Coding		
30	Insurance		
31	Pre Medical Check-up& Periodic Medical check-up (every 6 months) including vision test for Operator		
32	Safety Induction for Operator		
33	Others		

Signature & Name of Operator:

Signature & Name of Contractor's Concern Engineer

Annexure- IX
(Special Conditions of Contract)
Additional Special Conditions of Contract

- (i) The guidelines of NGT, Environment department and local administration issued from time to time will be strictly followed by contractor without any extra cost impact to the Owner.
- (ii) The adjoining Residential localities have occupants and care shall be taken at all times to cause absolutely NO disturbance due to the execution of work. The damages to any or all occupant's / guest's properties / vehicles etc. shall be set right / good / repaired at Contractor's own expenses.
- (iii) The adjoining Residential / Commercial premises shall be appropriately barricaded so that Labor and Contractor staff does not enter these designated premises. Contractor shall depute adequate number of security personnel so as not to upset the Residents / Occupants privacy and peace due to Contractor's men & material movement/trespassing.
- (iv) The hours for execution of work will be restricted from 8.00 AM to 6.00 PM with a break from 1.00 PM to 2.00 PM
- (v) The Excavated Earth from the premises shall be preferably used as per directions of PMC / Engineer-in-Charge. The disposal of earth outside if any shall be approved by PMC / EIC.
- (vi) Following paragraph shall form part of Clause No. 2.2 of GCC: Notes (a):
Bank Solvency Certificate shall be required if the total value of works awarded to a contractor in multiple tenders/ contracts goes beyond INR 25 Crore. Further, the Contractor's net-worth capacity shall also be considered if Contractor is to be awarded multiple contracts.
- (vii) Material and Equipment Lying at site: Unitech's material lying at site, as mentioned in NITs, would be used by the successful bidder as per terms and conditions laid down in the NIT. More details on same can be obtained from the concerned PMC.

However, if the material lying at site belongs to erstwhile outgoing contractor, it is for the parties to agree and settle the terms and conditions for use thereof subject to the material being in good usable conditions as acceptable to Engineer-in-Charge.
- (viii) Following additional Payment Terms shall form part of Clause No. 23.1 of GCC:
(vi) Payment terms for MEP related works will be as under:

1. For items involving Erection only:

- (a) 90% on Erection of material at site & acceptance by Engineer -in - Charge.
- (b) 10% on testing, commissioning of the material and acceptance thereof by the Engineer- in - Charge.

2. For items involving Supply & Erection:

- (a) 60% on supply of material at site & acceptance by Engineer in

Charge.

(b) 30% on Erection of material at site and acceptance by Engineer in Charge.

(c) 10% on testing, commissioning of the material and acceptance thereof by the Engineer in Charge.

Note: Clause 3.0 of GCC will be applicable on above payment terms.

- (ix) The DLP of 05 years is as per provisions of RERA. Hence, it cannot be changed.
- (x) The Contractor shall ensure that the painting works is got executed from the approved applicator using approved brands of Asian Paints or Berger Paints or Nerolac or Dulux as the case may be and provide manufacture's Test certificate and counter corporate guarantee from respective management for a period of 6 years.
- (xi) Given a situation of temporary shortage of funds at any point in time for making payments against running bills to the contractors, additional comfort has been provided for the contractors. Subject to contractor's acceptance, Unitech may offer the unsold inventory of the project at the applicable current rate, discounted by 10% on that particular day.
- (xii) If required, the Contractor can use dried cakes from STP as manure within Unihomes Phase 1, Phase 2 & Phase 3 at Sector 117, NOIDA premises.
- (xiii) The area for Batching Plant or 10/7 Mixer, Hutments etc. shall be provided to the Contractor based on availability of land in the premises. PMC/EIC will decide based on the logistics presentation by the Bidder post award of work.
- (xiv) Unitech Limited and its subsidiary companies are the promoter and developer for the projects. Thus, Contract Agreement would be executed between the successful bidder and the project-owning company i.e. Unitech Limited or its subsidiary company. Please refer to Clause 23 of Section 3 (GCC) for any further information on the subject. Unitech, along with its subsidiary companies, is responsible for making the payments. Running Account Bills of the contractor will be checked and certified for payment by the PMCs (as the Engineer In-charge). EIL will audit the bills of contractors on quarterly basis.
- (xv) It is clarified that the documents, as mentioned in Bucket-4 of Annexure-IV of Instruction to Tenderers (ITT), being a part of checklist of documents, is to be submitted by the Successful bidder only. Please refer to the clauses as mentioned in Annexure-IV of ITT and clause 18 of the GCC.

It is not mandatory to submit these documents like (i) Project Execution Plan, (ii) Overall Project Schedule, (iii) Progress 'S' Curves, (iv) Manpower and Machinery Deployment, (v) Details of Soft wares' to be used etc. by the bidders at this stage.
- (xvi) Technical specifications of any missing items would be as per CPWD Specifications (Latest version) and same should be considered unless otherwise specifically mentioned in the Tender Document.

TECHNICAL SPECIFICATIONS

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SECTION 1
(RCC, CIVIL, FINISHING & LANDSCAPE WORKS)

1. GENERAL

The work in general shall be executed as per the description of the item, specifications attached and CPWD Specifications Vol. 1 and Vol. 2 (Latest version) including Subhead No. 0.0. Wherever any reference to any Indian Standard Specifications is made in the document relating to this contract, the same shall be inclusive of all amendments issued there to or revision thereof, if any, up to the date of receipt of tender. The rates quoted by the contractor shall be inclusive of all items, included in these specifications and special conditions and nothing extra shall be payable whatsoever unless otherwise specified.

However, wherever required by Engineer-in-Charge, the contractor shall submit a detailed methodology for execution of the specific work and shall get the same approved before the start of that specific work.

For the specialized works contractor shall engage specialized agencies with prior approval of Engineer-In-Charge.

Wherever it is mentioned "at all levels" in Schedule of Rates/ Technical Specifications for any item, the same shall be considered for "at all heights" irrespective of height of the structural element viz. Columns, Walls, Retaining walls etc. Contractor to quote his rates accordingly and nothing extra shall be paid on this account.

2. CARRIAGE OF MATERIALS

The carriage and stacking of materials shall be done as per Sub-head No-1.0 of CPWD Specifications Volume-1. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

3. EARTH WORK**3.1 General**

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head No -2.0 and other relevant BIS Codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge. The following shall not be measured separately for payments and allowance for the same shall be made by the contractor in the quoted rates:

- I. Setting out of work.
- II. Excavation for insertion of planking and strutting.
- III. Removal of slips or falls in excavation due to any reason whatsoever.
- IV. Forming steps/slopes in the sides of excavation and their removal.
- V. Forming ramps for vehicular movement during excavation and their removal.
- VI. Bailing out or pumping of Rainwater and Ground water from excavations.
- VII. Disposal of earth within the site plot boundaries.
- VIII. Additional lift in backfilling work.
- IX. Use of Chemicals for splitting of rocks.
- X. Keeping the excavated area clean from any deposition of water due to rain, sandstorm, flood, landslip etc.

- XI. Supporting nearby trees at edge of excavation area. Carefully cutting of roots falling in excavation area.

3.2 Measurements

- 3.2.1 Measurements shall be done as per the relevant CPWD specification/ IS codes. However, for 'HARD ROCK' and 'SOFT ROCK/DISINTEGRATED ROCK', following mode shall be followed for measurement.
- 3.2.2 Excavated materials from 'HARD ROCK' and 'SOFT ROCK/DISINTEGRATED ROCK' shall be stacked separately, measurement reduced by 50% to allow for voids to arrive at the quantity payable under 'hard rock' and 'soft rock' respectively.
- 3.2.3 The difference between the entire excavation (worked out from the levels) and such of the quantities payable under 'hard rock' and 'soft rock/disintegrated rock' shall be paid for as excavation in all kinds of soil.

3.3 Excavation in all types of Soils

Excavation and/or removal of any other material on the site shall be carried out accurately to the lines, levels and dimensions shown in the drawings or as ordered by the Engineer-in-charge, so as to allow proper and efficient concrete work and other work in clean and dry condition. The method of excavation shall be at the discretion of the Engineer-in-charge.

3.4 Material for Earthwork in Filling

- 3.4.1 Only soil considered suitable by the Engineer-in-charge shall be used for backfilling/filling unsuitable soil shall be disposed off, as directed by Engineer-in-charge.
- 3.4.2 The soil used for filling shall be free from boulders, lumps, tree roots, rubbish or any organic deleterious matter.
- 3.4.3 Soil having laboratory maximum dry density of less than 1.5 gms/cc shall not be used.
- 3.4.4 Care shall be taken to see that unsuitable waste material is disposed off in such a manner that there is no likelihood of its getting mixed with the material, proposed to be used, for filling.
- 3.4.5 Hard rock obtained from excavation shall be measured as per CPWD specifications Vol.1 and the hard rock so obtained shall be the Owners property. However, if the owner desires the contractor to take the possession of the excavated hard rock, recovery shall be made at unit prices mentioned in Schedule of Rates. The utilization/disposal of hard rock once possessed and removed from site by the contractor, shall be as per contractor's discretion. The contractor shall indemnify owner from all liabilities thereof towards any statutory, legal implications.

3.5 Pre – Construction Anti -Termite Treatment (ATT)

- 3.5.1 The work shall be carried out as per Volume 1 Sub-head-2.0 of CPWD specification (§ 2.28) and IS 6313 PART 2. The contractor shall be required to submit a methodology of execution of ATT work and get the same approved by Engineer-in-Charge before the starting of such work.

- 3.5.2 Contractor shall provide guarantee for Anti-Termite Treatment (ATT) for a minimum period of Ten years.

4. MORTARS

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head No 3 .0and other relevant BIS Codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-charge.

The cement used shall be Portland Pozzolana cement (fly ash based) conforming to IS 1489 (Part 1) and Sand conforming to Zone-II/III as per IS 383.

5. CONCRETE WORK & REINFORCED CEMENT CONCRETE WORK

5.1 General

All concrete included in the work shall comply with the General requirements of this section of the specification except where those requirements are modified by the provisions of later Clauses relating to specialized uses for concrete in which case the requirements of those Clauses shall take precedence. Apart from this specification, construction of Plain and Reinforced Cement Concrete works shall be in accordance with Vol. 1, Sub-head No – 4.0, Sub-head No – 5.0 and Subhead No. 26.0, Vol. 2 of CPWD Specifications, the Indian Standard Code of Practice for Plain and Reinforced Cement Concrete - IS: 456 and other relevant codes mentioned therein and as listed herein in Technical Specifications.

5.2 Materials

- 5.2.1 Portland Pozzolana Cement (PPC) confirming to IS 1489 Part 1, shall be used for all concrete works.
- 5.2.2 The responsibility of storing and stacking of all construction materials lies with the contractor.
- 5.2.3 Quarry/ Source of materials shall be inspected / approved by Engineer-in-Charge. Change of source, if proposed by the contractor, shall immediately be informed to and got approved by Engineer-in-Charge.

5.3 Water

- 5.3.1 Water for construction purpose shall confirm to IS:456. Contractor shall get the water tested from any approved laboratory before commencement of works at his own cost. Water shall be tested at every three months to ascertain the quality. In case, there is change in the source of water, the same shall be tested again to meet the requirements at any stage of construction as directed by the Engineer-in-charge.

5.4 Laying of Concrete

- 5.4.1 To ensure proper cover, preferably factory-made cover blocks / PVC Cover Blocks will be used to avoid displacement of bars in any direction.
- 5.4.2 The construction joints if unavoidable shall be provided in predetermined locations only as directed by Engineer-in-charge. Nothing extra shall be paid for providing shuttering as required or for applying a coat of neat cement slurry on the joints before re-commencing concrete work.

5.4.3 The contractor shall necessarily use the surface vibrator for compaction of concrete in floor slab, retaining walls, columns etc. For placement of concrete at various levels, Tower Crane of appropriate size, capacity and boom length or concrete pump shall necessarily be deployed by the contractor. However, mechanical hoist can be used by the contractor for lifting other construction materials.

5.5 Design Mix:

5.5.1 Design mix concrete shall be used for all RCC works. Fully automatic computerized batching plant of required capacity shall be installed by the contractor at a suitable location outside the boundary limit of the site, but as near as possible to the site or alternatively RMC as per approved design mix from approved RMC plant shall be used. If Batching Plant Location is allowed by Engineer-in-Charge within the premises, adequate and necessary precautions shall be taken by the Contractor as per Pollution Control Board norms.

5.5.2 The concrete mix design with and without admixture will be carried out by the contractor through approved laboratory/test house/institute and reviewed and approved by Engineer-in-Charge. Ready Mix concrete shall confirm to accepted/approved mix.

5.5.3 The Contractor shall submit the mix design report for approval of Engineer-in-Charge within 30 days from the date of issue of letter of commencement of the work. No concreting shall be done until the mix design is approved by Engineer-in-Charge.

5.5.4 The Design Mix shall be designed as per IS:10262 in an approved laboratory to produce the different grades of concrete having the required workability & characteristic strength not less than the grade designation. The target mean strength of the concrete mix shall be equal to the characteristic strength plus 1.65 times the standard deviation. The values of standard deviation correspond to the site control having proper storage of cement; weigh batching of all materials; controlled addition of water; regular checking of all materials, aggregate gradings and moisture content; and periodical checking of workability and strength. Where there is deviation from the above the values given in the table-8 (IS:456), strength shall be increased by 1 N/Sq.MM.

5.5.5 The cost of packaging, sealing, transportation, loading, unloading, cost of samples and the testing charges for mix design in all cases shall be borne by the contractor.

5.5.6 The various ingredients of mix design for laboratory test shall be sent to the laboratory/test house through the Engineer-in-Charge

5.5.7 The contractor shall make cubes of size 15 cm x 15 cm x 15 cm of trial mixes as per approved mix design at site laboratory for all grades of concrete in presence of the Engineer-in-Charge using same ingredients as adopted for design mix, prior to commencement of concreting and get them tested for strength in presence of Engineer-in-charge for 7 days and 28 days. For each design mix, a set of six cubes shall be prepared from each of the three consecutive batches three cubes from each set shall be tested at the age of 7 days and three cubes at the age of 28 days. The cubes shall be made, cured, transported and tested strictly in accordance with CPWD

specifications. The average strength of cubes at the age of 28 days shall exceed the specified target strength for which design mix has been approved.

- 5.5.8 For each change of source of quality/ characteristic properties of the ingredients from that approved & used in the concrete mix during the work, a fresh mix design shall be got done by the Contractor through approved Laboratory / Test House / Institute. Revised trial mix test shall be conducted at laboratory established at site and shall be submitted by the contractor as per the directions of the Engineer-in-Charge.
- 5.5.9 The item of design mix cement concrete shall be inclusive of all the ingredients including admixtures if required, labour, machinery and shuttering, T&P etc. (except reinforcement which will be measured & paid for separately) required for design mix concrete of required strength and workability and for transporting, placing, compacting and curing etc. The rate quoted by the agency shall be net & nothing extra shall be payable on account of change in quantities of concrete ingredients like aggregates and admixtures etc. as per the approved mix design.
- 5.5.10 As long as the quality of materials does not change, a mix design done earlier may be considered adequate for later work. However, in case the quality of materials changes or there is a break in the continuity of construction and the same work is sourced through a different RMC Vendor, the Engineer-in-Charge shall be furnished a new design mix for approval.

Irrespective of the grade of concrete required to be produced as per characteristic. The strength criteria, the minimum cement content and maximum free water cement ratio in the design concrete shall be strictly maintained as stipulated in Table 2A for the corresponding grade of concrete.

The contractor at his own cost; grade the aggregates and control the water/cement ratio, design & conduct the different trial mixes to required strength and workability & obtain Engineer-in-charge's approval for the same. Duly approved mixes in accordance with IS: 456 shall be used for construction. item of design mix cement concrete shall be inclusive of all the ingredients including admixtures if required, labour, machinery and shuttering, T&P etc. (except reinforcement which will be measured & paid for separately) required for design mix concrete of required strength and workability and for transporting, placing, compacting and curing etc. The rate quoted by the agency shall be net & nothing extra shall be payable on account of change in quantities of concrete ingredients like aggregates and admixtures etc. as per the approved mix design.

5.6 Use of admixture:

- 5.6.1 Approved admixture conforming to IS: 9103 shall be permitted to be used for obtaining required workability and for retarding/ accelerating setting time of concrete. The Chloride content in the admixture shall satisfy the requirement of BS 5075. The total amount of chloride content in the admixture mixed concrete shall satisfy the requirement of IS: 456-2000.

5.7 RMC (Ready Mix Concrete) Plant

- 5.7.1 The contractor may be allowed by Engineer-in-Charge to arrange Ready Mix Concrete

(RMC) from manufacturing plants. The RMC plant proposed to be engaged by the contractor shall fulfill the following minimum requirements:

- a) It shall be fully automatic and computerized with facility for providing printed advice showing ingredients of concrete carried by each mixer,
- b) It should be calibrated on a regular basis,
- c) It should have supplied RMC for projects of similar magnitude.
- d) RMC Plant shall have all facilities in line with IS 4925
- e) BIS 4926 (RA 2017) shall be applicable additionally.

5.7.2 For procurement of ready mix concrete from RMC plants, the contractor shall, within 15 days of award of the work, submit list of at least three RMC plant companies of repute along with details of such plants including details of transit mixer and pumps etc. to be deployed indicating name of owner/ company, its location, capacity, technical establishment, past experience and text of MOU/ Agreement proposed to be entered between purchaser (the contractor) and supplier (RMC Plant) to the Engineer-in-Charge. The Engineer-in-Charge shall give approval in writing (subject to drawl of MOU). The contractor shall draw the MOU with approved RMC plant owner/a company and submit to Engineer-in-Charge within a week of such approval. The contractor will not be allowed to purchase ready mixed concrete without completion of above stated formalities for use in this project. Availability of concrete round the clock throughout the project duration shall also be included in MOU.

5.7.3 Notwithstanding the approval granted by Engineer-in-Charge in aforesaid manner, the contractor shall be fully responsible for quality of concrete including input control, transportation and placement etc.

5.7.4 The Engineer-in-Charge will reserve the right to inspect at any such stage and reject the concrete if he is not satisfied about quality of product. The contractor should therefore draw MOU/ agreement with RMC owner/ company very carefully keeping all terms and conditions/ specifications forming a part of this tender document.

5.7.5 It shall be the responsibility of the contractor to ensure that all-necessary equipment manpower & facilities are made available to Engineer-in-Charge and/ or his authorized representative at RMC plant.

5.7.6 Ingredients, admixtures & water declared unfit for use in production of mix shall not be used. A batch mix found unfit for use shall not be loaded into the transit mixer for transportation.

5.7.7 The RMC produced concrete shall be accepted by Engineer-in-Charge at site after receipt of the same after fulfilling all the requirements of mix mentioned in the tender documents and the applicable relevant BIS Codes.

5.8 Quality Control of Ready-Mix Concrete

It shall be the responsibility of the contractor to ensure that the RMC producer provides all necessary testing equipment and take all necessary measures to ensure Quality control of ready – mixed concrete. In general, the required measures shall be:

5.8.1 Control of Purchased Material Quality:

RMC producer shall ensure that all the materials purchased and used in the production

of concrete conform to the stipulation of the relevant agreed standards with the materials supplier and the requirements of the products mix design and quality control procedures.

The materials shall be accomplished by visual checks, sampling and testing, certification and information/ data from material supplier. Necessary equipment for the testing of all material shall be provided and maintained in calibrated condition at the plant by the RMC producer.

5.8.2 Control of Material Storage

Adequate and effective storage arrangement shall be provided by RMC producer at RMC plant for prevention of contamination, reliable transfer and feed systems, drainage of aggregates, prevention of freezing or excessive solar heating of aggregate etc. Each truckload/ transit mixer dispatched to site shall carry computer printout of the ingredients of the concrete it is carrying. The printout shall be handed over to Engineer in-Charge or his representative at site before RMC is used in work.

5.8.3 Transfer and Weighing Equipment

RMC producer shall ensure that a documented calibration is in place. Proper calibration records shall be made available indicating date of next calibration due, corrective action taken etc. RMC producer shall ensure additional calibration checks whenever required by Engineer-in-Charge in writing to contractor. RMC producer shall also maintain a daily production record including details of cubes. Record shall also be maintained of the materials used for that day's production including water and admixtures. The accuracy of measuring equipment shall be as per manufacturer's recommendation/ relevant IS specifications.

5.8.4 Production of Concrete

The following precautions shall be taken during the production of RMC at the plant;

5.8.4.1 Weighing (correct reading of batch data and accurate weighing) - For each load written, printed or graphical records shall be made of the weights of the materials batched, the estimated slump, the total amount of water added to the load, the delivery ticket number for that load and the time of loading the concrete into the truck.

5.8.4.2 Visual observation of concrete during production and delivery during sampling and testing of fresh concrete assessment of uniformity, cohesion, workability, adjustment to water content: The workability of concrete shall be controlled on a continuous basis during production. The batch mix found unfit shall not be loaded into the truck for transportation. Necessary corrective action shall be taken in the production of mix as required for further batches.

5.8.4.3 Use of adequate equipment at the plant to measure surface moisture content of aggregates, particularly fine aggregate or the workability of the concrete, cube tests etc. shall also be ensured.

5.8.4.4 Making corresponding adjustment at the plant automatically or manually to batched quantities to allow for observed, measured or reported changes in materials or concrete qualities.

5.8.4.5 Sampling of concrete, testing, monitoring of results. Diagnosis and correction of faults

identified from observations/complaints. The RMC plant produced concrete shall be accepted by Engineer-in-Charge at site after receipt of the same after fulfilling all the requirements of mix mentioned in the tender documents.

- 5.8.4.6 Ready mix concrete shall be arranged in quantity as required at site of work. The ready mix concrete shall be supplied as per the pre-agreed schedule approved by Engineer-in-Charge.
- 5.8.4.7 If so required by the Engineer-in-Charge, the RMC producer shall provide separate storage space/ go down for storage of materials approved by Engineer-in-Charge for the design mix concrete.
- 5.8.4.8 Use of Fly ash/ mineral based admixtures in RMC shall not be permitted without prior approval of Engineer-in-Charge.
- 5.8.4.9 No addition of water or other ingredients shall be permitted in the RMC at site or during transit.
- 5.8.4.10 Concrete shall be placed by pump of suitable capacity or tower crane or boom placer and the contractor shall arrange sufficient length of pipe at site to place the concrete in the minimum required time. Nothing extra shall be paid for placing of concrete through concrete pump/ tower crane/boom placer.
- 5.8.4.11 Printed delivery tickets shall be produced with each truck load of RMC.
- 5.8.4.12 The representative of RMC supplier shall attend the site meeting as and when decided by the Engineer-in-Charge.
- 5.8.4.13 The contractor shall assess the quantity of RMC requirement at site well in advance and order accordingly to the RMC supplier. In case excess RMC is received at site, the Engineer-In-Charge shall not be under any obligation to get the extra quantity utilized and no payment for such RMC shall be made.
- 5.8.4.14 The contractor shall have to employ labour in shifts to ensure continuous casting of raft and other RCC members as directed by Engineer-In-Charge. No extra payment on this account shall be made.

