

ASSAM STATE TRANSPORT CORPORATION



PACKAGE NO. : II

BID VALUE : Rs .80,00,000/

VOL. - I : BIDDING DOCUMENT

**NAME OF WORK: CONSTRUCTION OF TRANSPORT PLAZA AT
ASTC FLAG STATION SILCHAR**

**OFFICE OF THE MANAGING