5.9 RMC/ Site Batch Concrete

The Engineer-in-charge reserves the right to exercise control over the:

- 5.9.1 Ingredients, water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials, recordings of test results and declaring the materials fit or unfit for use in production of mix.
- 5.9.2 Calibration checks of the site batching plant / RMC plant.
- 5.9.3 Weight and quality check on the ingredients, water and admixtures added for batch mixing.

5.9.4 Time of mixing of concrete.

5.9.5 Testing of fresh concrete, recordings of results and declaring the mix fit or unfit for use. This will include continuous control on the workability during production and taking corrective action.

5.9.6 All required relevant records of RMC/ batching plant shall be made available to the Engineer-in-Charge or his authorized representative. Engineer-in-Charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of materials and production & transportation of concrete mix, which shall be binding on the contractor & the RMC plant.

5.9.7 PPC (conforming to IS-1489 Part 1) of brand/ make/ source as approved by Engineer-in-Charge shall only be used for production of concrete.

5.9.8 Ready mix / batching plant concrete shall be arranged in quantity as required at site of work. The ready-mix concrete shall be supplied as per the pre-agreed schedule approved by Engineer-in-Charge.

5.10 Form Work and scaffolding / Staging

5.10.1 For the execution of centering and shuttering, the contractor shall use chemical mould release agent of approved make shuttering oil as recommended by the manufacturer and nothing extra shall be paid on this account.

5.10.2 The shuttering system shall have sufficient strength to withstand the pressure resulting from placement and vibration of concrete and shall have sufficient rigidity to maintain specified tolerances.

5.10.3 Scheme of arrangement /Shop drawings/shuttering design for the shuttering system shall be submitted for approval of the Engineer-In-Charge sufficiently prior to commencement of work.

5.10.4 The design and engineering of the shuttering system shall be the responsibility of the contractor and Contractor shall use the latest technology available for staging and shuttering. For ensuring better Quality and Rate of Progress, the Contractor in consultation with Engineer-in-Charge can decide to opt for TLD / Mivan / DOKA / PERI etc. Formwork system without any additional cost implication or extra cost to Owner.

5.10.5 The selection of material shall be consistent with safety and quality required in the finished work. **Contractor to ensure availability of shuttering material required for 2 complete floors to ensure timely completion of major concrete works.**

5.10.6 The shuttering system shall be sufficiently tight to prevent loss of cement slurry from the concrete and shall be securely braced against lateral deflection.

5.11 Removal of Formwork (Striking Time)

5.11.1 Unless specified in the drawing, or directed by the Engineer-in-charge, the minimum intervals of time, which should be allowed between the placing of the concrete and the

striking of the formwork shall be as per relevant CPWD Specifications and other IS Standards.

5.12 Curing

- 5.12.1 Curing of concrete shall be done using potable water/curing compound of approved make.
- 5.12.2 Exposed concrete slabs: Potable water/Curing compound should be spray applied on to the newly placed concrete slab as soon as possible after it is free from visible surface water.
- 5.12.3 Curing period of concrete shall be in line with CPWD specifications / Guidelines or relevant Indian Standards.

5.13 Reinforcement steel works

- 5.13.1 Rate quoted for uncoated reinforcement steel shall include cost of supplying, de-coiling, straightening, cleaning, cutting, bending, placing, binding / using couplers / welding if required and providing necessary cover blocks of concrete.
- 5.13.2 No payment for cement wash shall be made separately and is deemed to be included in the quote rate for RCC works.

6. BRICK WORK

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head No – 6.0 and other relevant BIS Codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

7. STONE WORK

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head No – 7.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

8. CLADDING WORK

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head No – 8.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

9. WOOD WORK AND PVC WORK

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head No – 9.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

10. STEEL WORK

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head-10.0. However, where CPWD specifications and relevant IS standards are not available; the work shall be carried out with prior approval of Engineer-in-Charge. The rate quoted by the contractor shall be inclusive of the following clauses as well.

10.1 Fabrication Drawings

- 10.1.1 The contractor shall prepare fabrication and erection drawings for major works on the basis of design drawings supplied to him and submit the same in triplicate to the Engineer-in-charge for review. Engineer-in-charge shall review and comment, if any, on the same. Such review, if any, by the Engineer-in-charge, does not relieve the contractor of any of his required guarantees & responsibilities. The contractor shall however be responsible to fabricate the structural members strictly conforming to

specifications and reviewed drawings.

- 10.1.2 Review by Engineer-in-charge shall not absolve the contractor of his responsibility for the correctness of dimensions, adequacy of details and connections. One copy will be returned with or without comments to the contractor for necessary action.
- 10.1.3 The contractor shall supply two prints each of the final reviewed drawings to the Engineer-in-charge within a week since final review, at no extra cost for reference and records.
- 10.1.4 Fabrication and erection drawings shall be thoroughly checked and stamped "Approved for Construction" and signed by the responsible engineer of the Contractor and shall be released for construction by the contractor directly to his work site.
- 10.1.5 If any modification is made in the design drawing during the course of execution of the job, revised design drawings will be issued to the contractor. Further changes arising out of these shall be incorporated by the contractor in the fabrication drawings already prepared at no extra cost and the revised fabrication drawings shall be duly got reviewed as per the above Clauses.

10.2 Grouting:

- 10.2.1 Prior to positioning of structural steel columns/girders/trusses over the concrete pedestals/columns/brackets, all laitance & loose materials shall be removed by wire brushing & chipping. All pockets for anchor bolts shall also be similarly cleaned and any excess water removed. Structural steel members shall be erected thereafter aligned, maintaining the base plates/shoe plates at the levels shown in the drawings with necessary shims/pack plates/wedges.
- 10.2.2 After final alignment of structure, the forms shall be constructed all around and joints made watertight to prevent leakage. Grouting (under the base plates/shoe plates including grouting of sleeves & pockets) shall be done (wherever required) with Non-shrink grout having compressive strength (28 days) not less than 40 N/mm². Non-shrink grout shall be of free flow premix type and of approved quality and make. It shall be mixed with water in proportion as specified by the Manufacturer. The thickness of grout shall be as shown in the drawings but not less than 25 mm nor more than 40 mm in any case.
- 10.2.3 The grout mixture shall be poured continuously (without any interruption till completion) by grouting pumps from one side of the base plate and spread uniformly with flexible steel strips and rammed with rods, till the space is filled solidly and the grout mixture carried to the other side of the base plate.
- 10.2.4 Adequate arrangement shall be made for curing the grout as per the recommendation of Manufacturer.

10.3 Painting on structural steel Work

The work shall be carried out as per CPWD specifications, Vol. -2, chapter-13.0. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

11. FLOORING

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head No – 11.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

11.1 Carpet Flooring, Wooden Laminate Flooring, Raised/ False Flooring

The respective items of flooring as given in SOR shall be inclusive of protecting and keeping the flooring clean till handing over. No extra amount shall be payable to the contractor on this account.

Installation of these flooring shall be carried out as described in the respective item of Schedule of Rates (SOR) and as per manufacturer's specifications.

The warrantee of these flooring shall be as per manufacturer's specifications flooring like carpet flooring, wooden laminate flooring, raised/ false flooring

12. ROOFING

The work shall be carried out as per CPWD specifications, Vol. -1, Sub-head No – 12.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

13. FINISHING

The work shall be carried out as per CPWD specifications, Vol. -2, Sub-head No – 13.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

14. REPAIRS TO BUILDINGS

The work shall be carried out as per CPWD specifications, Vol. -2, Sub-head No – 14.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

15. DISMANTLING AND DEMOLISHING

The work shall be carried out as per CPWD specifications, Vol. -2, Sub-head No – 15.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

16. LANDSCAPE WORK

The work shall be carried out as per CPWD specifications, DSR AOR AND SPECIFICATIONS (Horticulture & Landscaping) 2020, CPWD Handbook of Horticulture 2020 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

17. ROADS

The work shall be carried out as per CPWD specifications, Vol. -2, Sub-head No – 16 from Pg. 293 to Pg. 318 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

18. DRAINAGE

The work shall be carried out as per CPWD specifications, Vol. -2, Sub-head No – 19 from Pg. 3 to Pg. 415 and other relevant BIS codes. However, where CPWD

specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

19. RAINWATER HARVESTING & TUBEWELLS

The work shall be carried out as per CPWD specifications, Vol. -2, Sub-head No – 23.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

20. NEW TECHNOLOGIES AND MATERIALS

The work shall be carried out as per CPWD specifications, Vol. -2, Sub-head No – 26.0 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

21. WATER PROOFING

The work shall be carried out as per CPWD specifications, Vol. -2, chapter-22. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

22. GRASS and VEGETATION CLEARING

Cleaning grass & removal of the rubbish up to a distance of 50m outside the periphery of the particular building area cleared will be undertaken as directed by the Engineer-in-charge and as specified in relevant CPWD / BIS Specification.

23. NOTE w.r.t. MATERIAL BRANDS / MAKES

The agency must quote the rates based on price of the brand/make stipulated in the item of works as described in Schedule of Rates, Specifications, and Drawings. The TPIA/PMC/Engineer-in-Charge reserves the right to select any of the brands indicated in the “list of approved makes/agencies” in case of delay in delivery of ordered make of item. The discretion of selection of any make / brand from within the Approved List rests with PMC/TPIA. The contractor shall not claim anything extra, if the TPIA/PMC changes the make / agencies / suppliers but within the list of approved makes.

SECTION 2
(PLUMBING, SANITARY, WATER SUPPLY, SEWERAGE AND DRAINAGE)

1. WATER SUPPLY

The work shall be carried out as per CPWD specifications, Vol. -2, chapter-18.0 and other relevant BIS Codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

1.1 Insulation of Hot Water Pipes

Thermal conductivity of material shall not exceed 0.038 W/m^oK at an average temperature of 40°C. The material should have a density in the range of 30 +/- 5 kgs/cu. m. The water vapour resistance factor should be higher than 5300. Insulation Material shall not contain harmful CFC"s. Insulation material have very low smoke index and non-existence of poisonous gases. The installation shall be as per manufacturer's specifications and direction of Engineer-in-Charge.

2. DRAINAGE

The work shall be carried out as per CPWD specifications, Vol. -2, chapter-19.0 and other relevant BIS Codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

2.1 PIPING SYSTEM

Soil, waste and vent pipes in shafts, ducts and in concealed areas, false ceilings etc. shall consist of uPVC SWR pipes on IS 13592.

uPVC SWR pipes require supports at close intervals. Pipes shall be aligned properly before fixing them on the suitable plugs with clamps. The Contractor shall adequately design all the brackets, saddles, anchors, clamps and hangers and be responsible for their structural sufficiency. Pipe supports shall be primer coated with rust preventive paint.

Rainwater down takes are (upvc type and IS 4985) separate and independent of the soil and waste system and will discharge into the underground storm water drainage system of the complex

2.2 Inspection Chambers

At every change of alignment, gradient or diameter of drain, there shall be an inspection chamber. Bends and junctions in the drain shall be grouped together in inspection chamber as far as possible. The maximum distance between chambers shall be 30m. Inspection chambers of different types and sizes as specified shall be constructed in the drainage line at such places and to such levels and dimensions as shown in the drawings or as directed by the Engineer-in-Charge. The size specified shall indicate the inside dimensions between brick faces of the inspection chamber.

Where the diameter of the drain is increased, the crown of the pipe shall be fixed at the same level and necessary slope given in the invert of the inspection chamber. In exceptional cases and where unavoidable, the crown of the branch drainage may be fixed at a lower level but in such cases the peak flow level of the two drainage shall be kept the same.

Drainage of unequal sectional area shall not be jointed at the same invert in an inspection chamber. The invert of the smaller drainage at its junction with main shall be at least 2/3 the diameter of the main above the invert of the main. The branch drainage shall deliver drainage in the inspection chamber in the direction of main flow and the junction must be made with care so that flow in main is not impeded..

The installation of the chambers and related accessories shall be carried out as per relevant approved drawings, description of the relevant SOR item, manufacturer's specifications and direction of Engineer-in-Charge. Contractor shall submit Installation procedure to Engineer-In-Charge for approval before installation.

3. MOCK UP and WORK METHODOLOGY

The Contractor shall install all pipes, Fixtures, clamps and accessories and fixing devices in mock-up shaft and room so constructed as directed by PMC / Engineer-in-Charge without any extra cost. The materials used in the mock-up may be reused in the works if found undamaged post approval from Engineer-in-charge.

Any tiles or finished surfaces or floors damaged by the Contractor while doing his work shall be made good with new tiles or other finishing material. No payment shall be admissible for such repairs. The Project Manager may, at his discretion get the damaged work repaired by other agencies and debit the cost of such repairs to the Contractor.

PIPE CLAMPS AND SUPPORTS

All pipes shall be adequately supported from ceiling or walls by Structural clamps/ supports fabricated from M.S. Structural e.g. Rods, Channels, Angles and Flats. All clamps/ supports shall be painted with one coat of red lead and two coats of black Enamel paint.

The Contractor shall fix the clamps and supports with the help of the anchor fasteners. Anchor fastener shall be fixed to walls and ceilings by drilling holes with Electrical drill in an approved manner as recommended by the manufacturer of the fasteners..

UNIONS

Contractor shall provide adequate number of unions on all pipes to enable dismantling later. Unions shall be provided near each Gunmetal Valve, Stop Cocks, or Check Valves and on straight runs as necessary at appropriate locations as required and/or directed by Engineer-in-Charge.

GUNMETAL VALVES

Valves 65mm dia and below shall be heavy Gunmetal Full way Valves or Ball valves conforming to I.S. 778-1971 of 20 Kg/cm² class. Valves shall be tested at manufacturer's works and the same stamped on it.

All valves shall be approved by the engineer-in-charge before they are allowed to be used on work. However the final responsibility of the quality of material lies with the contractor.

cPVC PIPES

The cPVC Pipes to be used for Potable water. (cPVC) pipes, having thermal stability for hot & cold water supply, including all cPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step cPVC solvent cement.

Handling guidelines

Pipes should be kept on an even surface while storing. They should be properly supported and should not be stacked for heights more than 1.5 meters for longer duration.

Jointing**Jointing Instructions**

The following procedure may be adopted while jointing the Pipes : -

Selfit Pipes

- a) Cut the Pipes as square as possible and ensure fitment of Pipes with socket of fitting is correct. Total length of insertion of sockets to be marked from the Pipe.
- b) The Pipe and the socket should be clean and dry. Dust, Oil, water, grease etc. should be wiped out with dry cloth or cleaner from the surfaces to be coated with Solvent Cement.
- c) Roughen the outside of Pipe and inside of Socket using sand Paper up to the entry mark. Stir adhesive i.e. Solvent Cement thoroughly.

d) Apply thick coat of Solvent Cement using a flat clean brush evenly on the inside of the socket mouth for full length of insertion and then outside of the Pipe end up to the marked line.

e) After application of Solvent Cement, insert the Pipe within one minute in to the Socket. Hold the Joint for few seconds and ensure that the Pipe does not come out of the fittings. Wipe off extra cement and allow it to dry for at least 24 Hours. The PVC Pipe with joint is ready for use.

Consumption of Solvent Cement

The Contractor shall report No. of joints which can / will be made per litre of Solvent chemical.

Ring-fit Pipes

a) Clean the inside of Socket. Remove all traces of mud, dirt, grease, gravel and also clean sealing ring.

b) Form the EPDM ring into heart shape by pinching a portion of ring inside. Insert it into the socket and release to seat in to the groove.

c) Mark the insertion depth on spigot portion of the pipe. Clean and apply lubricant to insertion depth before pushing in to the Socket. Ensure that no sand or dirt adheres to the lubricated surface of the Pipe.

d) Push the Spigot into the Socket until it reaches the depth of entry mark, taking care not to over insert. This can be done manually. Make sure that the insertion of Spigot end inside the socket should be at correct angle. The Pipe and Joint are ready for use.

e) In case of large diameter Pipes if crow bar does not give sufficient leverage, use of jointing jack may be helpful.

Pracautions:-

1. uPVC Pipes and Fittings should not be cleaned by Solvent Cement.
2. For large diameter and Higher class Pipes (6 kgf/cm² & above), use heavy duty Solvent cement.
3. uPVC pipes and fittings to be used of same Brand and Manufacturer.

VIBRATION ELIMINATORS

Provide on all suction and delivery lines double flanged reinforced neoprene flexible pipe connectors. Connectors should be suitable for a working pressure of each pump. Length of the connector shall be as per manufacturers details.

VALVE CHAMBERS

Contractor shall provide suitable brick masonry chambers in cement mortar 1:5 (1 cement: 5 coarse sand) on cement concrete foundations 150 mm thick 1:5:10 mix (1 cement: 5 fine sand: 10 graded stone aggregate 40 mm nominal size) 12 mm thick cement plaster inside and outside finished with a floating coat of neat cement inside with cast iron surface box as approved or as specified in Schedule of Quantities and in drawings including excavation, back filling complete.

TESTING

All pipes, fittings and valves shall be tested by hydrostatic pressure of min. 1.5 times, the working pressure and subject to minimum of 15 kg/cm² in any case whichever is higher or with the consent of Engineer-in-Charge.

Pressure shall be maintained for a period of at least two hours without appreciable drop in the pressure after fixing at site. A test register shall be maintained and all entries shall be signed and dated by Contractor(s) and Engineer.

In addition to the sectional testing carried out during the construction, Contractor shall test the entire installation after connections to the pool or pumping system or mains. He shall rectify all leakages, and shall replace all defective materials in the system. Any damage done due to carelessness, open or burst pipes or failure of fittings, to the building, furniture and Fixtures shall be made good during the defects liability period

without any extra cost.

After completion of the water supply system, Contractor shall test each valve by closing and opening it a number of times to observe if it is working efficiently. Valves which do not effectively operate shall be replaced by new ones at no extra cost and the same shall be tested as above.

MEASUREMENT

Pipes

Pipes shall be measured per linear meter and shall be inclusive of all fittings e.g. couplings, tees, bends / elbows, unions, and flanges. Deduction for valves shall be made.

Valves & Fittings

Puddle flanged gunmetal valves, cast iron valves, air and scour valves and all other similar items mentioned in the schedule of quantities shall be measured by number and shall include all items mentioned in the specifications.

Swimming Pool pumps sump pumps shall be measured by sets / or numbers as specified in bill of quantities and shall include all items as given in the bill of quantities.

Motor control panel and level controllers shall be measured by numbers.

Pipes for suction and delivery header and mains shall be measured per linear metre along the centre line of the pipe and shall be inclusive of all fittings.

Cable trays and cables shall be measured per linear meter.

Structural clamps including hangers shall be measured by weight calculated from sections used. No separate payment shall be admissible for bolts, anchor bolts, rawl plugs etc.

No separate payment shall be made for making connections of the existing service lines to the pumps. Vibration eliminator pads are included in the scope of this work.

SHOP DRAWINGS & SPECIFICATIONS

The Contractor shall submit to the Consultant/ client two copies of Shop Drawings for swimming pool works as an Advance Copy to the Engineer-in-Charge for approval before start of work. Subsequent to the approval of the shop drawings, the Contractor shall submit six copies of Shop Drawings for execution to the Engineer-in-Charge. Also the Contractor shall submit four copies of the Technical Specifications and Catalogues.

Shop drawings shall be submitted for the following conditions:

- (a) Structural supports/hanging/laying and jointing details for all types of pipes as required.
- (b) Plumbing layout plans as required and for any changes in the layout of Architectural drawings.

The Contractor can only commence the work after the approval of above documents by PMC/Engineer-in-Charge..

Section 3
ROAD WORK SPECIFICATIONS

Road Technical Specifications**A General**

The work shall be carried out as per CPWD specifications, Vol. 2, SH. No. 16 Road Work from Pg. 293 to 318 and other latest relevant BIS & MORTH codes. However, where CPWD & other latest specifications are not available, the work shall be carried out with prior approval of Engineer-in-Charge.

B. Location

The proposed “Unihomes Phase 1, Phase 2 & Phase 3” site is located at Sector 117, NOIDA, U.P..

C. BIS and other applicable Codes

1 Latest updated applicable code shall be followed.

1.1 Bituminous Roads: All relevant latest codes including but not limited to the following:

IS164: RA 2020, IS73: RA 2018, IS8887:2018, IS/ISO 15662: RA 2019, IRC:SP:105:2019, IRC:112:2011, IRC 37:2018, IRC:109:2015 etc..

1,2 Concrete Roads: All relevant latest codes including but not limited to the following:

IS5817: RA 2019, IS1944: RA 2018, IS7740: RA 2022 etc.

Section 4
LANDSCAPE PLANTING SPECIFICATIONS

Soft Landscape Technical Specifications**A General**

The work shall be carried out as per CPWD specifications, DSR AOR AND SPECIFICATIONS (Horticulture & Landscaping) 2020, CPWD Handbook of Horticulture 2020 and other relevant BIS codes. However, where CPWD specifications are not available, the work shall be carried out with prior approval of PMC/Engineer-in-Charge.

B. Scope of Work

- (i) The Contractor will provide landscape planting in the areas shown in the Drawings with plants in a healthy and vigorous growing condition. All works indicated in the Drawings by notes will be provided, whether or not specifically mentioned in this Landscape Planting Contract Specification / Documents. Any item not specified nor specifically shown in the Drawings, but are normally required to conform to such intent, are considered part of the work. PMC reserves the right to make field adjustment and reasonable substitution to ensure proper implementation of landscape concept in relation to field condition.
- (ii) The Contractor will submit a list of Plants and expected date of delivery to PMC for approval upon award of Contract. The Contractor will locate, purchase and transport plant materials specified herein to project nursery for pre-growing and thereafter, to project site for installation. Substitution of plant materials is not permitted unless authorized in writing by PMC Sangam / EIC.
- (iii) The Plant materials identified as specimen, field grown, field stock and instant will be subjected to inspection and rejection by PMC at place of growth and after its delivery to site for conformance with the specification as stated in Schedule of Works. All plant materials not conforming to specification will be rejected and removed off site immediately.
- (iv) The contractor will supply seasonal flowering plants as per directions of PMC/EIC, sow them at proper time, arrange composed manure, insecticide, pesticide, take care of their birth and proper growth such that the flowers bloom at right time in healthy plants and maintained throughout the season. The contractors shall ensure that seasonal flowers / flowering shrubs are suitably taken care of such that the premise is always colourful irrespective of change of season.
- (v) The Contractor can use dried cakes from STP as manure.
- (vi) The Tractors/choppers/power lawn mowers along with drivers, watering pipe, and other tools and equipment will be provided by the contractor including those required for dressing of the field work in the Uniworld City, Mohali premises and removal of unwanted dry leaves or any other material in the premises. The rates quoted by the contractor are inclusive of operation and maintenance of tractor, choppers and other power driven equipment like lawn mowers, sprinklers etc. Tractor has to be arranged minimum once a month for desired time period,
- (vii) The Scope of work shall cover the maintenance of entire premises having lawns, shrubs, trees, hedges, creepers, canna beds, bulb beds, foliage beds, rose beds, flower beds, preparation of new beds and replacement of dead plants by the same varieties by buying and stocking the saplings etc. complete. The maintenance shall be provided by watering, weeding, manuring, mowing, thinning, pruning, spraying, pot polishing etc. by trained Supervisors and Malis alike as specified or as directed by the PMC/EIC.
- (viii) The interval for spraying insecticide, applying fertiliser/manure etc. will be as per site conditions and requirements and as directed by PMC/EIC.
- (ix) The following yardstick should be followed for maintenance of Horticulture works:
 - (a) Minimum one mali for 2.50 acre garden area for open space and road berm etc.,
 - (b) Minimum one mali for 1.5 acres of lawn area other than open spaces and road berm etc.,
 - (c) Minimum one mali for 500 nos. of trees/plants/tree avenues,
 - (d) Minimum one mali for 200 mt. hedge clipping per day,
 - (e) Minimum one mali for 100 nos. of flower/rose beds and lawn,
 - (f) Minimum one machine man for 8 to 10 acres of lawn for lawn mowing,
 - (g) Minimum one mali for 2500 to 3000 potted plants maintenance,
 - (h) Minimum 6 malis and one supervisor for two acres of Nursery maintenance,
 - (i) Minimum one supervisor for 10-12 man for supervision and maintenance of hedge, lawn and trees etc.

B 1 GENERAL**1.1 Introduction**

The purpose of this Landscape Planting Specification is to ensure the acquisition and installation of healthy plant materials of the highest quality in the quantity desired specifically for this project.

Material Quantities:

The Contractor will provide sufficient quantities for materials listed needed to complete the work as indicated on the Drawings.

Quantities for Unit Price:

Unit price reflects quantities the PMC has established for the work. Unit price for these quantities will remain as the Contract unit rate for that material.

1.2 Scope of Work

The Contractor will provide landscape planting in the areas shown in the Drawings with plants in a healthy and vigorous growing condition. All works indicated in the Drawings by notes will be provided, whether or not specifically mentioned in this Landscape Planting Specification. Any item not specified nor specifically shown in the Drawings, but are normally required to conform to such intent, are considered part of the work. PMC reserves the right to make field adjustment and reasonable substitution to ensure proper implementation of landscape concept in relation to field condition.

Works under this Section includes, but is not limited to the following:

Plant acquisition/Project nursery/Installation of plant materials/Erosion control/Clearing and grubbing existing materials/Supply of good quality topsoil for soil mix preparation and backfilling/Weed control/Fine grading and mounding/Planting operation/Supply of decorative pots/ Supply of other landscape materials/Landscape maintenance/Potted plants maintenance/Warranty/Submission of as-built drawings

Plant Acquisition:

The Contractor will submit a list of materials and expected date of delivery to PMC for approval **two (2) months** upon award of Contract.

The Contractor will locate, purchase and transport plant materials specified herein to project nursery for pre-growing and thereafter, to project site for installation.

Substitution:

If any plant specified is not obtainable, The Contractor will submit a **Substitution Request** to PMC within **two (2) months** of award of Contract. This request may

present either a different size of the same species or a similar alternative species with proposed adjustment to Contract price for each.

Substitution of plant materials is not permitted unless authorized in writing by PMC.

Quality Assurance:

Two (2) months after award of Contract, The Contractor will submit a request for inspection and documentation to PMC on plant material delivered to project nursery.

Plant materials identified as specimen, field grown, field stock and instant will be subjected to inspection and rejection by PMC at place of growth and after its delivery to site for conformance with the specification as stated in Schedule of Works. All plant materials not conforming to specification will be rejected and removed off site immediately.

Plant materials that are installed on site found to be:

dead or dying and not in a vigorous thriving condition; improperly installed; and/or

infested with pests and/or showing signs of disease

will be replaced immediately with a healthy, vigorous thriving plant of the same species and size as originally planted.

Delivery & Storage:

The Contractor will protect plants in transit and after delivery to project site. Plants in broken containers or with broken branches or injured trunks will be rejected. The Contractor will remove rejected materials from project site immediately.

1.3 Job Conditions

Construction Schedule:

After award of Contract, The Contractor will provide PMC with written projected planting schedule, noting the estimated completion date, number of working days required and any special coordination requirements.

The Contractor will work closely with Contractor to coordinate work in accordance with overall master program.

Meet on Site:

Prior to commencing work, The Contractor will meet PMC and all other concerned parties on site to review work under this Section. The Contractor will request this meeting in writing one week prior to the desired meeting time.

Underground Utilities & Obstructions:

The Contractor will ascertain exact location of all underground utilities and other obstructions that may affect work. Any services and obstruction encountered will be reported to PMC immediately. The Contractor will protect and maintain all services during execution of work and repair all damages to any known services or other underground obstruction at their own expense, whether accidental or otherwise. The Contractor will report all damages to any services to PMC immediately.

Hoisting:

The Contractor will provide necessary hoisting facilities for their tools, equipment and materials up to landscape deck level and remove such facilities after completion and make good all works disturbed. The Contractor will note and make allowance for such facilities in Contract price.

Access:

The Contractor will make provision for access facilities to work area and remove such facilities on completion of works. The Contractor will note that there may be such difficulties and make allowance for such in Contract price.

Protection:

The Contractor will provide necessary safeguard and exercise caution against injury or defacement of existing site. Contractor will prevent vehicles of any kind from passing over sidewalk, curbs, etc., unless adequate protection is provided.

Protection:

The Contractor is responsible for any damages resulting from landscape planting operation. Sub- Contractor will repair all damages and return the area to its previous condition at his own expense.

Clean Up:

The Contractor will keep all areas of work clean, neat and orderly at all times during the Contract period and clean all planting areas at the end of each working day.

Samples & Tests:

PMC reserves the right to take and evaluate samples of materials for conformity to specification at any time. The Contractor will furnish samples upon request by PMC. Rejected materials will be removed immediately from project site at The Contractor's own expense.

1.4 Maintenance Period (Defects Liability Period)

General:

The Contractor will maintain all plants and planting areas in optimum growing condition and appearance at all times.

Duration:

Maintenance will continue for **Sixty (60) months** upon receiving **Completion Certificate** from PMC. Care of plant materials during installation is not considered part of Maintenance Period.

Plant Materials:

Expense of replacement of plant materials during Maintenance Period will be borne by Contractor.

Pre-Maintenance Inspection and Final Inspection:

At completion of all landscape planting operation and prior to beginning of Maintenance Period, a Pre-Maintenance Inspection will be held. At the completion of Maintenance Period, a Final Maintenance Inspection will be held.

The Contractor will request all inspections by PMC in writing **five (5) working days**

prior to completion of work in order that a mutually agreeable time for inspection may be arranged.

Employer, TPIA, PMC, Contractor and The Contractor or their representatives, will be present at the inspection.

At time of inspection, The Contractor will have all landscape areas under Contract neatly cultivated, raked and kept free of weeds, dead leaves and debris. All stakes, guys and plant basins will be in good order. Lawn will be cut neatly and all clippings removed.

If all or certain portion of works are not acceptable under terms and intent of the Drawings and Specification, Maintenance Period for unacceptable works and any related item will be extended at no cost to Employer. All rectification works must be accepted by PMC.

Pre-Maintenance Inspection:

If, after Pre-Maintenance Inspection, PMC is of the opinion that all works have been performed in accordance with the Drawings, specification as stated in the Schedule of Works and as per authorized field adjustment, PMC will issue Contractor the **Completion Certificate** certifying work completion and beginning of Maintenance Period of **Sixty (60) months**.

If, after Pre-Maintenance Inspection, PMC is of opinion that not all works are acceptable, a Landscape Defect List will be issued to The Contractor. Rectification works on Landscape Defect List must be completed within **seven**

(7) days, unless otherwise stated, and PMC will set final inspection date to verify completion of rectification works.

On final inspection, if it is the opinion of PMC that rectification works carried out are still not acceptable, PMC will issue a direction to Contractor to make good the defects. If within **seven (7) days** after receipt of written notice from PMC requiring Contractor to comply with said direction and if he fails to do so, PMC may employ other contractors to give effect to the direction. Any extra cost of doing so will be deducted upon the certificate of PMC called '**Certificate of Cost of Other Contractor's Work**' from any monies otherwise due or recover the same from The Contractor. Upon completion, PMC will issue Contractor **Completion Certificate** certifying work completion and beginning of Maintenance Period of **Sixty (60) months**.

Final Maintenance Inspection:

At the end of **Sixty (60) months** Maintenance Period, a Final Maintenance Inspection will be held. If after Final Maintenance Inspection, PMC is of the opinion that all works have been performed satisfactory and in accordance with the maintenance schedule as stated in the Schedule of Works, PMC will issue Contractor a **Maintenance Certificate**.

If, after Final Maintenance Inspection, PMC is of opinion that not all works are acceptable, a Landscape Defect List will be issued to The Contractor. Rectification works on Landscape Defect List must be completed within **seven (7) days**, unless otherwise stated, and PMC will set final inspection date to verify completed works.

On final inspection, if it is the opinion of PMC that rectification works carried out are still not acceptable, PMC will issue a direction to Contractor to make good the defects. If within **seven (7) days** after receipt of written notice from PMC requiring Contractor to comply with the said direction and he fails to do so, PMC may employ other contractors to give effect to the direction. Any extra cost of doing so shall be deducted upon the certificate of PMC called '**Certificate of Cost of Other Contractor's Work**' from any monies otherwise due or recover the same from The Contractor. Upon completion, PMC will issue Contractor a **Maintenance Certificate**.

1.5 Warranty

Plant Materials:

Plant materials furnished or relocated will be warranted for a period of **Sixty (60) months** from beginning of Maintenance Period against improper installation, pest infestation and/or diseased conditions that may appear. PMC will determine non-conformance of plant material and notify The Contractor. All works will be

completed within **seven (7) working days** from date of Pre-Maintenance Inspection.

Upon receipt of written notice from PMC of rejection of any plant material during maintenance period due to death, diseased or unacceptable/defective growth pattern, plant material will be promptly replaced with same species as originally planted. The Contractor will make replacement of plant material of similar size as if normal growth had occurred since original planting.

Replacement will be subjected to all requirements as stated in this Landscape Planting Specification.

When plants are replaced, The Contractor will advise PMC, in writing, of necessary establishment maintenance which must be performed. If this information is not provided, Contractor will be liable for total cost of replacement should replaced plant die.

If works are not completed as stipulated, PMC will issue a direction to Contractor to complete the works as stipulated. If within **seven (7) days** after receipt of the written notice from PMC requiring Contractor to comply with the said direction and he fails to do so, PMC may employ other Contractors to give effect to the direction. Any extra cost of doing so will be deducted upon Certificate of PMC called '**Certificate of Cost of Other Contractor's Work**' from any monies otherwise due or recover the same from The Contractor.

The Contractor will not be held liable for loss of plant materials after issuance of **Completion Certificate** due to vandalism and/or act of God.

Special Warranty:

All plant materials furnished will be warranted to species, hybrid, flower colour and/or variety specified for a period of **Sixty (60) months** from beginning of Defects Liability Period.

Prior to the completion of Contract, any warranted plant material prove to be of different species, hybrid, flower colour and/or variety not initially determinable, it must be replaced with a new plant of originally specified species, hybrid, flower colour and/or variety. The new plant will be of equal in size to that of the incorrect plant at time of its removal. The new plant will meet the quality standard, be subjected to warranty, and installed according to Specification to approval of PMC.

Liability:

Liability under warranty period will include repair of damages to Employer's, Contractor's and/or other The Contractor's property caused by failure of work

performed under this Section. All provisions of this Section apply to work performed to satisfy the requirement of this warranty.

1.6 Applicable Codes & Standards

Latest Amended CPWD and all other applicable BIS Codes as available during currency of Contract.

1.7 As Built Drawings

The Contractor shall provide PMC, as required with full and complete as-built drawings in respect of Contract works.

All drawings shall be submitted in ample time for checking and for re-submission of any amendments desired, so as not to jeopardize in any way the time for completion of Contract or Sub-

Contract works.

The Contractor shall submit a set of paper prints for PMC's verification. After verification process, The Contractor shall submit as-built drawings as follows:

1 set paper print for Employer

1 set paper print for TPIA

1 set soft copy (AutoCAD & pdf) on Pen Drive to PMC

B 2 PRODUCTS**2.1 Growing Media**

Good Quality Topsoil: Loamy topsoil used for soil mix will be loose and friable. It must be free from stones, noxious seeds, weeds, roots and subsoil in any quantity.

In Ground Soil Mix: The Contractor will provide sufficient quantities for materials listed needed to complete work as indicated on the Drawings.

Light Weight Soil Mix: Weight bulk density of light weight soil mix will not exceed 990 kg/m^3 or about 10 KN/m^2 .

Soil mix for plantings on-structure will consist of the following:

50% good quality, loamy topsoil 25% peat moss

15% river sand (no salt content)

10% charcoal chips 10 mm to 15 mm size

5 kg/ 10 m^3 NPK 15-15-15 "Osmocote" Slow Release Fertiliser or approved equivalent

Soil mix for Potted Plants will consist of the following:

80% peat moss

20% river sand (no salt content)

5 kg/ 10 m^3 of NPK 15-15-15 "Osmocote" Slow Release Fertiliser or approved equivalent

Soil mix for Lawn will consist of the following:

20% peat moss

80% river sand (no salt content)

5 kg/ 10 m^3 NPK 15-15-15 "Osmocote" Slow Release Fertilizer or approved equivalent

Note: The following shall apply for In Ground Soil Mix, Light Weight Soil Mix and Soil Mix for Lawn:

Any other organic matter and additives to balance the pH value of soil mix will not be more than 15 percent of the total soil mix.

The Contractor will submit a soil analysis test result to determine value of pH, texture, as well as content of nitrogen, phosphorus, potassium, magnesium and percentage of organic matter in soil mix. All costs of these tests will be borne by The Contractor.

The Contractor will mix the soil mix composition thoroughly before placing it into planting pit.

Excavated silty clay site materials must not be used in backfilling. All excavated materials will be disposed at location as indicated by Contractor.

Soil mix must be free from heavy clay or coarse sand, stones, lumps, other vegetation, roots, sticks and other foreign material.

Soil mix will be of the same composition and structure throughout.

Soil mix will not be delivered, handled or placed in a muddy condition.

2.2 Top Dressing Media

Top dressing media for turf and lawn will consist of the following:

Axonopus compressus (Turf) 70% good quality, loamy topsoil 30% washed sand
5 kg/m³ NPK 15-15-15 fertilizer

Zoysia japonicus/Cynodon dactylon (Lawn) 100% washed sand
5 kg/m³ of NPK 15-15-15 fertilizer

2.3 Fertilizer:

NPK 15:15:15 "Osmocote" Slow Release Fertilizer or approved equivalent as recommended by soil analysis, will be uniformed in composition, free-flowing and suitable for application with approved equipment. It will be delivered to project site in un-opened containers, each fully labelled and conforming to applicable fertilizer laws. It will bear the name or mark of the manufacturer.

2.4 Compost

Organic sources such as rice hulls, finely ground bark, saw dust or other organic waste products are acceptable if composted through a thermophilic stage, to a mesophilic stabilization phase and with approval of the soil physical testing laboratory. Compost will be aged for at least one (1) year. Sub- Contractor will provide a 25 mm layer over all trees and palms after installation of plant material and during Maintenance Period.

2.5 Mulch

Dried oil palm seed kernel, tree bark or approved equivalent. The Contractor will provide 25 mm layer over all trees, palms and shrub beds after installation of plant material and during Maintenance Period.

2.6 Plant Material

Quantities:

Organic sources such as rice hulls, finely ground bark, saw dust or other organic waste products are acceptable if composted through a thermophilic stage, to a mesophilic stabilization phase and with the approval of the soil physical testing laboratory. Compost will be aged for at least one (1) year. The Contractor will provide 25 mm layer over all trees and palms after the installation of plant material and during Maintenance Period.

The Contractor will provide sufficient quantities of plant materials needed to complete work as shown in the Drawings for **Lump Sum** price items.

Quantities indicated in Drawings for unit price items are approximate only and are provided for convenience of The Contractor. Schedule of Works will have precedence over Drawings.

Nomenclature:

Names of plants will conform to scientific names generally accepted in the local nursery trade and as

interpreted by PMC. In all cases of dispute, the decision of PMC will be final.

Condition:

All trees, palms, bamboo, shrubs, groundcovers, vines and lawn will have a normal habit of growth and are healthy, vigorous and free from insect and / or disease infestation.

Minimum acceptable size of all trees after pruning, with branches in normal positions, will conform to measurement specified in Schedule of Works unless stated otherwise.

Caliper measurement will be taken at a point on trunk 1.0 meter above natural ground.

Trunk height measurement will be taken from collar of trunk to first branch (trees) or to first frond (palms).

Clear trunk height measurement will be taken from collar of trunk to the woody tissues of palm.

Plants that meet specified measurement, but do not possess a normal configuration or balance of height and spread will be rejected. All trees supplied will be branched as specified in Schedule of Works. Natural form of trees must be kept after pollarding. **De-topped trees will be rejected.** All trees supplied must have terminal shoots.

Plant materials larger in size than specified may be used, but are subjected to approval of PMC. Use of larger plant materials will make no change in contract price. Height will not be substituted for balanced form.

All plant materials will have a root ball of sufficient size to support plant recovery from transplanting. Any plant materials delivered to Project Nursery Centre with small or inadequate root balls will be rejected. In all cases, decision of PMC will be final.

All trees and palms will be transplanted from growing site and planted at project site by mechanical crane. Manual labour will not be used.

Trees and palms will be straight and have uniformed shape without damage. Trees with abrasions on bark, sunscalds, disfiguring knots or damaged limbs over 25 mm diameter which have not been pruned will be rejected.

All specimen trees must have a minimum crown spread of not less than half the size of the overall height.

All instant trees must have minimum four main branching from trunk with a minimum crown spread of not less than half the size of overall height.

All trees must not be pollarded when delivered and planted on site. Only light pruning is allowed and must be approved by PMC.

All *Axonopus compressus* used must meet National Park Boards requirements stipulated for Roadside Planting in terms of purity and variety for Singapore based projects.

All turf areas will be closed turfed, unless otherwise stated as spot turfing.

All stolons must be healthy and free from other foreign grasses.

All stolons except Bermuda hybrid will be minimum 100 mm length. Bermuda hybrid stolons will be minimum 50 mm length.

2.7 Water

Contractor will provide water for period during the installation of landscape works. The Contractor will be responsible for providing hoses, water trucks and necessary equipment to ensure that adequate water is available for plants from Contractor's water points.

2.8 Water Polymer Crystals

'Stockosorb' or approved equivalent

Synthetic: Modified cross linked acrylic amide with copolymer bond.

Appearance: Free flowing white crystals

Appearance with H₂O: Expanded insoluble gel

Bulk Density: +600 - 700 g/l (not compacted)

Particle Size: 1.0 mm to 1.5 mm

H₂O Absorbing Capabilities: Several hundred times it's respective weight dependent upon quality of

H₂O (1 g WaterWorks for about 500 g water)

Expandability with H₂O: Up to 100 times the original size

Soil Permanence: Minimum 5 years, average 8 years

Approved Application Rate: Incorporate into planting pits

Palms: 60 gm/m³ of soil mix

Trees: 40 gm/m³ of soil mix

The Contractor, Main Contractor and Employer or their representative will be present during installation.

2.9 Header or Soil Separation or Lawn Edging

Contract price will include all miscellaneous materials required for approved installation procedure.

'Cobra Hi-test' lawn edging or approved equivalent will be used with anchor stakes and 90 degree corner connectors wherever required.

2.10 Staking Material

The Contractor will allow for the following list of materials in rates for Other Items as stated in Schedule of Works.

Hose and Wire Ties: 12 mm diameter rubber hose with #12 gauge galvanized iron wire.

Guy Wire: #12 gauge galvanized iron for large trees and palms. #9 gauge galvanized iron for field grown trees.

Rebar: #4 gauge, 600 mm minimum length for large potted trees and palms. #7 gauge, 1.0 m minimum length for larger trees and palms.

Marker: Plastic surveyor tape. Bright yellow, orange or pink colour, minimum 500 mm long. Use same colour throughout project.

Wood Tree Stakes: 50 mm x 50 mm x 2.5 m rough construction grade hardwood with no paint or stain. Bamboo may be used for substitution. Only new and clean timber will be used.

Tree Collar Protector: Made of a UPVC pipe of length 200 mm, diameter of 75 mm and thickness of 2 mm with a slit cut along the full length of tube.

2.11 Tree Root Barriers

Contract price will include all miscellaneous materials required for approved installation procedure.

450 mm (18") Deep Root Tree Root Barrier or approved equivalent.

Shape and Size: 610 mm long x 610 mm deep panel

Product Thickness: Minimum 2.03 mm

Type of Plastic: Polyethylene (Recyclable)

Strength Fabrication: Injection moulded Process

Rib Type: Moulded 90° Ribs

Assembly Method: Self-Locking Joiner

Ultraviolet: Added and by colour

Inhibitors: 25% Recycled Plastic

Additional Features: Dual purpose use, Adjustable sizing, Safety rounded edging, Double top edge

and Anti-lifting Ground Locks

Coil Length: 100 m

Coil Weight: 43 kg/m

Pipe stiffness: 5% deflection a minimum force of 400 KN/m, 10% deflection a minimum force of 300

KN per metre deflection per metre length of pipe.

Fabric Filter: Geotextile

B 3 EXECUTION**3.1 Clearing**

The Contractor will clear all planting areas of existing vegetation not specified to remain and all other debris and foreign materials considered a hindrance to planting operation and/or unsightly in appearance.

The Contractor will maintain previously established grades and swales.

Contractor will be responsible for cleaning planting areas and turning them over to The Contractor suitable for planting. It is to the responsibility of The Contractor to ensure that this is done. Failing this, clean-up will be the responsibility of The Contractor.

The Contractor will arrange to have all cleared materials moved to areas on site as directed by Contractor.

3.2 Pre-Planting Weed Control

The Contractor will remove all visible weeds before any soil placement.

Application of herbicide or weedicide is not allowed unless specifically instructed by PMC.

3.3 Excavation

Rates for excavation are to include:

Excavating around piles / foundation etc. and confined areas and getting out.

Excavating by hand and/or mechanical means any materials encountered including below water table and for grubbing up roots of trees.

Excavating around and removing boulders.

Trimming, levelling and compacting bottoms & keeping sides plumb.

Multiple handling of excavated material and all transport and handling charges at loading and unloading ends.

Planking and strutting including any left-in, special strutting and shoring (unless specifically designed by Contractor's Engineers and approved by PMC Sangam) and/or any other means of withholding sides of excavation and ensuring safety of adjoining structures.

Additional excavation and backfilling for formwork, planking and strutting or to batter the face of excavation in lieu.

Clearing any falls of earth into excavations.

Complying with PMC's instructions issued from time to time to ensure safety of excavations and adjoining structures.

Removal of excavated materials off-site to approved dumping areas.

3.4 In Ground Soil Mix

The Contractor will provide the following minimum depth of in-ground soil mix for:

Tree and palm planting pit: 1.5 m x 1.5 m x 2.0 m minimum

Shrub and groundcover planting bed: 500 mm depth minimum

Turf area: 300 mm depth minimum

3.5 Light Weight Soil Mix (not applicable)

3.6 Soil Preparation

The Contractor will ensure in-ground soil mix is thoroughly mixed before placing it into planting pit.

The Contractor will manually till 150 mm of top of all planting area to loosen the soil.

3.7 Fine Grading & Mounding

The Contractor will adjust finished grading with screened soil as necessary. Grades will be smooth and even on a uniform plane without abrupt changes or pockets and slope it away from all buildings. The Contractor will verify surface drainage of all planting areas and notify PMC of any discrepancies, obstructions, or other conditions considered detrimental to proper execution of work and plant growth.

Landscape work will be tied to existing conditions such as existing trees, palms, landscape features, utility lines, pavement and curbs, etc. Finished grades will bear proper relationship to such control. The Contractor will adjust all works as necessary to meet conditions and fulfil intention of the Drawings.

After initial settlement finish grade will be:

Turf/Lawn: 10 mm lower than adjacent walks, curbs and headers

Shrub and Groundcover: 20 mm lower than adjacent walks, curbs and headers

Tree and Palm: Flush with finish grade

3.8 Soil & Drainage Condition

Prior to planting operation, The Contractor will ensure all planting areas free of weeds, debris, rocks over 25 mm in diameter and clumps of earth that will not break up.

During initial planting operation, The Contractor will ensure that all planters/planting pits are ready for planting. The Contractor will inform the Contractor, TPIA and PMC Sangam in writing immediately of any problems or conditions that are considered detrimental to the growth of plant materials.

The Contractor must test all planters/planting pits for its drainage capability by filling planters/planting pits with water. Conditions permitting retention of water in the planters/planting pits for an excessive period of time must be brought to the attention of Contractor, TPIA and PMC immediately. Notice must include the proposal and its cost of rectifying the drainage problem. The Contractor must ensure the drainage problem is rectified before proceeding with planting works.

If The Contractor fails to inform Contractor, TPIA and PMC Sangam, they will be responsible for rectification of drainage problems and replace all damaged plant materials at their own cost.

3.9 Planting Operations for In Ground Planting

Handling Plants:

The Contractor will handle plants in a manner to avoid any damage to the plant.

The Contractor will protect plants at all times from sun or drying winds. Plants that cannot be planted immediately upon delivery to site will be kept in shade, well protected and adequately watered.

All specimen field grown and field stock trees and palms will be planted the same day they are delivered to the site.

All specimen trees and palms will be transplanted with a mechanical crane. Manual labour must not be used.

Setting:

Location of trees and palms will be staked out on site by The Contractor for review by PMC prior to execution of work. The Contractor will inform PMC **fourteen (14) days** in advance of inspection of staking-out.

Plants will be centred and set on the soil mix that has been puddled and settled.

Apply required water polymer into each planting pits for trees and palms only.

Plants will be set with soil level even with finish grade and planted to give the best appearance in relationship to adjacent structures or surroundings.

The Contractor will use specified soil mix to continue backfilling plant pits. The Contractor will set plant straight and brace rigidly in position until soil mix has been tamped solidly around rootball. When $\frac{3}{4}$ of planting pit is backfilled, water thoroughly, saturating the rootball.

The Contractor will water all plants materials immediately after planting.

Plant Pits:

All trees and palms will be installed in round pits with vertical sides, twice the diameter and 1½ times the depth of rootball.

Mulch:

The Contractor will provide 25 mm thick of oil palm kernel or tree bark or approved equivalent mulch to all trees, palms and shrub beds after installation of plant materials and during Maintenance Period.

Staking & Guying:

Immediately after planting, The Contractor will stake all trees and palms of 3.0 m overall height and below. The Contractor will guy all larger trees and palms of above 3.0 m overall height as in Landscape Planting Specification.

Shrub & Groundcover Beds:

Location of planting beds will be staked out on site by The Contractor for review by PMC prior to execution of planting works. The Contractor will inform PMC **three (3) days** in advance of inspection of staking out.

The Contractor will install plant materials in moist soil in the areas and at the specified spacing in neat rows, ensuring complete coverage of all planting areas including under and around trees and palms. Spacing is triangular spacing, unless otherwise noted.

Close Turfing:

The Contractor will lay turf immediately after delivery to prevent drying out.

On the prepared planting surface that is fertilized and moistened, The Contractor will lay turf butt-joint together with no open joints visible and pieces not overlapped. The Contractor will lay turf smooth and flush with adjoining grass areas, paving and top surfaces of curbs.

On slopes 2:1 and steeper, The Contractor will lay turf perpendicular to slope and secure every row with wooden pegs at maximum 600 mm on centre. The Contractor will drive pegs flush with soil and portion of turf.

Prior to placing turf on sloped areas as indicated in Drawings, The Contractor will place wire mesh over the soil mix. The Contractor will securely anchor turf in place with posts sunk firmly into ground at maximum 4.8 m on centre along pitch of slope and equal to width of wire mesh horizontally across the slope.

The Contractor will immediately water turfed areas after installation. The Contractor will water in sufficient amount to saturate turf and upper 100 mm of soil.

After turf and soil mix have dried sufficiently to prevent damage, The Contractor will roll turfed area to ensure good bond between turf and soil mix and remove any minor depression and/or irregularities. Turf shall then be top-dressed with fine loose topsoil and watered down sufficiently to achieve a level surface. Process shall be repeated if turf area is found to be lumpy and uneven.

Plugging:

On the prepared surface, evenly distribute at rate shown in Drawings and dice stolons into soil in such a manner that at least 75 percent of stolons are buried.

Upon completion of disking operation, roll planted area with a lawn roller to firm the ground and ensure close contact of soil and stolons.

Seeding:

The Contractor will ensure the areas to be planted moist, even, smooth and free of rocks.

The Contractor will broadcast seed uniformly at the rate shown in Drawings. The Contractor will rake seeds into top 10 mm of soil mix.

Immediately after seeding, The Contractor will compact entire area with a cultipacker roller. If a combination seeder and cultipacker is used during seeding operation, additional compaction is not required.

The Contractor will water the seedbeds immediately after compacting and keep all areas moist as needed for optimum plant growth. Apply water sporadically to prevent erosion or gulying.

Hydromulching:

The Contractor will prepare all areas to be hydromulched to a smooth even surface.

The Contractor will apply fertilizer as required for all plant materials for both planting and on-going maintenance. Method and frequency of application must follow the supplier's specification to ensure sufficient nutrients for healthy plant growth.

Hydromulching Operations:

Seeded Lawn Areas: Mixing the required seeds at specified rate with hydromulch slurry and spray the mixture over soil.

Grass or Ground Cover Stolons: Broadcast vegetative parts evenly over areas at rates specified, with a minimum of 90 percent coverage over entire area and capping with hydromulch.

The Contractor will manually hydromulch areas where it is not accessible.

The Contractor will water all areas immediately after mulching and keep areas moist as needed for healthy plant growth.

3.10 Planting Operations for On Structure Planting (not applicable)

3.11 Tree/Palm Root Pruning

Upon receiving approval from PMC, The Contractor will prepare plant materials to be delivered to the Project Nursery Centre.

The Contractor will remove approximately 1/3 of secondary branches in such a way to preserve natural character of the tree. The Contractor will remove approximately 1/3 of lower fronds of the palm. Other parts of the remaining fronds will not be cut. Only clean and sharp tools will be used. Cuts will be smooth with no tearing or ripping of the bark. All dead and broken branches will be removed. All aerial roots will be trimmed. All trees trimming will be approved by PMC.

The Contractor will prepare soil for rootball to be removed with each tree/palm/bamboo. Unless otherwise directed by PMC, size of rootball is as follows:

Tree/Palm Trunk Height Transplanted Rootball Size

Specimen 1.5 m dia.

4 – 5 m 1.2 m dia.

2 – 4 m 1.0 m dia.

1 – 2 m 0.8 m dia.

The Contractor will mark a 1500 mm circle around tree/palm. A semi-circular trench 400 mm wide and 1500 mm deep around tree/palm/bamboo will be cut.

When trenching, only clean sharp cutting tools will be used. All ends of roots will be severed cleanly.

The Contractor will backfill the trench with the following mixture:

Peat moss: 50%

Sand: 40%

Vermiculite: 10%

Plant materials will be kept well irrigated for the next four (4) weeks.

Rootball area will be drenched with a mild fungicide once every two (2) weeks.

After four (4) weeks, repeat procedures the above procedures for the other half of rootball.

The Contractor will guy plant material securely to prevent it from falling.

Plant materials will be kept well watered for the next four (4) weeks. Keep up with fungicide application.

Eight (8) weeks after first root pruning is done, plant material will be lifted and remaining root system will be severed.

The Contractor will ball and burlap rootball securely with geofabric and non-synthetic ropes.

The Contractor will remove each plant material with its wrapped root ball. The Contractor will carefully place plant material into temporary planters/planting bags.

The Contractor will transplant all approved plant materials to Project Nursery Centre.

The Contractor will use 'Re-potting Soil Mix' as described under Growing Media.

When transporting plant materials, The Contractor will keep all plant materials as upright as possible.

3.12 Tree/Palm Planting

All trees/palms will be delivered to site on the day of scheduled planting. Do not move trees/palms until new planting pits have been properly excavated and prepared to receive trees/palms.

All trees/palms will be transported without any damage to branches/trunk.

All palm fronds will be securely wrapped with non-synthetic material during transportation and planting operation.

All trees will be lightly pruned before being moved to site. Pruning of all trees/palms must be approved by PMC.

Prepare planting pits two (2) days before trees/palms arrive on site. Planting pit for trees/palms will be sterilized, drenched with fungicide and covered with a plastic sheet. Soil mix will be sterilized and drenched with fungicide.

Prepare soil mix for trees/palms as described under Growing Media.

Spread rooting hormone to the sides and base of planting pit before planting.

Lower tree/palm into planting pit. Backfill planting pit and water tree/palm at same time. This is to ensure that air pockets are minimised around rootball.

Backfill each planting pit by placing prepared soil in layers around rootball. Tamp each layer in place.

Avoid displacing the position of tree/palm or injuring roots.

At middle layer, apply "Osmocote" slow release fertilizer around each tree/palm.

When 1/3 of backfill soil mix has been placed, fill space with water and allow soil to settle around roots. Complete backfilling.

Support each tree/palm immediately after planting. Install at least three (3) guys spaced equally about each tree/palm.

Encase each guy wire in a resilient tree tie and attach it to tree/palm trunk at an angle of approximately 60 degrees, at about 1/3 the height of the tree/palm.

Anchor each guy to notched stakes. Drive stakes into ground angled away from tree/palm. Drive tops of stakes at least 300 mm below surface of ground.

Tighten each guy with its turnbuckle. Keep guys taut.

Attach flag strips on each guy at 1.0 m intervals, covering 1/3 of guy wire.

Install hose and sprinkler for irrigating crown of palm only.

Tree/palm will be kept moist. Crown of palm will be irrigated at least once a day, for a minimum period of one (1) hour in early evenings. Do not irrigate crown of palms during the day to prevent evaporation of water from surface of leaves that may lead to leaf scorching.

Rootball will be drenched with rooting hormone once every two (2) weeks. Mild fungicide will also be applied every two (2) weeks to rootball area of tree/palm.

Mild liquid fertilizer will be applied to crown of palm three (3) months after planting.

3.13 Pruning Operation

Pruning and removal of any part of plant material will be done with clean sharp tools. Tools used to carry out the pruning work must be appropriate for the task. Surface of tools and equipment will be sterilized after use on plant materials that are suspected or known to be diseased.

Cuts on plant materials will be made into living tissues to induce callusing. Cut surface will be flat, sharp and without jagged or torn edges.

Pruning operation will consider carefully natural growth pattern of branches on trees, palms or shrubs. Tree branches will be pruned back to the collar at base of branch.

Categories of Pruning Work

Cleaning Out Works

Cleaning out works means removal of dead, dying and diseased branches; branches that are posing danger;

parasite plants and any other materials; and/or

dead, dying and diseased vines.

Crown Thinning of Trees/Palms

Crown thinning means removal of weak and thin branches that are less than 50 mm diameter or lowest ring of fronds from palms.

Light Pruning

Light pruning will means removal of branches that are 75 mm diameter.

Hard Pruning/Pollarding

Hard Pruning means removal of up to 40 percent of tree branches and palm fronds.

3.14 Planting Maintenance

Maintenance works under this section includes but is not limited to the following:

The Contractor will protect areas are exposed to traffic by erecting barricades immediately after planting.

The Contractor will irrigate planting areas as required to ensure active growth. Areas will be kept moist but not saturated. The Contractor will regulate irrigation as necessary to avoid erosion and gullyng.

The Contractor will fertilize as needed in accordance with manufacturer's recommendations and five (5) days prior to Final Maintenance Inspection. The Contractor will exercise caution, proper supervision and take necessary measures to avoid scorching of plants.

The Contractor will keep planting areas free of weeds and undesirable grasses through daily weeding if required. Remove entire root system of all weeds. Dispose off all weeds in appropriate trash containers. All nutgrass will be manually removed before flowering.

The Contractor will inspect all plants, including lawn, for disease infestation or insect attack weekly and treat infected plant material immediately with appropriate fungicide or insecticide until complete recovery.

The Contractor will remove damaged or diseased growth from all plant materials.

The Contractor will immediately remove any dead or dying plants. Replacement of plants will be of same species and size as originally planted.

The Contractor will re-stake, tighten, repair, reset guys to proper grades or upright position for any plant that are not in their proper growing position.

The Contractor will mow lawn to 20 mm height whenever the average height exceeds 50 mm. Grass will be cut according to contours of the ground. Height of grass blade after cutting will not stand higher than 35 mm above ground level.

Axonopus compressus will be cut using mechanical grass cutting machine, either "Hong Tou" with safety guards or rotary cutters.

Zoysia japonicus and Bermuda hybrid will be cut using cylindrical grass cutters.

All clippings must be removed on the same day and transported to the designated compost facility.

As it becomes evident that certain areas of lawn and groundcover have not uniformly or properly established, The Contractor will replant area immediately with same plants and quantity as specified for initial planting. Plant materials must be maintained to ensure healthy and active growing condition for approval during Final Maintenance Inspection.

The Contractor will prune all trees as directed by PMC to establish desired form, habit and appearance.

The Contractor will maintain records of maintenance procedures including manpower, description of tasks, fertilizers, irrigation, etc. All records will be submitted to Employer/Operator upon completion of formal maintenance period and to PMC upon request.

The Contractor will work closely with the Employer/Operator to set up a maintenance schedule.

Routine Maintenance Work Schedule

Operation / Frequency

Watering / Check all planting areas and pits and water as often as necessary to ensure that planting medium does not dry out.

Weeding / Daily

Edging / Fortnightly

Fertilizing

Trees & Palms / Once every two months Shrubs & Groundcovers / Monthly

Turf / Once every two months

Composting / Once every three months. Water thoroughly after application.

Mulching of Trees & Palms / Once every three months

Mulching of Shrubs / Once every three months

Loosening of soil / Monthly

Control of pest by applying appropriate insecticides / Fortnightly

Control of disease by applying appropriate fungicides / Monthly, increasing frequency to fortnightly during rainy season.

Grass cutting of Axonopus compressus / Fortnightly

Grass cutting of Zoysia japonicus / Weekly

Grass cutting of Bermuda hybrid / Twice a week

Manpower

One (1) Qualified Horticulturist on one (1) day per month. One (1) Experienced Supervisor on one (1) day per week.

Four (4) Skilled and Experienced Gardeners full-time on six (6) days per week.

A back-up team of three (3) men will operate fortnightly for one (1) days on major trees, palms, shrubs, groundcovers and lawn maintenance.

A separate grass cutting team will operate at every 14 days interval. Grass cutting works to be completed in one (1) day on each operation.

A separate tree pruning team will operate once every six (6) months. Tree pruning works to be completed in one (1) day on each operation.

Maintenance On Weekends And Public Holidays

In the event of emergency, The Contractor must carry out landscape maintenance works immediately according to Employer's instruction.

3.15 Clean Up Works

There will be area designated by PMC for The Contractor to carry out 'Clean-Up Works'.

Clean-up works will include the following:

Removal of dead and/or over hanging branches of existing trees, palms, shrubs and groundcovers.

Removal of any garbage and unsightly foreign materials.

Removal of dead vines and plant materials.

The Contractor will prevent damages to existing healthy plant materials identified to be conserved.

When plant materials that are to be conserved are damaged beyond use during clean up operation,

The Contractor will be liable to replace plant material at their own expense.

Assessment on damaged plant material will be done by PMC. Decision on replacement and repair works by The Contractor will be at PMC's discretion and decision of PMC is final.

3.16 Restoration

The Contractor is responsible for use of all material, labour, equipment and any injury to plant material caused by such material, labour and equipment will be repaired or replaced by Contractor at their own expense.

B 4 PROJECT NURSERY CENTRE

4.1 General

The Contractor will set aside a section of an existing operating nursery or set up and operate a Project Nursery Centre necessary for plant storage and plant acclimatization to ultimately furnish required plant material for installation.

The Contractor will indicate the site location for Project Nursery Centre during the tender documentation and shall preferably be in Sector 117, NOIDA. PMC may direct the Contractor to set up Nursery in Unihomes, Ambala, Sector 16, Ambala site or any other Unitech Limited site where space can be made available also, if conditions are more suited there.

Project Nursery Centre will be operational from **two (2) months** of award of Contract.

All plant materials brought into Project Nursery Centre must meet specification as stated in Schedule of Works.

The Contractor will nurture and maintain all acquired plant materials to improve size, form and health during the designated holding period. At time of installation, size and form of all plant materials must exceed the specification as stated in Schedule of Works.

Trees and palms will be placed apart at minimum spacing of 2.0 m centre to centre. All plant material will be tagged with labels, clearly displaying the serial number for each plant and plant species name.

The Contractor will be responsible for maintaining the Project Nursery Centre until all plant material are installed on project site.

4.2 Operation Layout

Size of Project Nursery Centre will be sufficient to accommodate all trees and palms acquired for this project. It will include an office equipped with basic telecommunication systems.

If Project Nursery Centre is not a set-aside section of an existing operating nursery, The Contractor will submit a detailed description of all nursery facilities. Documents will state types of structures, irrigation system, plant growing areas, types of plant containers and description of security measures. All costs of above items must be allowed for in the tender submission.

Project Nursery Centre will have all utility services, plant irrigation water, sewer disposal, electricity, etc., necessary for a successful operation for the Project Nursery to facilitate optimum plant growth.

Project Nursery Centre will have sufficient access paths within nursery site for ease of delivery and removal of plant materials, equipment, supplies, etc.

The Contractor will be responsible for drainage structure necessary to protect plant materials at Project Nursery Centre site from rainfall run-off damage.

Project Nursery Centre layout will include proper and approve fencing for protection against intensive wind. Other security measures must be taken against vandalism and plant damage from animals. If Project Nursery Centre is the set-aside section of an existing nursery, The Contractor will clearly demarcate the said plot of land encompassing all plant material reserved for this project with temporary fencing. A signboard showing the **name of project** in bold, capital letters will be established at the Project Nursery Centre entrance.

Project Nursery Centre will be equipped with maintenance tools such as tree pruners, hand saws, shovels, movers and soil processing equipment such as front-end loaders required for basic nursery operation. Approved fertilizers and chemicals will be of constant supply.

Project Nursery Centre will be attended by a qualified Horticulturist at all times throughout duration of Project Nursery Centre.

4.3 Acquisition & Approval

Trees and palms as specified in size and characteristics will be located and secured within **two (2) months** after award of Contract. If plant material is not available locally, The Contractor may import plants from foreign countries at his own cost and time. The Contractor will meet all necessary cost and documentation requirement through custom and quarantine in order to obtain the plant material.

All plant material will be sourced and selected to approval of PMC. Approval of all trees and palms will be done by submission of digital colour photos submitted to PMC. A scaled marker will be placed beside the plant for scale. Failing this, a visual inspection will be arranged with PMC. Photographic approval will not restrict PMC's right to reject any plant material for any defect not evident in photographs.

4.4 Progress Report

One month after award of Contract, The Contractor will submit a request for inspection and documentation to PMC on plant materials delivered to Project Nursery Centre.

Inspection will be held at **45 days** interval. After inspection, The Contractor will submit digital colour photos with a status report of materials acquired within **two**

(2) week of inspection. Status report will be sent via email to PMC and Employer respectively.

Photos will be neatly labelled, with a title box in lower right-hand corner, showing date of inspection, project name and location on standard A4 format. Trees and palms will be tagged to identify each species. Each tag will be serial numbered for identification when transplanted to site.

4.5 Uniformity

Key requirement in the acquisition of trees and palms is uniformity of size and character. The following basic requirement will be met and all final decision will be made by PMC.

Overall height: Measured from collar to top general pollarded crown of tree or from centre of crown to shaft of palm.

Trunk height: Measured from collar to base of woody tissue of trunk.

Trunk condition: Damaged or discoloured trunks will be rejected. Trunk diameter is to be consistent for each species of trees. Multi-branching is required but de-topped trees will be rejected.

State of health: No signs of cracks, pest attack, burns, etc. Usually noted in colour and size of frowns of the palms.

Rootball: Size of rootball will be a minimum of 1.5 m diameter and will be unbroken.

APPROVED BRANDS

UNITECH PROJECTS: CIVIL WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
1	Cement	
i		Ultra Tech
ii		Lafarge
iii		ACC
iv		Ambuja
v		COROMANDAL, CHETTINAD, VASAVDUTTA
vi		NUVOCO, CHETTINAD, DALMIA CEMENTS
vii		PRISM, BIRLA PLUS
2	Reinforcement Steel {TMT Fe 500, Fe 550} and Structural Steel [Tubular sections, Hollow Steel sections & Rolled Steel sections]	
i		JSW
ii		RINL (Vizag Steel)
iii		SAIL
3	Polycarbonate Sheet 6mm thick	
i		Lexan
ii		Anchor
iii		Kenwood
iv		Century
v		GE
vi		Danpalon
vii		Polygal
4	AAC blocks	
i		BILTECH
ii		Ultra Tech, Magicrete
iii		JK
iv		SHIRKE
v		ECOLOITE
5	Waterproof solid core flush door	
i		Anchor
ii		Century
iii		Kenwood
iv		EURO
v		Greenlam
vi		Merino
vii		Duraply
viii		Kutty
6	Lamination sheets' (1mm & 1.50 mm thick)	
i		Greenlam
ii		Century
iii		Merino
iv		Royale Touche
v		Sundek
7	Door Fixtures & Fastenings	
i	Main internal door	

UNITECH PROJECTS: CIVIL WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
	a) Stainless steel	
i		Haffle
ii		Hattich
iii		Dorset
iv		GEZE
v		GODREJ
vi		OZONE
vii		HARDWYN
8	Aluminium Sections	
i		Jindal
ii		Hindalco
iii		Superfine
iv		Bhoruka
v		Shri Narmada
vi		Agravanshi
vii		Global Aluminium
viii		Indo Alusya
9	Vitrified tiles (600mm x 600mm) incl. Anti-skid , Matt etc. {ONLY MOTHER PLANT TILES TO BE PROCURED}	
i		Kajaria
ii		Johnson
iii		Nitco
iv		RAK
v		Asian (AGL)
10	Oil bound Distemper to internal walls, Acrylic Distemper	
i		Asian (AGL)
ii		Nerolac
iii		Berger
iv		Dulux
11	Synthetic Enamel Paint, Plastic Emulsion Paint, Oil Bound Distemper, Acrylic Distemper and Primer	
i		Asian (AGL)
ii		Nerolac
iii		Berger
iv		Dulux
12	Polymer based External Paint, Textured Paint	
i		Apex from Asian Paints
ii		Excel from Nerolac Paints
iii		Shalimar
iv		Berger
iv		Unitile
iv		Spectrum
iv		Heritage

UNITECH PROJECTS: CIVIL WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
13	Water resistant white cement based wall care putty	
i		J K White
ii		Birla White
iii		Ultra Tech
iv		Wall plast
14	Gypsum Plaster	
i		Saint Gobain / India Gypsum
ii		Conmix
iii		Ultratech
iv		USG Boral
v		Ferrouscrete
vi		Lafarge
15	Glass	
i		Saint Gobain
ii		Modi Asahi
iii		Pil Kington
iv		Emiretus
v		Modiguard
15-a	Aluminium Ingot	Nalco
i		Balco
ii		Hindalco
iii		
16	APP/ SBS membrane water proofing	
i		Tikidan
ii		APEX
iii		IWL
iv		Sika
v		Shalimar
vi		
17	Expansion Joint treatment	
i		Chowgule Construction Chemicals Pvt. Ltd.
ii		Bizzar Expansion
iii		LBH Expansion Joints India Pvt Limited
iv		NTE India Pvt. Ltd.
v		SANFIELD (INDIA) LIMITED
vi		a) SNPG-600
vii		b) SRFL -600
viii		KANTAFLEX
ix		
18	Anti Termite Chemical	
i		NOCIL
ii		PCI
iii		Premier Pest Control
iv		Dursban
19	Concrete Curing Compound	

UNITECH PROJECTS: CIVIL WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
i		FOSROC
ii		SIKA
iii		BASF
iv		Pidilite
v		CICO
20	NON-SHRINKING GROUTS	
i		FOSROC
ii		SIKA
iii		BASF
iv		Pidilite
v		CICO
vi		Mc-Bauchemie
21	CONCRETE ADMIXTURES	
i		FOSROC
ii		SIKA
iii		BASF
iv		Pidilite
v		Mc-Bauchemie
22	CONSTRUCTION CHEMICALS (POLY SULPHIDE SEALENTS)	
i		CHOWKSEY
ii		CICO
iii		FOSROC
iv		PIDILITE
v		STP
vi		Mc-Bauchemie
23	BITUMEN	
i		INDIAN OIL
ii		HINDUSTAN PETROLEUM
iii		BHARAT PETROLEUM
24	FIRE INTUMESCENT COATING	
i		3M
ii		PROMET
iii		HEMPEL
iv		
v		
25	SMOKE INTUMESCENT SEAL	
i		3M
ii		FISCHER
iii		HILTI
iv		SIKA
v		Mc-Bauchemie
26	EPOXY COATING	
i		BASF
ii		SIKA
iii		FOSROC
iv		Mc-Bauchemie
27	POLYSULPHIDE SEALENTS	

UNITECH PROJECTS: CIVIL WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
i		BASF
ii		SIKA
iii		FOSROC
iv		PIDILITE
v		CHOWKSEY
vi		
28	ALUMINIUM SHUTTERING	
i		MFE FORMWORK
ii		KUMKANG
iii		S-FORM
iv		MAINI
29	PRE CAST CONCRETE (incl. DRAIN COVERS, KERB STONES etc..)	
i		B.G. SHIRKE
ii		SIPOREX
iii		SUPREME CONCRETE
iv		KK MANHOLE AND GRATINGS CO.
30	FLOOR HARDNER	
i		FOSROC
ii		SIKA
iii		PIDILITE
iv		GE
31	PRE COATED SHEETS	
i		JSW STEEL
ii		TATA BLUE SCOOP
32	RE BAR CHEMICAL	
i		HILTI
ii		3M
iii		FISCHER
33	FIRE AND SMOKE CURTAINS	
i		VEILOFIRE
ii		STOBEICH
iii		FIRE TECHNOLOGIES
iv		US SMOKE & FIRE
34	GI RECESSED MANHOLE COVERS INTERLOCK TYPE	
i		ARC ENGG.
ii		TASNEEM ENTERPRISES
iii		SHOMYA FAB.
iv		MNC DRAIN SOLUTION
v		PROSPERITY EXIM
35	CC PAVERS	
i		NITCO
ii		ULTRA
iii		UNISTONE
iv		PAVIT
v		DURACRETE
vi		KK MANHOLE AND GRATINGS CO.

UNITECH PROJECTS: CIVIL WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
vii		Pave Espania
36	FRICITION DAMPER	
i		QUAKETEK
37	WELDING ELECTRODES	
i		L&T
ii		MODI
iii		OERLIKON
iv		ADVANI
v		ESAB
vi		ADOR
38	ANCHOR FASTNERS	
	CHEMICAL FASTENERS	
i		FISCHER
ii		HILTI
	MECHANICAL FASTENERS	
i		FISCHER
ii		HILTI
39	ELECTRO FORGED GRATINGS	
i		GREATWELD STEEL GRATINGS
ii		KANADE ANAND UDYOG
iii		PINAX STEEL INDUSTRIES
iv		CELLCOM GRATINGS
v		OMKAR GRATINGS
vi		
40	BIPOLAR CONCRETE PENETRATING CORROSION INHIBITING ADMIXTURE	
i		CLEAN COATS
ii		KRISHNA CONCHEM PRODUCTS
iii		SUNANDA SPECIALITY
iv		STP LTD.
41	BITUMEN FOR LANDSCAPE WORKS	
i		RK EXPORT HOME
ii		SOPREMA
iii		ROADSTAR BITUMEN HOME
iv		
42	PLASTER OF PARIS	
i		SAKARNI
ii		JK
iii		BIRLA

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
A	CARPENTRY WORKS	
1	Commercial Plywood/ Marine Plywood- ISI make	
i		Green
ii		National
iii		Anchor
iv		Archid ply
v		Dura
vi		
vii		
2	Plain/ Laminated Particle Board	
i		Ecoboard
ii		Novapan
iii		Decoboard
iv		
3	Plain /Laminated Medium Density Fiber Board	
i		Nuwood
ii		Duratuff
iii		Green
iv		Ecoboard
v		Novapan
4	Block Board	
i		KIT ply
ii		Green
iii		National
iv		Anchor
v		Century
5	GYPSUM BOARD	
i		India Gypsum
ii		Boral
iii		Conmix
6	Mineral Fibre False Ceiling	
i		Armstrong
ii		Saint Gobain
iii		USG
7	Metal Ceiling Tiles and Grid	
i		Techno Ceiling Products
ii		Hunter Douglas
iii		Armstrong
iv		Luxalon
v		Durlum
8	Soft Board	
i		Jolly Board

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
9	Calcium Silicate Board	
i		Ramco
ii		Aerolite
iii		USG Boral
iv		Saint Gobain
10	Veneer 3.5mm to 4mm	
i		Timex
ii		Euro
iii		Century
iv		Merino
v		R K Ply
11	Lamination sheets' (1.50 mm thick)	
i		Greenlam
ii		Marino
iii		Sundeck
iv		Century
v		Royal Touch
12	Laminates 1mm	
i		Formica
ii		Greenlam
iii		Merino
iv		Century
13	Wooden Fire Doors	
i		Aadhunik
ii		NAVAIR
iii		GANDHI AUTOMATION
iv		NAVAIR
v		HELSPAN
14	GI Fire Doors / MS PAINTED FIRE DOORS	
i	METAL FIRE DOORS	NAVAIR
ii		Sukriti
iii		GANDHI AUTOMATION
iv		MPP
v		Matrix
B	HARDWARE	
1	Drawer Channels	
a)	Local Make	
i		Earl Bihari
ii		Windor
iii		Enox

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
v		ozone
b)	Imported	
i		Geze. Hafele
ii		Hettich
iii		Dorma
2	Screws	
i		Nettlefold
ii		GKW
3	Hardware for Glass doors and partitions, Floor Springs, Patch Fitting, Floor Lock, Top Pivot	
a		Geze
i		Hafele
ii		hettich
iii		Dorma
iv		
4	Adhesive	
i		Fevicol SH
ii		Vamicol
iii		Araldite of Ciba Geigy
5	Wood Preservative	
i		Woodguard
ii		Termiseal
iii		ASCU (PS2) oil based
C	WALL FINISHES	
1	Polyurethane Paint	
i		Thorax coating UK
ii		SIKA
iii		BASF
iv		GE
v		CICO
vi		FOSROC
2	Fire Retardant Paint	
i		Shalimar Paints
ii		Noble paints
iii		
iv		
3	Textured Paint	
i		Spectrum
ii		Terraco
iii		Renova
iv		Asian Paints
v		
4	Wallpapers	
i		Marshall

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		M B international
iii		Arte
iv		Ego
D	MISCELLANEOUS	
1	Wall Acoustical material	
i		Armstrong
ii		Anutone
iii		Techno Ceiling Products
iv		
2	Insulation material Glass wool	
i		TWIGA
ii		Phenol herm
iii		Kimmco
iv		LLOYD INDIA
v		ROCK WOOD
3	Antistatic Vinyl flooring	
i		Armstrong
ii		Wonder floor
iii		Nora
iii		Polyflor
iv		Gerflor
v		Tarkett
4	Artificial Leather	
i		Pride
ii		National
iii		Stanley
5	Float Glass/ Back painted Glass	
i		Saint Gobain
ii		Gleverbel
iii		ASAHI
iv		Pilkington
v		
6	Modular demountable Glass Partitions	
i		Methis
ii		JEB
iii		
7	Mirror	Mirror
i		Modi Guard
ii		Asahi
iii		Saint Gobain
iv		Atul
v		Continental
8	Writing Board	

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
i		White Mark
ii		Alkosign
iii		Altop
iv		Alkon
9	Lockers and Storage Compactor	
i		Godrej
ii		Kompress
iii		Steelage`
10	Hand Dryer	
i		Ascon
ii		Kimberly Clarke
iii		Technocrats
iv		EURONIX
11	Fabric protection	
i		Scotchguard Birla 3M
ii		Fabguard Dove Corp.
12	Frosted Film	
i		Garware
ii		3M
iii		AVERY
iv		IQUE
v		LIUMAR
13	Wooden Flooring	
i		Pergo
ii		Tarkett
iii		Armstrong
iv		Ego
v		SCHEIT
vi		KRONOTEX
vii		JUNKERS
viii		
ix		
14	SS Railing	
i		Neki
ii		Ozone
iii		Enox
iv		D LINE
v		JINDAL
vi		SALEM
15	Slotted angel racks	
i		MEK
ii		Godrej
iii		Vishwakarma
16	Rubber gasket	
i		Mona

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		Hanu Industries
iii		Bohra rubber
iv		Roop Polymer
v		Anand
17	Synthetic Resin	
i		DuPont Corian
18	HPL Toilet cubicals	
i		Merino
ii		Greenlam
iii		Niveeta Cubix
iv		
19	HPL Lockers	
i		Merino
ii		Greenlam
iii		Niveeta Cubix
20	Aluminium Skirting	
i		Windor
ii		Doyle Asia
iii		Bottomline
iv		HAFFELE
v		IQUBX
vi		HETTICH
vii		LINDNER
21	Vinyl Graphics Films	
22	Roller Blinds	
i		Vista
ii		Wall Track
iii		hunter douglas
iv		Phifer
v		MAC
vi		Rosselle
23	ALUMINIUM COMPOSITE PANEL (ACP)	
i		ALUCOBOND
ii		REYNOBOND
iii		
iv		
v		
24	ALUMINIUM COMPOSITE PANEL PVDF COATING	
		VALSPAR

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
		AKZONOBEL
		PPG
25	STRETCH MEMBRANE/ TENSILE FABRIC/ STRETCH FABRIC/MESH FABRIC	
i		SERGE FERRARI
ii		CHUKOH, JAPAN
iii		SAINT GOBAIN, US
26	POWDER COATING	
i		JOTUN
ii		AKZONOBEL
iii		BERGER
iv		PPG
27	REFELCTIVE GLASS/ HIGH PERFORMANCE SOLAR TOUGHENED GLASS	
i		SAINT GOBAIN
ii		ASAHI
iii		PILKINGTON
28	FIRE RATED GLASS	
i		SAINT GOBAIN
ii		PILKINGTON
iii		FIRELITE
iv		GLAVERBEL
v		ASAHI
29	PVB LAMINATION	
i		DUPONT
ii		SAFLEX
30	LAMINATION FOR GLASS RAILING & FINS	
i		DUPONT
ii		OR APPROVED EQUIVALENT
31	WEATHER SEALENTS	
i		DOW CORNING
ii		GE
iii		WACKER
iv		CHOKSEY CHEMICALS
v		PIDILITE
vi		
32	STRUCTURAL SEALENT	
i		DOW CORNING
ii		GE
ii		WACKER
iv		CHOKSEY CHEMICALS
v		PIDILITE

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
vi		
33	BAKER ROD	
i		DOW CORNING
ii		GE
iii		WACKER
iv		SUPREME
34	EPDM AND SILICON GASKETS	
i		SCHUCO
ii		SAPA BUILDING SYSTEM
iii		EUROPEAN FAÇADE PRODUCT
iv		REYNERS
v		
35	SPACER TAPE (OPEN PU CELL)	
i		NORTON
ii		BOW
36	SILICON SEALENT	
i		GE
ii		DOW CORNING
iii		WACKER
iv		
37	SS SPIDER FITTING	
i		OZONE
ii		DORMA
iii		HAFELE
iv		LISUS
v		SADEV
38	AUTOMATIC REVOLVING DOORS/SLIDING DOORS	
i		DORMA
ii		KABA
iii		HAFELE
iv		GEZE
39	SS CLAMPS	
i		DORMA
ii		HILTI
iii		FISCER
40	ROCK WOOL FIRE STOP	
i		ROCKWOOL INDIA
ii		ROXUL
iii		LLOYD
41	POLYCARBOBNATE SHEET	
i		DANPALON
ii		GE PLASTIC

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
42	SS FRICTION STAY HINGES, ROLLERS FOR SLIDING, FLUSH LOCK FOR SLIDING, WOOL PILE WITH SILENT FILM, WINDOW HINGES, DOOR HINGES	
i		DORMA
ii		OZONE
iii		GEZE
iv		SCHUCO
v		REYNER
43	CARPET TILE	
i		HERITAGE
ii		MOHAWK
iii		SHAW
iv		MODULUS
v		INTERFACE
44	STAMP CONCRETE PIGMENT/APPLICATOR	
i		UNITED FLOORING
ii		CONCRETE BY DESIGN
iii		FLEX STONE
45	FALSE FLOORING	
i		UNIFLOOR
ii		EVEREST
iii		UNITILE
iv		KINGSPAN
46	ACID RESISTANT TILES	
i		JOHNSON
ii		REGENCY CERAMICS LTD
iii		Steuler Industrial Solutions
iv		Eurocare Industries
47	TacTiles	
i		EMINENT GUJARAT
ii		PELICAN CERAMICS
iii		JOHNSON
iv		SOMANY
48	TILE GROUT	
i		FERROUS
ii		LATICRETE
iii		BAL ENDURA
iv		PIDILITE
49	TILE ADHESIVE	
i		ARDEX ENDURE
ii		FERROUSCRETE
iii		LATICRETE
iv		KERAKOLL

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
50	GLASS MOSAIC	
i		MRIDUL TILES
ii		BISAZZA
iii		NITCO
iv		DALAL TILES
v		UNITILE
vi		Palladia
vii		Accure
51	EPOXY FLOORING	
i		SIKA
ii		BASF
iii		FOSROC
iv		
52	STONE SEALERS	
i		LATICRETE
ii		ARDEX ENDURA
iii		MYK SCHOMBURG
iv		CHOKSEY CHEMICALS
v		FERROUS CRETE
vi		
53	STONE ADHESIVE	
i		KERAKOLL
ii		BALENDURA
iii		ARDEX ENDURA
iv		Araldite
v		
54	HDPE MEMBRANE	
i		SIKA
ii		BASF
iii		SOPREMA
iv		GRACE
v		FOSROC
55	WATER BAR	
i		SIKA
ii		BASF
iii		SOPREMA
iv		GRACE
v		FOSROC
vi		TREMCO
vii		Fixopan
viii		Jyoti
56	GEO TEXTILE MEMBRANE	
i		VIRENDER TEXTILE
ii		MANAS TEXTILE
iii		ACETURF

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
iv		OVILITE IND.
57	XPS	
i		DOW CORNING
ii		OWEN
iii		SUPREME
58	HDPE STUDDED DRAIN BOARD	
i		VIRENDER TEXTILE
ii		DELTA
iii		OVILITE IND.
59	THERMAL INSULATION _OVERDECK	
i		SIKA
ii		BASF
iii		GRACE
iv		LLYOD Insulation
v		
vi		
60	CEMENTITIOUS WATERPROOFING ACRYLIC	
i		SIKA
ii		BASF
iii		SOPREMA
iv		SUPER SNOWCEM
v		
vi		
61	FRAMING FOR MGO/CALCIUM SILICATE	
i		SAINT GOBAIN
ii		USG BORAL
iii		LAFARGE
62	ACOUSTIC TILES	
i		Armstrong
ii		Lindner
iii		Saint Gobain
63	OPEN CELL CEILING	
i		Armstrong
ii		Lindner
iii		Hunter Douglas
64	BAFFLE CEILING	
i		Armstrong
ii		Lindner
iii		Iqubx
iv		Hunter Douglas
v		Durlum
65	METAL CEILING	
i		Armstrong

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		Lindner
iii		Hunter Douglas
iv		Durlum
66	WOOD VENEER CEILING	
i		Armstrong
ii		Lindner
iii		Hunter Douglas
iv		Durlum
67	STRETCH CEILING	
i		BARISOL
ii		EUROCELL
iii		CLIPSO
68	THERMAL INSULATION & UNDERDECK_XPS	
i		DOW CORNING
ii		OWENS
iii		SUPREME
iv		
v		
69	HIGH PRESSURE LAMINATE	
i		MERINO
ii		FUNDERMAX
iii		TRESPA
iv		VERSITO
70	LAMINATE	
i		MERINO
ii		CENTURY
iii		DURO
iv		GREENPLY
v		FORMICA
71	DOOR HARDWARE	
i		DORMA
ii		Haffelle
iii		Hetich
iv		Doorset
v		
72	MODULAR/ DEMOUNTABLE WOOD PANELLING	
i		ARMSTRONG
ii		HUNTER DOUGLAS
iii		IQUBX
iv		ALLOY
73	ROLLING SHUTTERS_MANUAL AND OPERATED	
i		GANDHI AUTOMATION

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		Swastik
iii		Standard
iv		Aakash
74	ACOUSTIC PANELS	
i		ARMSTRONG
ii		PYROK
iii		TRANQUIL GLOBAL
iv		DECOUSTICS
v		ANUTONE
vi		TECHNO ACOUSTIC
vii		BRUAG
viii		SOUNDWORKS
ix		WOODFIT ACOUSTICS
x		SERGE FERRARI
75	WOOD ADHESIVE	
i		FEVICOL SH
ii		FEVICOL SPPEDEX
iii		JEEVANJOR (VEMICOL)
76	DOOR SEALS	
i		ENVIRO SEALS
ii		OZONE
iii		3M
iv		HAFFELE
77	OPENABLE WALL PARTITIONS	
i		AZAZO
ii		DORMA
iii		HAFFELE
iv		HUFCOR
v		GEZZE
78	MODULAR TOILET PARTITIONS	
i		MERINO
ii		DORMA
iii		GREENLAM
79	MODULAR FURNITURE / LOSE FURNITURE	
i		WIPRO
ii		ROCKWORTH
iii		GODREJ
iv		DELLFORM
v		HNI
80	CUSTOMISED FURNITURE	
i		As per factory inspection and Owner/PMC approval
81	PRIMER INORGANIC ZINC SILICATE	
i		SIKA

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		CIPY
iii		STP
82	SYNTHETIC ENAMEL AND PRIMER	
i		ASIAN
ii		BERGER
iii		DULUX
iv		DUPONT
v		NEROLAC
		SHALIMAR
83	PLASTIC EMULSION AND PRIMER	
i		ASIAN
ii		BERGER
iii		DULUX
iv		DUPONT
v		NEROLAC
vi		SHALIMAR
vii		
84	PUTTY	
i		BIRLA
ii		JK
iii		BERGER
iv		NErOLAC
v		WALL PLAST
vi		ASIAN
vii		DULUX
85	ACRYLIC POLYMER EXTERIOR WATERPROOF TEXTURED PAINT	
i		ASIAN
ii		BERGER
iii		ICI DULUX
iv		SHERWIN WILLIUMS
v		
86	FIRE RETARDANT PAINT AND PRIMER	
i		AKZONOBEL
ii		PACIFIC
iii		PROMAT
87	OIL BOUND DISTEMPER AND PRIMER, ACRYLIC DISTEMPER, CEMENT PRIMER	
i		ASIAN PAINTS
ii		NIPPON
iii		BERGER
iv		J&N , NEROLAC
88	CHLORINATED RUBBER PAINT	

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
i		BERGER
ii		ASIAN
iii		DULUX
89	WOOD PRIMER AND POLISH	
i		SHALIMAR
ii		ASIAN
iii		DULUX
iv		MRF
v		BERGER
90	POWDER COATING PAINT	
i		JOTUN
ii		AKZONOBEL
iii		BERGER
iv		PPG
91	ACRYLIC SOLID SURFACE	
i		3M
ii		DELITE
iii		DUPONT
iv		SAMSUNG STARON
92	GRAPHIC FILMS	
i		3M
ii		AVERY DENNISON
iii		LIUMAR
93	ARCHITECTURAL HVAC FABRIC DUCT	
i		DUCTSOX
ii		PRIHODA
iii		FABRIC AIR
iv		ATA FLEXAIR
94	STAINLESS STEEL EV STOPS AND STREET FURNITURE	
i		OZONE
ii		DLINE
iii		APPROVED FABRICATED BY CONTRACTOR
95	CEMENT BOARD/BISON BOARD	
i		EVEREST
ii		NCL
iii		SAINT GOBAIN
iv		RAMCO
96	ADHESIVE TAPE	
i		3M
ii		NORTON
		AVERY DENNISON
97	HIGH PERFORMANCE EPOXY BASED RESIN ANCHOR SYSTEM	

UNITECH PROJECTS: FINISHING and INTERIOR WORK BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
i		BASF
ii		FOSROC
98	EPOXY MORTAR	
i		FOSROC
ii		SIKA
iii		MYK LATICRETE
99	SOLVENT BASED SILICONE REPELLENT COATING	
i		DR. FIXIT PIDILITE WR
ii		FAIRMATE
iii		FERROSCRETE
iv		MYK SCHOMBURG
100	CURTAIN TRACK	
i		WINDOWTECH
ii		DECOREX
iii		
101	RECEPTACAL BOX	
i		MAXICOM
ii		COMBINED UTILITIES
102	Magnetic Lacquered Glass Board	
103	PVC WATER STOPPER	
i		SIKA
ii		FOSROC
iii		SYNTEX
iv		
104	MOULDED DOORS	
i		CORBETT
ii		KUTTY
iii		CENTURY
105	Prefabricated Walls	
i		Everest
ii		Vishakha Industries
iii		HTL

UNITECH PROJECTS: EXTERNAL and COMMON AREA BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
EXTERNAL DEVELOPMENT		
1.1	DRAIN CHANNEL	
i		EVERLAST
ii		THERMOSET
iii		KK MANHOLE
iv		LIDCO
v		GEBERIT
1.2	KERB STONE	
i	300mm x 250mm x 100mm	BASANT BEATONS
ii		NITCO
iii		VYARA
iv		KAJARIA CERAMICS
v		KK MANHOLE
1.3	CONCRETE COBBLES / PEBBLES	
i		BASANT BEATONS
ii		VYARA
iii		NIMCO Precast Pvt. Ltd.
1.4	PAVING BLOCKS	
i		BASANT BEATONS
ii		PAVIT
iii		NITCO
iv		VYARA
v		NIMCO Precast Pvt. Ltd.
1.5	PAVING TILES	
i		BASANT BEATONS
ii		PAVIT
iii		NITCO
iv		VYARA
v		NIMCO Precast Pvt. Ltd.
1.6	CHEQUERED TILES	
i		BASANT BEATONS
ii		PAVIT
iii		NITCO
iv		VYARA
v		NIMCO Precast Pvt. Ltd.
vi		Hindustan
vii		Modern
1.7	GRASS PAVERS	
i		BASANT BEATONS
ii		NITCO
iii		VYARA
iv		NIMCO
v		Ultra
vi		Unistone

UNITECH PROJECTS: EXTERNAL and COMMON AREA BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
vii		Pavit
viii		Duracrete
1.8	TREE GUARDS	
i		VYARA
ii		NIMCO Precast Pvt. Ltd.
iii		Supplier to be approved by PMC / Developer after receipt of Samples.
1.9	SPEED BREAKERS	
i		VYARA
ii		Supplier to be approved by PMC / Developer after receipt of Samples.
1.10	DRAIN COVER / CHAMBER COVER / MANHOLE COVER	
i		EVERLAST COMPOSITES LLP
ii		PRINCE
iii		VYARA
iv		RAWJI
1.11	FRP GRATINGS / DRAINAGE MATS	
i		PRINCE PIPING SYSTEMS
ii		EVERLAST COMPOSITES LLP
iii		RAWJI INDUSTRIAL CORPORATION
1.12	CONCRETE PLANTERS	
i		VYARA
ii		Supplier to be approved by PMC / Developer after receipt of Samples.
1.13	FRP ROOFING SHEETS	
i		RAWJI
ii		Supplier to be approved by PMC / Developer after receipt of Samples.
1.14	PRECAST CONCRETE COVER	
vii		AS LOCALLY AVAILABLE
1.15	WATERPROOFING COMPOUND (Acrylic based)	
i		FOSROC
ii		McBAUCHEMIE
iii		SUNANDA
iv		PIDILITE
v		CICO
vi		STP Ltd.

UNITECH PROJECTS: EXTERNAL and COMMON AREA BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
vii		
1.16	GEOFABRIC 180 GSM	
i		OVILITE
ii		TUFLEX
iii		ROOFTEC
iv		TEXCO
1.17	WEATHERPROOF SEALANT (SURFACE & GROOVE TREATMENT)	
i		WACKER
ii		DOW CORNING
iii		Supplier to be approved by PMC / Developer after receipt of Samples.
iv		
1.18	SYNTHETIC ENAMEL PAINT	
i		ICI DULUX
ii		ASIAN PAINTS
iii		BERGER PAINTS
iv		NEROLAC
1.19	WHITE CEMENT	
i		JK CEMENT
ii		BIRLA WHITE
iii		NIHON
1.17	WATERPROOFING COMPOUND (Acrylic based)	
i		FOSROC:
ii		McBAUCHEMIE:
iii		SIKA:
iv		PIDILITE:
v		SUNANDA:
vi		
1.18	DRAINAGE CELLS / DRAINAGE BOARD	
i		OVILITE
ii		PRINCE
iii		EVERLAST
2	Expansion Joint	
i		Chowgule Construction Chemicals Pvt. Ltd.
ii		Bizzar Expansion
iii		LBH Expansion Joints India Pvt Limited
iv		NTE India Pvt. Ltd.
v		SANFIELD (INDIA) LIMITED
vi		
3	Texture Paint	

UNITECH PROJECTS: EXTERNAL and COMMON AREA BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
i		Asian Paints
ii		Nippon Paints
iii		Berger Paints
iv		Bizzar Texture & Designer Paint
4	Indoor Outdoor Sports & Play Surfaces	
i		Go Sportz
ii		Sunflex Sports Infrastructure Pvt. Ltd.
iii		P.K. Versi Turf Pvt. Ltd.
iv		Moldo Sports
v		Syncotts International
5	Parking Floor & Wall Coating	
i		Go Sportz
ii		Sunflex Sports Infrastructure Pvt. Ltd.
iii		P.K. Versi Turf Pvt. Ltd.
iv		Bizzar Paints
6	Slopping Roof Magalore Tiles	
		Supplier to be approved by PMC / Developer after receipt of Samples & Technical Specifications..
7	Self Adhesive Waterproofing Membrane	Grace India
		Texa India Ltd.
		Supplier to be approved by PMC / Developer after receipt of Samples & Technical Specifications..
8	EPDM (Roofing Membrane)	CARLILSE
		FIRE StONE
		Supplier to be approved by PMC / Developer after receipt of Samples & Technical Specifications..

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
PLUMBING & SANITARY WORK		
1	SANITARYWARE and ACCESSORIES	
i		Kohler
ii		Jaquar
iii		Parryware
iv		Roca
2	W. C. Connectors	
i		Kohler
ii		Jaquar
iii		Supreme
3	Flushing Cisterns	Jaguar
i		Kohler
ii		PARRYWARE
viii		DURALITE
4	S.S. Sinks	Nirali
i		Prestige
ii		Neelkanth
v		AMC
vi		Salem Steel
5	C P Fittings	
i		Jaguar
ii		Kohler
iii		Parryware
iv		Roca
		GEM
6	Infra red based electronic Flushing system for urinal	
i		Toshi
ii		Euronics
iii		ROCA
		Kohler
7	Hand Drier	
i		Toshi
ii		Euronics
iii		UTIC System
iv		Cera
		Kopal
8	HDPE Pipe & Fitting	
i		Jain Irrigation
ii		Supreme
iii		Oriplast

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
iv		Prince
v		EPC INDUSTRIES
vi		HASTI
vii		Duraline
9	CPVC Pipes and Fittings	
i		Astral
ii		Prince
iii		Supreme
iv		Ashirvad Pipes
v		AKG
		JAIN
10	G.I. and M.S. Pipes	
i		TATA
ii		JINDAL Hissar
iii		SAIL
v		ZENITH
11	G.I. Fittings	
i		Zoloto
ii		KS Brand
iii		DRP-M
iv		UNIK
v		Electrosteel
		RIF
		VICTAULIC
12	C.I. Soil, Waste & Vent Pipes incl. Fittings	
12a	Sand Casted Pipes	
i		NECO
ii		Saint Gobain
iii		R.I.F.
iv		SKF
13	C.I. (LA) Class Pipes & Fittings	
i		ELECTRO STEEL
ii		INDIA IRON & STEEL Co.
iii		KESORAM SPUN PIPE & FOUNDRIES
iv		NATIONAL
v		KARTAR
vi		Lanco
vii		Electrosteel
viii		Kapilansh
		RAJPURA

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
14	Stoneware Pipes	
i		
ii		Burn Pottaries
iii		Perfect Polteries
iv		ANAND
15	UPVC SWR Pipes	
i		Astral
ii		Prince
iii		Supreme
iv		AKG
v		Flowguard
16	RCC Pipes	
i		Jain
ii		KK
iii		Indian Hume Pipe Co.
iv		Premiere Prestressed Products
v		Pragati
vi		OM SPUN
vii		AKSHAY
viii		Or as approved
17	GM Gate. Globe, Check Valves	
i		Zoloto
ii		Sant Brass Metal
iii		Leader
iv		Danfoss
v		Audco
18	CI Butterfly Valves	
i		Zoloto
ii		Danfoss
iii		Kirloskar Brothers
iv		Leader
v		Advance
vi		Audco
vii		DRP
19	CI Sluice Valves	
i		Kirloskar Brothers
ii		Danfoss
iii		Intervallve
iv		IVC
v		Zoloto
vi		Advance
vii		Audco

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
20	Gully Traps	
i		Perfect
ii		RK
iii		Anand
21	Air Vent Valve	
i		Jainsons Industries (JSI)
ii		CIM
iii		DRP
		Zoloto
		RBM Italy
		TBS
22	Flanges (Table 'H'/Class 150)	
i		Aanya Steel
ii		Skyland Metals
iii		Rishabh Steel
23	Thermal Insulation	
i		K-Flex
ii		Thermaflex
iii		Armacell
24	Anti Corrosive Bitumastic Paint	
i		Asian Paints
ii		Burger Paints
iii		Shalimar
iv		ICI Dulux
		J&N
25	Electronic Digital Type Water Meter	
i		Honeywell,
ii		Electronet
iii		Aster
iv		Forbes Marshal
v		L&T
vi		Siemens
26	Geyser	
i		A.O.Smith
ii		Recold
iii		Bajaj
iv		Venus
v		Jaquar
vi		
27	CI Check Valves	
27a	Conventional Swing / Lift	
i		Kirloskar

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		IVC
27b	Wafer type	
i		Danfoss
ii		Univas
27c	Dual Plater type	
i		Advance
28	CI Manhole Frame & Cover	
i		NECO
ii		Raj Iron Foundary
iii		Bombay Iron Works
iv		Hepco
v		Kajeco
29	C.I. / G.I. Grating	
i		NECO
ii		Kapilansh
iii		Hepco
30	PUMPS	
i		Grundfos
ii		KSB
iii		CRI
iv		D.P Holland
v		WILO
vi		Kirloskar
vii		Crompton
viii		ITT
ix		Lubi
x		Ebara
xi		
31	Submersible Drainage / Sewage Pumps	
i		CRI,
ii		D.P Holland
iii		KSB
iv		Wilo
v		Grundfos
32	Water Heaters / Storage Geysers	
i		Racold
iii		Venus
iv		Bajaj
v		Crompton
		Spherehot
33	Insulation for Hot Water Piping	
33a	Fiberglass	

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
i		Twiga
ii		Afico
iii		Kimmco
		Rockwool
33b	Nitrile Rubber	
i		
iii		Vidoflex
iv		K Flex
v		Armaflex
34	Hydropneumatic System	
i		Grundfos
ii		CRI
iv		Kirloskar
v		WILO
vi		Crompton
vii		DP
viii		ITT
ix		Lubi
x		Ebara
		HBD
35	Sealant	
i		Dow corning
ii		Acqua Bond
iii		GE
iv		Pidilite
36	Pressure reducing Valves	
i		Donfoss
ii		Honeywell
iii		VB
37	Float Valve (Gunmetal) upto 40mm	
i		Donfoss
ii		Leader
iii		Kartar
iv		Sant
38	Float Valve (CI) 50mm and above	
i		Donfoss
ii		Leader
iii		KSB
39	Water Meter (Analogue)	
i		Kapstan
ii		Deshmesh
iii		Kranti

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
iv		Kent
v		Rockwin
vi		Forbes Marshall
vii		Benchtop
40	Epoxy Paint / Enamel Paint	
i		Asian Paints
ii		ICI DULUX
iii		NEROLAC
iv		BERGER
v		Jenson Nicholson
vi		Shalimar
41	DI Manholes with Frame	
i		NECO
ii		Municast
iii		Vibhor
42	Welding Electrode	
iv		ADOR
v		ESSAB
		MARUTI WELD
		GEE
43	N.A.	N.A.
44	N.A.	N.A.
45	Water Treatment Plant except Pumps and Piping	To be based on Contract terms, Technical Specifications and Approval of PMC & EIL / Unitech Limited.
i		Aquarian Systems
ii		Thermax
iii		Gujarat Ion Exchnage & Chemicals Ltd.
iv		Netsol Water
46	STP & ETP except Pump & Piping	
i		To be based on Contract terms, Technical Specifications and Approval of PMC & EIL / Unitech Limited.
ii		
iii		
47	PP Drainage pipe	
i		Astral
ii		Huliot
iii		Polo Plast
48	Underground Drainage & Sewage Pipe	
i		Supreme
ii		Astral

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
iii		Ashirwad
iv		Prince
v		AKG
vi		Finolex
49	SMC Panel Water Storage Tank	
i		Sintex Plastics
ii		Devi Polymers
iii		Amcon Fibreglass & Plastics
50	Grease Trap (Pre Fabricated Type)	
i		Aco
ii		Kessel
iii		Wade
51	Foot Rest	
i		KGM
ii		Patel
iii		PRANALI INDUSTRIES
52	FRP Manhole Cover with Frame	
i		Everlast
ii		Thermoset
iii		Supreme
iv		
53	Diesel Engine	
i		Cummins
ii		Kirloskar
iii		Greaves
54	Forged Steel Fittings	
i		JSI
ii		VS
iii		Forge
iv		DRP
55	Cast Steel Gate Valve	
i		Castle
ii		Zoloto
iii		L&T
56	Gun Metal Air release valve	
i		Sant
ii		Zoloto
iii		Castle
iv		JSI
57	Pressure switch	
i		Danfoss

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		Viking
iii		Honeywell
58	VFD for Hydropneumatic System (For RO Water Supply Distribution)	
i		Danfoss
ii		ABB
iii		Siemens
iv		Delta
59	Dosing Pump	
i		Grundfos
ii		Asia LMI
iii		E-Dose
iv		Pentair
60	Rota Meter / ORP Meter	
i		Aster
ii		Electronet
iii		Hach
iv		Forbes Marshall
61	pH Meter / Conductivity (TDS) Meter	
i		Forbes Marshall
ii		Hach
iii		Aster
iv		Electronet
v		ABS
vi		Siemens
62	Multi Grade Pressure sand Filter & Activated Carbon Filter (MSEP)/Softener Vessel (MSRL)	
i		Fabricated
63	UV with Monitor	
i		Aquarian Systems
ii		Alfa
iii		Sukrit
iv		Cole-Parmer
64	Manual Multiport Valve	
i		Initiative
ii		Prahar
iii		Pantier
65	Level Indicator	
i		Minilec,
ii		Techtral
iii		Technika

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
iv		SA Control,
v		Advance
66	Level Controller	
i		Cirrus,
ii		Advance
iii		Nivo Control
iv		Elegant
67	Solenoid Valve	
i		Honeywell
ii		Danfoss
iii		Anergy
68	Softener Resin	
i		Purolite
ii		Thermax
iii		Ion Exchange
69	R.O. Membrane	
i		GE
ii		Hydronautic
iii		DOW
iv		Torray
70	R.O. Pressure Tube	
i		Pentair Code line
ii		Gopani
iii		aventure
71	Micron Cartridge Filter	
i		Initiative
ii		Gopani
iii		Pratham
72	CIP Tank	
i		Sintex
ii		Polycon
iii		Sheetal
73	Dosing tank (chemical grade)	
i		Sintex
ii		Polycon
iii		Sheetal
		Frontier
74	Overhead Tank Controlling System [Motorized Valve / Solenoid Valve / Level Sensor & Assembled Level Control Panel]	
i		Lehry Instrumentation

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		AIP Valve
iii		Merson
75	Air Blowers	
i		Aquarian Systems
ii		Everest
iii		Kay International
76	Centrifuge	
i		Apollo
ii		Snfi
iii		DFS
77	Centrifuge Feed Pump	
i		Roto Pump
ii		UT Pump
78	Float Valve	
i		Leader
ii		Sant
iii		CIM
79	Magnetic Flow Meter / Electromagnetic Type Flow Meter	
i		Korne Marshall
ii		Ztech
iii		LIFA
iv		Cirus
v		Yokogawa
80	Online Digital Rotometer/Flow Meters/pH meter/DO meter	
i		Aster
ii		Electronet
iii		Gtech
81	Actuators	
i		Marsh
ii		L&T
iii		Honeywell
82	Diffusers	
i		Aquarian Systems
ii		MM Aqua
iii		Scogen
83	UF Membrane	
i		GE
ii		Toray
iii		Hydranautics
iv		Qua

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
84	PLC System	
i		Allen Bradely
ii		Honeywell
iii		Delta
iv		Orman
85	Bar Screens [Coarse & Fine]	
i		Aquarian Systems
ii		Jash
iii		Johnson
86	FRP Dual Media Filter for ETP & Softener Vessel (FRP)	
i		Adventure
ii		Pentair (Structure)
iii		Aquanomics
87	Online Monitoring System	
i		Xylem
ii		Hach
iii		KSP Hydro (Hemera)
88	Agiatore/Clarifier	
i		Aquarian Systems,
ii		Alicon
iii		Rotomotive
iv		Dorrolie
v		Coron
89	Ozonator	
i		Ozonics
ii		Creative
iii		ORA IPL
90	Electrical Hot Water Generator	
i		Rapid Cool
ii		National
iii		KEPL
iv		Ross
91	Dial Thermometers	
i		H-Guru
ii		Fiebig
iii		waree
92	Hot Water Re Circulation Pump / Hot Water Return Pump	
i		ITT Lowara
ii		Willo

UNITECH PROJECTS: PHE APPROVED BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
iii		Grundfos
93	Plate Heat Exchanger	
i		Kalvion,
ii		Alfa Laval
iii		Tranter
iv		Xylem
v		GEA
94	Softener with Brine Tank	
i		Thermax
ii		Ion Exchange
iii		Doshi ion exchange
viii		SOLIMPEKS
95	D.I. pipe	Jindal Saw
		Lanco
		Electrosteel
96	Foot valve with Strainer	Sant
		Kartar
97	Y type suction strainer	Dasmesh
		Gradprit
		Kartar
98	Solar Water Heating system incl. Panels incl. Flat Plate Solar Collector	
		Comfonomics
		TATA BP
		RACOLD
99	Submersible Sump Pumps (Drainage & Sewage)	
		Grundfos
		Xylem
		Wilo
		KSB

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
1	LED Tube/Lamp/Bulb	
i		Philips
ii		Havells
iii		Crompton
iv		Toshiba
v		Osram
vi		GE
vii		Wipro
2	LED Internal Light Fixture	
i		Philips
ii		Havells
iii		Crompton
iv		Toshiba
v		Osram
vi		Wipro
vii		Bajaj
viii		Decon
ix		GE
3	LED Street Light Fittings	
i		Philips
ii		Havells
iii		Wipro
iv		Crompton
v		Bajaj
4	LED Flood Light	
i		Philips
ii		Havells
iii		Wipro
iv		Crompton
5	LED Pathway Light	
i		Philips
ii		Havells
iii		Wipro
iv		Crompton
v		HPL
6	LED Gate Light	
i		Philips
ii		Havells
iii		Wipro
iv		Crompton
v		HPL
7	LED Underwater Light	
i		Philips
ii		Havells
iii		Wipro

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
iv		Crompton
v		HPL
8	Ceiling Fans	
i		Crompton
ii		Orient
iii		Havells
iv		Khaitan
v		Usha
vi		Bajaj
9	Exhaust Fans	
i		Crompton
ii		Orient
iii		Havells
iv		Khaitan
v		Usha
vi		Bajaj
10	Modular Switch, Socket & Sheet	
i		Schneider Opal
ii		Wipro Stylus +
iii		Legrand Myrius
iv		MK Wrap round plus
v		Anchor Vision
11	Modular TV, Telephone & Data Socket	
i		Schneider Opal
ii		Wipro Stylus +
iii		Legrand Myrius
iv		MK Wrap round plus
v		Anchor Vision
12	Industrial Sockets	
i		Schneider
ii		Hensel
iii		Legrand
iv		Neptune
v		HPL
vi		Havells
13	DB, MCB, RCCB, RCBO, ELCB	
i		Schneider
ii		Siemens
iii		ABB
iv		L&T
v		Wipro
vi		Hager
vii		Legrand
viii		Havells
14	MPCB	

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
i		ABB
ii		L&T
iii		Schneider
iv		Siemens
15	HRC Switch Fuse Units	
i		Schneider
ii		Siemens
iii		ABB
iv		L&T
v		Wipro
vi		Hager
vii		Legrand
viii		Havells
16	Lamp Holder	
i		Havells
ii		Bajaj
iii		wipro
iv		Anchor
v		HPL
17	Video door phone	
i		Zicom
ii		Legrand
iii		Panasonic
iv		Hikvision
v		Honeywell
18	Copper Wires : 1100V/660V Grade FRLS	
i		Finolex
ii		Polycab
iii		KEI
iv		Havells
v		RR cable
vi		Skytone
19	RG6, RG11 Coaxial T V & Telephone Cable	
i		Finolex
ii		Polycab
iii		Delton
iv		KEI
v		Rallison
vi		Lapp
vii		Belldon
viii		D Link
20	CAT 6 Cable	

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
i		Finolex
ii		Dlink
iii		Polycab
iv		Legrend
v		Belden
vi		AMP
vii		Systimax
viii		Avaya
21	CAT 6 I/O Socket	
i		Dlink
ii		Lucent
iii		Molex
iv		Legrend
v		Belden
vi		AMP
vii		Systimax
xi		Avaya
22	PVC Conduits & Accessories	
i		Polycab
ii		AKG
iii		BEC
iv		Precision
v		Finolex
vi		Sudhakar
23	MS Black enameled /galvanised ERW conduit	
i		BEC
ii		Steel Craft
ii		AKG
24	MS PIPES and GI PIPES	
i		JINDAL
ii		TATA
iii		SURYA
iv		SAIL
25	XLPE Cables & Accessories	
i		Polycab
ii		Havells
iii		Finolex
iv		KEI
v		Cables corporation of India
vi		RPG Cables Ltd.
vii		Universal cables Ltd.
viii		Gemscab Industries Ltd
ix		Gloster cables
x		Ravin cables pvt ltd

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
xi		
26	Control cable/ Fire survival, Communication Cables	
i		Polycab
ii		Havells
iii		Finolex
iv		KEI
v		Laap
vi		Delton
vii		Fusion Polymer
viii		Rallison
27	Cables Glands & Lugs	
i		Dowell
ii		Comet
iii		Centurion
iv		Bentec
v		Jainson
vi		Baliga lighting eqpts ltd
vii		FCG Power IND Pvt Ltd
28	Bimetalic Cable Lug	
i		Comet
ii		Cosmos
iii		Dowells
iv		Jainsons
29	PVC Glands	
i		Comet
ii		Dowells
iii		Gripwel
v		Jainsons
vi		HMI
30	Aluminum Raceways	
i		Jindal
ii		Bentec
iii		Indiana
iv		HILTI
v		Gripple
vi		Legrand
vii		Slotco
viii		MEM
31	MS/GI Cable Trays & Raceways	
i		Indiana
ii		Ricco
iii		Pilco
iv		Hi Reach
v		Slotco

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
vi		SPC Electrotech Pvt. Ltd.
32	Load break switch	
i		Legrand
ii		L&T
iii		HPL
iv		Panasonic
v		Siemens
vi		Havells
vii		ABB
33	Changeover Switch	
i		Siemens
ii		Schneider
iii		Socomec
iv		L&T
v		ABB
vi		Havells
vii		HPL
34	ATS	
i		Siemens
ii		Schneider
iii		Socomec
iv		L&T
v		ABB
35	ACCL	
i		Pork device
ii		Havells
iii		Salzer
iv		L & T
v		Electron
36	Electrical Measuring Meters	
i		L&T
ii		HPL
iii		Siemens
iv		Socomec
v		Neptune
vi		Conzerv
vii		Schneider
viii		Secure
37	Capacitors	
i		L&T
ii		Epcos
iii		Neptune
iv		Schneider
v		Siemens
38	Lightning Arrestor	

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
i		Altec
ii		Duval Messien
iii		ABB
iv		Erico
v		Crompton
vi		Jmv Lps Pvt.Ltd
vii		Indelac
viii		Obo Betterman
39	Main LT PANEL and AFC Panel	
i		Tricolite
ii		Adlec System
iii		Advance Panel & Switchgear Pvt. Ltd. New Delhi
iv		Jakson
v		Ambit Switch gears- Noida
vi		Sudhir Power
vii		Indian Electrical
viii		L&T
ix		SPC Electrotech Pvt. Ltd.
40	L.T. Feeder Pillar	
i		Tricolite
ii		Adlec System
iii		Advance Panel & Switchgear Pvt. Ltd. New Delhi
iv		Jakson
v		Ambit Switch gears- Noida
vi		Sudhir Power
vii		Indian Electrical
vii		L&T
viii		SPC Electrotech Pvt. Ltd.
41	AIR Insulated / Sandwich Bus Duct & Rising Mains	
i		C&S
ii		L & T
iii		Schneider
iv		Zucchini Legrand
v		Adlec System
vi		Tricolite
vii		Jakson
viii		Advance Panel & Switchgear Pvt. Ltd. New Delhi
ix		Zeta
x		SPC Electrotech Pvt. Ltd.
42	Metering Cubicle	
i		Tricolite

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
ii		Adlec System
iii		Advance Panel & Switchgear Pvt. Ltd. New Delhi
iv		Jakson
v		Ambit Switch gears- Noida
vi		Sudhir Power
vii		Indian Electrical
43	HT Panel Indoor/Out door VCB/RMU	
i		Siemens
ii		Schneider
iii		L & T
iv		Crompton
v		ABB
vi		SPC Electrotech Pvt. Ltd.
44	11KV isolator & D.O. fuse.	
i		Topaz
ii		Siemens
iii		ABB
iv		L&T
v		Schneider
vi		GE
45	Distribution Transformer (<i>Local DISCOM Authority approved make shall be used</i>)	
i		Siemens
ii		ABB
iii		Kirloskar
iv		Crompton
v		VoltAmp
vi		Schneider Electric
vii		Universal
viii		Vijay Electricals
46	D G Set- Engine	
i		Kirloskar
ii		Cummins
iii		Cromptons
iv		Perkins
v		Caterpillar
47	D G Set- Alternator	
i		Stamford
ii		Kirloskar
iii		Leroy Somer
iv		Caterpillar
v		Trident

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
vi		Toyo Donkey power
48	Elevator and Escalator	
i	(<u>BIDDERS TO ENSURE</u>: If a particular brand of lift / escalator is already installed in any tower / project / cluster, then the same make of lift / escalator shall be used for rest of the towers in that project / phase / cluster.)	OTIS
ii		KONE
iii		JOHNSON
iv		As approved by PMC/EIL/UL
49	Water Pumps	
i		KIRLOSKAR
ii		CROMPTON
iii		GRUNDFOS
iv		WILO
v		EBARA
vi		Lubi
50	Solar Water Heating Systems	
i		COMFONOMICS
ii		TATA SOLAR
iii		SURYA
iv		BHEL
v		Solarhart
vi		Photon
vii		BIPSUN
viii		RACOLD
ix		Solimpeks
x		KK Tech Eco Product Pvt. Ltd.
xi		Ecoguard
xii		Composite Nirman Materail Pvt. Ltd.
51	Air Source Heat Pump	
i		Aquarian Systems
ii		Phillips
iii		Murphy
iv		SYSKA
v		ENSYS
vi		A.O. Smith
vii		STIEBEL ELTON
52	Insulating Mats- LT & HT Rating	
i		Jyoti
ii		Padmini
iii		Premier Polyfilm
iv		Tata Rubber Corporation

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
v		Suntex
53	Fire Sealent and Fire Retardent Paint	
i		3M India
ii		Hilti
iii		OBO Betterman
iv		Starvac Flammadar
v		M Seal
54	Surge protection device	
i		JMV
ii		DHEN
iii		OBO
iv		MERSEN
55	Solar PV Cleaning System	
i		OORJA
ii		SOLBRIGHT
iii		ECOPPIA
56	Solar Inverter/Power conditioning unit	
i		Solis
ii		Delta
iii		Tata Power
iv		Havells
v		Luminous
vi		BHEL
vii		Moaserbear
57	SPV Modules-Mono Perc	
i		Reneways
ii		Adani
iii		Tata Power
iv		Jakson
v		BHEL
vi		Moaserbear
58	SPV Modules Bifacial	
i		Reneways
ii		Adani
iii		Tata Power
iv		Jakson
v		BHEL
vi		Moaserbear
59	FUEL CELL SYSTEM	
i		BLOOM ENERGY
ii		FC TECNRY
60	EXIT SIGNAGES	
i		Legrand
ii		ABB
iii		Philips

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
iv		MK
v		D-Lite
vi		Cease Fire
vii		Cooper
ix		Bajaj
61	HDPE - Pipe	
i		Duraline
ii		Rex Poly Extrusion
iii		Tirupati Plasomatics
62	Lighting Poles	
i		Bajaj
ii		Bombay Tubes & poles
iii		Surya
iv		Philips
v		Wipro
vi		Keselec
vii		BPP pole
63	Anchor Fastner	
i		Fischer
ii		Hilti
iii		Power fastener
64	Occupancy Sensors	
i		Honywell
ii		Schneider
iii		Johnson
iv		Siemens
v		Wipro
vi		Philips
65	Lighting Control Equipment/ Dimmers	
i		Lutron
ii		Crystron
iii		Schneider
iv		Wipro
v		Legrand
vi		Panasonic
66	Aviation Obstruction Light LED Type	
i		Bajaj
ii		Philips
iii		Wipro
iv		Havells
v		Instapower Ltd
67	Terminal Blocks	
i		Connectwell
ii		Elmax
iii		Wago

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
68	POP UP Boxes	
i		Legrand
ii		MK
iii		ABB
69	Push Button & Indicating Lamp	
i		L&T
ii		Schneider
iii		Kaycee
iv		ABB
v		Siemens
70	66kV and 33 KV OUTDOOR SWITCHYARD PACKAGE	
i		ABB
ii		CG Power and Industrial Solutions LTD
iii		L&T
iv		SIEMENS
v		SREX POWER INDIA PVT. LTD.
vi		STERLING & WILSON INDIA
71	66kV and 33 KV GIS (Indoor)	
i		ABB INDIA
ii		SCHNEIDER ELECTRIC INDIA
iii		SIEMENS
72	CATHODIC PROTECTION SYSTEM	
i		BSS TECH CP INDIA PVT. LTD.
ii		CATHODIC CONTROL COMPANY
iii		CONSULTECH CATHODIC PROTECTION ENGRS & INDIA
iv		CORROSION CONTROL SERVICES PVT. LTD.
73	ELECTRICAL CONTROL SYSTEMS (MICRO-GRID / SCADA)	
i		HONEYWELL
ii		DEIF INDIA PVT LTD
iii		ROCKWELL AUTOMATION
iv		SCHNEIDER ELECTRIC INDIA PVT LTD
v		SIEMENS
74	NEUTRAL GROUNDING RESISTORS-H.V.	
i		IRESKO ELECTRICALS PVT. LTD. INDIA
ii		NATIONAL SWITCHGEARS

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
iii		RESITECH ELECTRICALS PVT LTD
iv		RSI SWITCHGEAR PVT LTD
v		S.R. NARKHEDE ENGINEERING PVT LTD
75	Protection Relays	
i		ABB
ii		Alstom
iii		Easun Reyrolle
iv		L&T
v		Schneider
vi		Areva
76	AUX. / Bimetalic Relays	
i		ABB
ii		Schneider
iii		Easun Reyrolle
iv		L&T
v		Siemens
77	Flame Proof Panel Light LED & Accessories	
i		Baliga Lighting Eqpts Ltd.
ii		FCG Power Industries
iii		Flame proof Eqpts Pvt.Ltd
		SPC Electrotech Pvt. Ltd.
78	Instrument Transformers CT & PT -MV	
i		Gilbert & maxwell
ii		Kappa
iii		L&T
iv		AE
v		Matrix precise
79	Instrument Transformers CT & PT -HV (Local DISCOM Authority approved make shall be used)	
i		Kappa
ii		Pragati
iii		Schnieder Electric
iv		Siemens
v		ABB
vi		Kirloskar
vii		Crompton
viii		VoltAmp
ix		Universal
x		Vijay Electricals
80	Fuses	
i		Cooper

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
ii		L&T
iii		Siemens
iv		ABB
v		Schneider
vi		GE
81	Cable Termination & jointing kit(Heat Shrinkable)	
i		3M India
ii		Raychem
iii		Yamuna gases & Chemicals
iv		M Seal
82	Contactors	
i		ABB
ii		C & S
iii		L & T
iv		Schneider
v		Siemens
vi		GE
83	Selector Switches	
i		Kaycee
ii		L & T
iii		Siemens
iv		Salzer
v		Neptune
84	Air Circuit Breaker- ACB	
i		Siemens - 3WL
ii		Schneider- Masterpact
iii		L & T- U power
iv		ABB -E max
v		GE
vi		C&S Electric limited
85	MCCB	
i		L&T D sine
ii		Schneider compact
iii		Siemens VL
iv		ABB Tmax
86	High Mast Lighting System	
i		Bajaj
ii		CG Power
iii		Philips
87	U.P.S. System	
i		APC
ii		Emerson
iii		Delta
iv		Numeric

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
v		Eaton
vi		Toshiba
88	Batteries	
i		Exide
ii		Amaron
iii		Amar Raja
iv		Panasonic
v		Amco
vi		HLB
vii		Hitachi
89	Battery Charger	
i		Max
ii		Mohamai
iii		Amar Raja
iv		HLB
v		Chloride Power System
90	Switch Board Fixed for Package equipments	
i		Adlec
iii		Advance Panel
iv		Tricolite
v		Jackson
vi		Neptune
vii		SPC Electrotech Pvt. Ltd.
91	Gang Operated air breaker Switch unit 11KV	
i		Pactil
ii		Isotech
iii		Mitsubishi
92	11 KV pallet type lighting accessories	
i		BHEL
ii		WSI
iii		PACTIL
93	11 KV Insulator	
i		BHEL
ii		WSI
iii		PACTIL
94	11 KV Elastomeric Rubber Floor Mat	
i		Suntax
ii		Tycoon
iii		Polymax
95	Time Switches	

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
i		L&T
ii		Schneider
iii		Siemens
iv		Legrand
96	Chemical Earthing	
i		Altec
ii		Erico
97	Butterfly Valves	
i		Audco
ii		Advance
iii		Sant
98	Balanceing Valve	
i		Advance
99	Ball Valve/Gate Valve	
i		Audco
ii		Advance
100	Check valve(NRV)	
i		Audco
ii		Advance
101	Flexible Coupling with SS guard	
i		Resistoflex
ii		Kanwal
102	Strainer for water line	
i		Sant
ii		Venus
iii		Emerald
103	Pressure Guage	
i		Fiebig
ii		H.Guru
104	Temperature Gauge	
i		Fiebig
ii		H.Guru
105	Insulation	
i		UP Twiga
ii		Lloyd
iii		Rock Wool
106	Rotary Gear Pump	
i		Rotodel
ii		Delta
107	Bulk oil Tank	
i		Indo Asiatic
ii		Rapid Cool
iii		Raunaq Enterprises
108	Flame proof motor	
i		Crompton

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
ii		KEC
109	Red Oxide Primer Paint	
i		Shalimar
ii		Asian
110	Rust Preventing Polymeric tape	
i		Pypekote
111	Flow meter (Diesel)	
i		Kent
ii		AquaMetro
112	Bucket/ Y -Strainer	
i		Emerald
ii		Stainwell
iii		Aquo Metro
113	Adaptor	
i		kayess
114	Stainless Steel Bellow	
i		Kanwal
ii		Alfa flexi
115	Flame Proof Level switch	
i		
ii		Minilec
iii		Veksler
116	Fire Extinguisher	
i		Minimax
ii		Newage
iii		Superex
117	MS Conduit Accessories	
i		Sharma
ii		Rama
iii		Noble
118	Hume Pipe	
i		Pragati
ii		Daya Spun
iii		Jain Spun
119	RCC Frame & Cover	
i		KK Manhole
120	Pumps	
i		Grundfos
ii		KSB
iii		Wilo
iv		Mather Platt
v		Xylem
vi		Kirloskar
vii		Armstrong
viii		Crompton

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
ix		Lubi
121	Electrical Motors	
i		Siemens
ii		ABB
iii		KSB
iv		Crompton
v		Mather & Platt
vi		Grundfos
vii		Kirloskar
viii		Lubi
ix		Marathon
122	CI Y Strainer	
i		Sant
ii		Kartar
iii		Zoloto
iv		Emerald
v		AIP
vi		DRP
vii		DS Engg.
123	Smoke Detector	
i		Siemens
ii		Securiton
iii		Honeywell
iv		BOSCH
v		TYCO
vi		Daksh
124	Heat Detector	
i		Siemens
ii		Securiton
iii		Honeywell
iv		BOSCH
v		TYCO
vi		Daksh
125	MCP	
i		BOSCH
ii		Honeywell
iii		Siemens
iv		TYCO
v		Johnson Control
vi		Notifier
vii		Daksh
viii		Copper
126	Sound / Strobe	
i		BOSCH
ii		Honeywell

UNITECH PROJECTS: ELECTRICAL WORK BRANDS

Sr. No..	Material Name	Middle Income Group (MIG)
1	2	3
iii		Siemens
iv		TYCO
v		Johnson Control
vi		Copper
vii		Daksh
127	Response Indicator	
i		BOSCH
ii		APOLLO
iii		Honeywell
iv		Siemens
v		TYCO
vi		Johnson Control
vii		Daksh
128	Controller with Amplifier for Fire Alarm	
i		BOSCH
ii		TYCO
iii		Honeywell
iv		Henriche
v		Siemens
vi		Johnson Control
129	Goose neck Microphone	
i		BOSCH
ii		Honeywell
iii		Henriche
130	Speaker	
i		BOSCH
ii		Honeywell
iii		Henriche
iv		Siemens
v		TYCO
vi		Johnson Control
131	Wooden Rack	
i		BOSCH
ii		Honeywell
iii		Henriche
132	Fire Extinguishers	
i		Ceasefire
ii		Firex
iii		Safex
iv		New Age
v		Minimax
vi		Kalpex
vii		Kanex

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
FIRE LIFE & SAFETY WORK		
1	Fire Alarm Control Panel	
i		Siemens
ii		Securition
iii		Honeywell
iv		JCI
v		TYCO ANSUL
vi		COOPER
2	G I Pipes	
i		Jindal- Hissar
ii		TATA
iii		SAIL
iv		
3	G I Fittings	
i		Zoloto
ii		KS Brand
iii		DRP-M
iv		UNIK
v		Electrosteel
vi		RIF
vii		
4a	M S Pipes	
i		TATA
ii		Jindal Hissar
iii		SAIL
iv		Zenith Birla
v		
4b	MS FITTINGS	
i		TATA
ii		Jindal Hissar
iii		SAIL
iv		Unik
v		Zoloto
vi		DRP
vii		
5	M S Structural Elements	
i		TATA
ii		Jindal
iii		SAIL
iv		Unik
6	SS Fire Hydrant Landing Valve	
i		Safex
ii		New Age
iii		Minimax

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
iv		Ceasefire
v		Padmini
vi		Life Guard
vii		
7	Flexible Hose with Gunmetal Male & Female coupling	
i		New Age
ii		Safex
iii		Ceasefire
iv		Life Guard
v		Minimax
vi		
8	Fireman's Axe	
i		New Age
ii		Ceasefire
iii		Safex
iv		Minimax
v		
vi		
9	Fire Hose Reel with drum, hanging bracket etc.	
i		New Age
ii		Ceasefire
iii		Safex
iv		Minimax
v		Dunlop
vi		
vii		
10	Fire Hose Cabinet	
i		New Age
ii		Ceasefire
iii		Superex
iv		Safex
v		Minimax
vi		
vii		
viii		
11	Butterfly Valve	Advance
i		Intervalve
ii		Sant
iii		Audco
iv		Kirloskar
v		
vi		Zoloto

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
12	CI Dual Plate Check Valve	
i		Zoloto
ii		Leader
iii		Sant
iv		Audco
v		Advance
vi		Kirloskar
vii		
viii		
ix		
x		
13	Control Valve with turbine type automatic Alarm	
i		HD
iii		Viking
iv		TYCO
v		Mather & Platt
vi		New Age
vii		
viii		
14	Sprinkler Head-Pendant / Sideall/ Upright	
i		TYCO
ii		HD
iii		Viking
iv		
v		
vi		
15	Flexible Pipe	
i		HD
ii		Minimax
iii		Viking
iv		Resistoflex
v		
vi		
vii		Life Guard
16	Short Branch Pipe	
i		New Age
iv		Minimax
v		Safeguard
vi		Ceasefire
vii		
17	Ball Valve	
i		Zoloto

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		Sant
iii		Audco
iv		Advance
v		
vi		
18	Gun Metal Gate Valve	
i		Zoloto
ii		Sant
iii		Audco
iv		Advance
v		DRP
vi		
vii		
19	SS dial type Pressure Gauge	
i		H Guru
ii		Fiebig
iii		Waree
20	Pumps	
i		Wilco
ii		KSB
iii		Kirloskar
iv		XYlem
v		
vi		
vii		
viii		
ix		
21	CI Y Strainer	
i		Sant
ii		Kartar
iii		Zoloto
iv		Emerald
v		DRP
22	Electric Motors	
i		Crompton
ii		KSB
iii		ABB
iv		Mather & Platt
v		Grundfos
vi		Kirloskar
vii		Lubi
viii		
ix		Marathon
23	Smoke Detector	
i		Honeywell

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		Notifier
iii		EST
iv		Johnson Control
v		Copper
vi		
vii		
24	Heat Detector	
i		Honeywell
ii		Notifier
iii		EST
iv		Johnson Control
v		Copper
vi		
25	MCP	
i		
ii		Notifier
iii		EST
iv		Honeywell
v		Siemens
vi		TYCO
vii		Johnson Control
viii		Copper
26	Sound / Strobe	
i		Notifier
ii		EST
iii		Honeywell
iv		Siemens
v		TYCO
vi		Johnson Control
vii		Copper
27	Response Indicator	
i		AGNI
ii		APOLLO
iii		Notifier
iv		EST
v		Honeywell
vi		Siemens
vii		TYCO
viii		Johnson Control
ix		Copper
28	Controller with Amplifier for Fire Alarm	
i		TYCO
ii		HD
iii		Honeywell
iv		Siemens

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
v		Johnson Control
vi		Copper
vii		
29	Goose nech Microphone	
i		BOSCH
ii		Honeywell
iii		Henriche
30	Speaker	
i		BOSCH
ii		Honeywell
iii		Henriche
iv		Siemens
v		TYCO
vi		Johnson Control
vii		Copper
31	Wooden Rack	
i		BOSCH
ii		Honeywell
iii		Henriche
32	Fire Extinguishers	
i		Ceasefire
ii		Firex
iii		Safex
iv		New Age
v		Minimax
vi		
vii		
viii		
33	Armoured Cables	
i		Polycab
ii		Finolex
iii		KEI
iv		Havels
v		Rallison
vi		Lapp
vii		Belldon
viii		Delton
ix		KEI
x		Skytone
34	FRLS Cable	
i		Polycab
ii		Finolex
iii		KEI
iv		Havels
v		Rallison

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
vi		Lapp
vii		Belldon
viii		Delton
ix		KEI
x		Skytone
35	Anti Vibration Mounting Pads	
i		Dunlop
ii		Resistoflex
iv		Kanwal
v		Easyflex
36	Anti corrosive pipe treatment (As per IS:10221 – 1982)	
i		Pypkote (IWL)
ii		Tapex
iii		Coatek
iv		Makpolycoat
37	Mechanical Seal	
i		Sealol
ii		Burgman
iii		Hindustan
38	Dash Fasteners	
i		Hilti
ii		Fisher
39	Paint Primer	
i		Asian Paints
ii		Berger
iii		Nippon Paint
iv		ICI Dulux
40	Enamel Painting of pipes etc.	
i		Asian Paints
ii		Berger
iii		ICI Dulux
iv		Nippon Paint
v		
vi		
41	Welding Electrodes	
i		Adani
iii		ESAB
iv		Advani
v		Ador
42	Control Valve	
i		HD
iii		Viking
iv		Tyco
v		Mather & Platt

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
43	Deluge Valve	
i		HD
ii		Monsher
iii		Viking
44	Water Curtain Nozzle	
i		HD
ii		Monsher
iii		Viking
45	Powder coated sprinkler rosette	
i		HD
ii		Monsher
iii		Viking
iv		Tyco
v		Newage
46	Concealed Sprinkler	Tyco
i		HD
ii		Viking
iii		Newage
47	Water Flow Switch	
i		System Sensor
ii		Viking – potter
iii		
48	Inspecting & Testing Assembly	
i		Giacomini
ii		HD
iii		Tyco
49	UL & FM Approved grooved fittings :	
i		Victaulic
ii		Viking
iii		Tyco
50	Ultrasonic Flow Meter	
i		ABB
ii		Endress Houser
iii		Siemens
51	Temper Switch	
i		Danfoss
ii		Viking
iii		Honeywell
52	Server Room Flooding – Total Flooding	
i		KalpEX
ii		Sevo
iii		Siemens
53	Online Monitoring System	
i		Comfonomics
ii		Xylem

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
iii		Hach
iv		KSP Hydro (Hemera)
54	NETWORK REPEATER PANEL	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS-SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
55	SLC / NETWORK / FIBER CARD	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
56	MULTISENSORY / ADVANCED MULTI-SENSOR DETECTOR	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
57	THERMAL DETECTOR	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
58	PHOTOELECTRIC DETECTOR	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
59	FLAME DETECTOR	
i		EDWARD-EST

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
60	LASER DETECTORS	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
61	IONIZATION DETECTORS	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
62	DUCT DETECTORS	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
63	BEAM DETECTOR	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
64	ASPIRATING DETECTOR	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
vii		Johnson Control
65	FAULT ISOLATORS	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
66	MONITOR / CONTROL / RELAY MODULES	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
67	TWO WAY PHONE / JACK	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
68	DIGITAL VOICE CONTROLLER / AMPLIFIER	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
69	BATTERY	
i		AMARON
ii		EXIDE
iii		LUMINOUS
70	POWER SUPPLY	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
vi		Tyco
vii		Johnson Control
viii		
71	GRAPHIC SOFTWARE	
i		EDWARD-EST
ii		NOTIFIER
iii		CERBERUS- SIEMENS
iv		HONEYWELL-XLS-3000-XL
v		SIMPLEX
vi		Tyco
vii		Johnson Control
72	PA SERVER	
i		HONEYWELL
ii		MERSHON
iii		ATEIS
iv		EDWARD
v		NOTIFIER
vi		Cooper
vii		
73	NETWORK AUDIO ADAPTOR	
i		HONEYWELL
ii		MERSHON
iii		ATEIS
iv		EDWARD
v		NOTIFIER
vi		Cooper
vii		
74	IP CONTROLLER	
i		HONEYWELL
ii		MERSHON
iii		ATEIS
iv		EDWARD
v		NOTIFIER
vi		Cooper
vii		
75	AMPLIFIER	
i		HONEYWELL
ii		MERSHON
iii		ATEIS
iv		EDWARD
v		NOTIFIER
vi		Cooper
vii		
76	ROUTER	
i		HONEYWELL

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
ii		MERSHON
iii		ATEIS
iv		EDWARD
v		NOTIFIER
vi		Cooper
vii		
77	CALL STATION	
i		HONEYWELL
ii		MERSHON
iii		ATEIS
iv		EDWARD
v		NOTIFIER
vi		Cooper
vii		
78	CEILING SPEAKER	
i		HONEYWELL
ii		MERSHON
iii		ATEIS
iv		EDWARD
v		NOTIFIER
vi		Cooper
vii		
79	WALL SPEAKER	
i		HONEYWELL
ii		MERSHON
iii		ATEIS
iv		EDWARD
v		NOTIFIER
vi		Cooper
vii		
80	CD PLAYER	
i		SONY
ii		PANASONIC
iii		
81	OFC CABLE	BOSCH
i		POLYCAB
ii		SCHNEIDER
iii		BELDEN
iv		D Link
v		SYSTEMAX
vi		Legrand
vii		AMP
viii		Siemon
ix		R&M
82	FIRE SURVIVAL CABLE	

UNITECH PROJECTS: FLS BRANDS

Sr. No.	Material Name	Middle Income Group (MIG)
1	2	3
i		BELDEN
ii		RR KABEL
iii		POLYCAB
iv		RAMCRO
v		LEONI
vi		FR-TECH
vii		RALLISON
viii		FINOLEX
ix		DELTON
83	MS / GI CONDUIT	
i		BEC
ii		AKG
iii		STEEL KRAFT
iv		TATA
v		JINDAL
vi		NIC
vii		
84	COMPUTER	
i		HP
ii		DELL
iii		IBM
85	MONITOR	
i		
ii		SAMSUNG
iii		LG
iv		PHILLIPS
86	PRINTER	
i		HP
ii		EPSON
iii		COMPAQ
		CANON
87	DIESEL ENGINE	
i		Greaves (CGL)
iii		CATERPILLAR
iv		Kirloskar
v		Cummins

DRAWINGS

Sector 117, NOIDA PACKAGE 3 (Phase 1,2 &3) LANDSCAPE

TENDER DRAWINGS

PHASE - 1

S. NO.	DESCRIPTION	DRAWING NO.
1	Combined Co-Ordinated Services Plan	L-SCAPE - SEC 117 - NOIDA - 026
2	Site Plan for Sewer Layout	L-SCAPE - SEC 117 - NOIDA - 026
3	Site Plan for Strom Layout	L-SCAPE - SEC 117 - NOIDA - 026
4	Site Plan for Water Supply Layout	L-SCAPE - SEC 117 - NOIDA - 026
5	Site Plan for Fire Fighting Layout	L-SCAPE - SEC 117 - NOIDA - 026
6	Setting Out Plan - Dimension - Refrence Lines	L-SCAPE - SEC 117 - NOIDA - 027 - R1
7	Swimming Pool Detail	L-SCAPE - SEC 117 - NOIDA - 026 - R1
8	Tower Entrance Detail	L-SCAPE - SEC 117 - NOIDA - 101 - R2
9	Grading and Surface Drainage Plan	L-SCAPE - SEC 117 - NOIDA - 012 - R1
10	Sub - Surface Drainage Plan	L-SCAPE - SEC 117 - NOIDA - 014 - R2
11	Planting and Lighting Plan	L-SCAPE - SEC 117 - NOIDA - 015 - R2
12	Material Plan	L-SCAPE - SEC 117 - NOIDA - 016 - R1
13	Sections - 4	L-SCAPE - SEC 117 - NOIDA - 020 - R1
14	Sections - 3	L-SCAPE - SEC 117 - NOIDA - 019 - R1
15	Sections - 2	L-SCAPE - SEC 117 - NOIDA - 018 - R1
16	Sections - 1	L-SCAPE - SEC 117 - NOIDA - 017 - R1
17	Typical Detail 01	L-SCAPE - SEC 117 - NOIDA - 021 - R1
18	Typical Detail 02	L-SCAPE - SEC 117 - NOIDA - 022 - R1
19	Key Plan	L-SCAPE - SEC 117 - NOIDA - 011 - R1
20	Trellis Details - 01	L-SCAPE - SEC 117 - NOIDA - 023 - R1
21	Trellis Details - 02	L-SCAPE - SEC 117 - NOIDA - 024 - R1

PHASE - 2

1	Setting Out Plan - Dimension - Refrence Lines	L-SCAPE - SEC 117 - NOIDA - SKETCH
2	Setting Out Plan - Dimension - Refrence Lines	L-SCAPE - SEC 117 - NOIDA - SKETCH
3	Key Plan	L-SCAPE - SEC 117 - NOIDA - 031 - R1
4	Key Plan	L-SCAPE - SEC 117 - NOIDA - 033 - R1
5	Grading and Surface Drainage Plan	L-SCAPE - SEC 117 - NOIDA - 032 - R1
6	Sub - Surface Drainage Plan	L-SCAPE - SEC 117 - NOIDA - 033 - R1
7	Planting and Lighting Plan	L-SCAPE - SEC 117 - NOIDA - 036 - R1
8	Material Plan	L-SCAPE - SEC 117 - NOIDA - 036 - R1
9	Sections - 1	L-SCAPE - SEC 117 - NOIDA - 037 - R1
10	Sections - 2	L-SCAPE - SEC 117 - NOIDA - 038 - R1
11	Typical Detail 01	L-SCAPE - SEC 117 - NOIDA - 038 - R1
12	Typical Detail 02	L-SCAPE - SEC 117 - NOIDA - 039 - R1
13	Trellis Details	L-SCAPE - SEC 117 - NOIDA - 040 - R1
14	Co-Ordinated Services Plan	L-SCAPE - SEC 117 - NOIDA - 043 - R1
15	Side Entry Gate Detail	L-SCAPE - SEC 117 - NOIDA
16	Side Entry Guard House Detail	L-SCAPE - SEC 117 - NOIDA

PHASE - 3

1	Swimming Pool Detail	L-SCAPE - SEC 117 - NOIDA - 055
2	Sections - 2	L-SCAPE - SEC 117 - NOIDA - 056
3	Site Plan	L-SCAPE - SEC 117 - NOIDA - 041
4	Boundary Wall - Entrance Plaza	L-SCAPE - SEC 117 - NOIDA - 04 - 101
5	Site Plan Fire Fighting Layout	UL/UNH/FF/SP-01
6	Fire Fighting Schematic Diagram (Fire Layout)	UL/UNH/PH-03/SCH/FF-01
7	Site Plan Water Supply Layout	UL/UNH/PL/SP-04
8	Site Plan Irrigation Water Supply Layout	UL/UNH/PL/SP-03
9	Site Plan Sewer Layout	UL/UNH/PL/SP-02
10	Site Plan Storm Layout	UL/UNH/PL/SP-01
11	Site Plan Fire Fighting Layout	UL/UNH/FF/SP-05
12	Boundary Wall Plan & Details	ACECON ST-001



Legend (Symbol)	
Water	Water
Sanitary Sewer	Sanitary Sewer
Storm Sewer	Storm Sewer
Gas	Gas
Electricity	Electricity

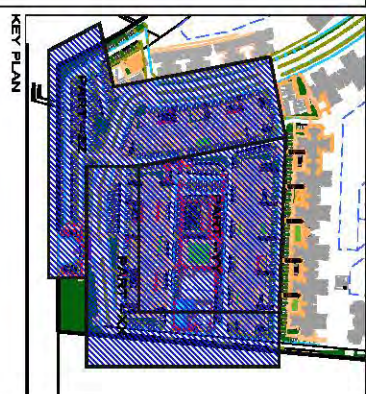
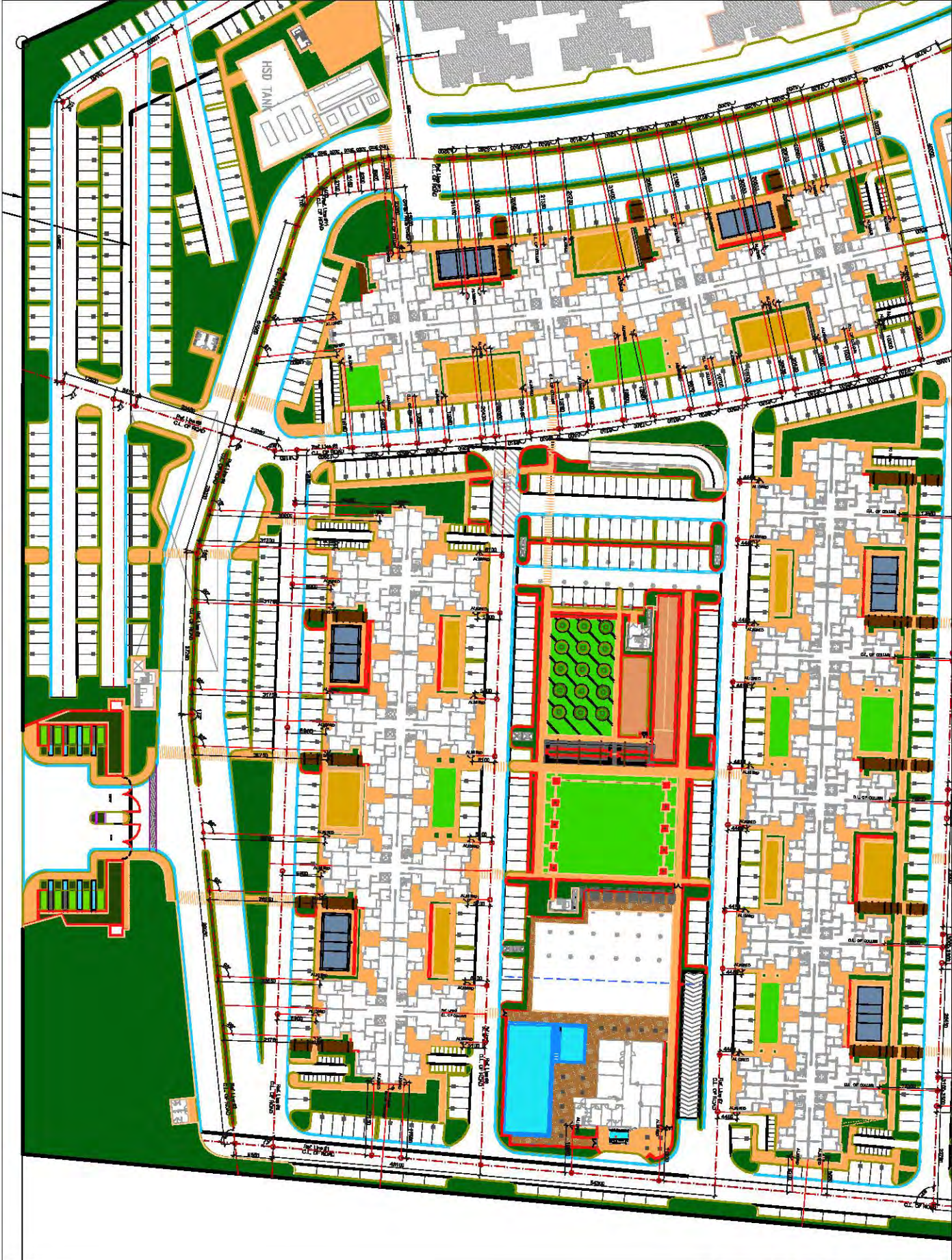
Legend (Symbol)	
Water	Water
Sanitary Sewer	Sanitary Sewer
Storm Sewer	Storm Sewer
Gas	Gas
Electricity	Electricity

Legend (Symbol)	
Water	Water
Sanitary Sewer	Sanitary Sewer
Storm Sewer	Storm Sewer
Gas	Gas
Electricity	Electricity

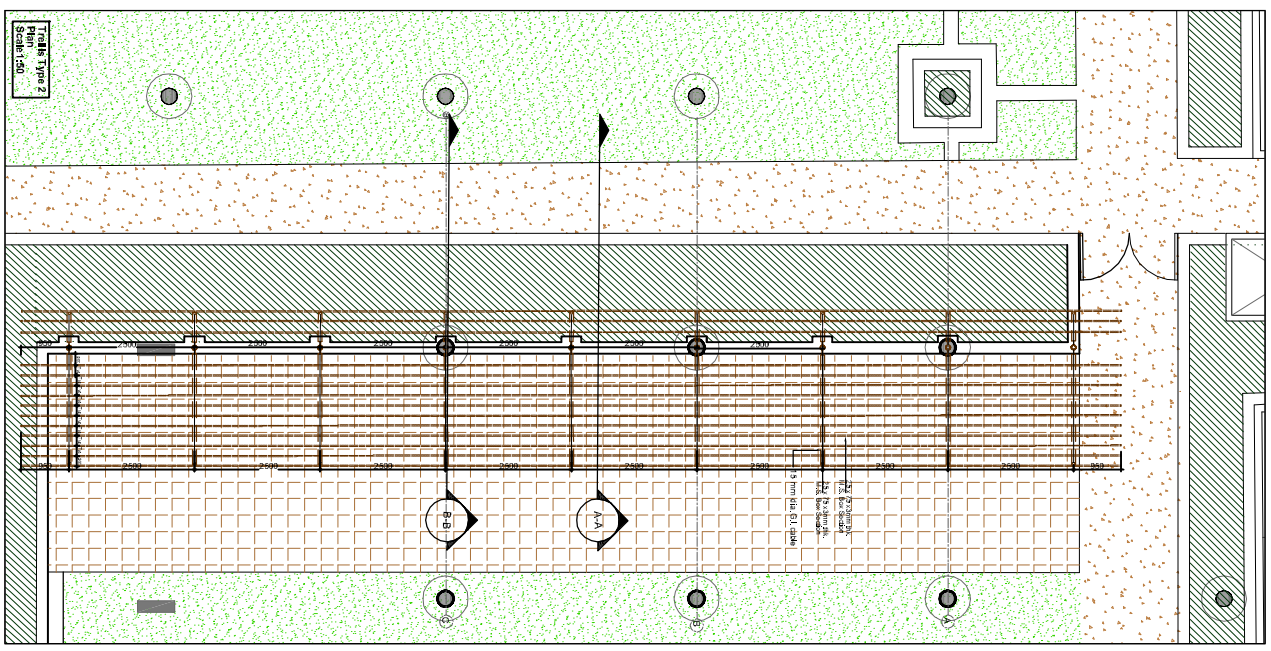
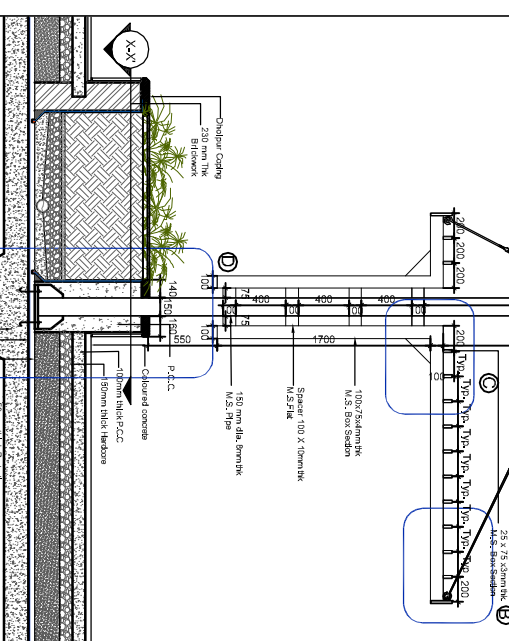
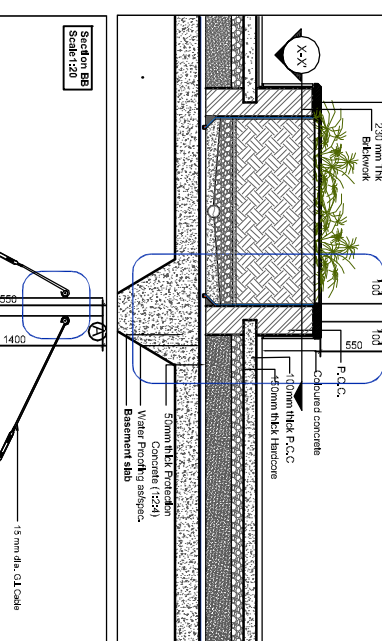
Legend (Symbol)	
Water	Water
Sanitary Sewer	Sanitary Sewer
Storm Sewer	Storm Sewer
Gas	Gas
Electricity	Electricity

Legend (Symbol)	
Water	Water
Sanitary Sewer	Sanitary Sewer
Storm Sewer	Storm Sewer
Gas	Gas
Electricity	Electricity





CLIENT: HSD TANK 10000 HSD TANK 10000 HSD TANK 10000 HSD TANK	
DESIGNER: LARSEN & ASSOCIATES 10000 HSD TANK 10000 HSD TANK 10000 HSD TANK	
DATE: 10/1/2010	
PROJECT: 10000 HSD TANK	
SCALE: 1" = 100'	
REVISIONS: 1. 10/1/2010	
APPROVED: [Signature]	
PROJECT NO.: 10000 HSD TANK	
PROJECT NAME: 10000 HSD TANK	
PROJECT ADDRESS: 10000 HSD TANK	
PROJECT CITY: 10000 HSD TANK	
PROJECT STATE: 10000 HSD TANK	
PROJECT ZIP: 10000 HSD TANK	
PROJECT PHONE: 10000 HSD TANK	
PROJECT FAX: 10000 HSD TANK	
PROJECT EMAIL: 10000 HSD TANK	
PROJECT WEBSITE: 10000 HSD TANK	
PROJECT NOTES: 10000 HSD TANK	



Note:- Align Vertical Posts of trellis with Architectural Column grid of basement parking

PART 2

BILL OF QUANTITIES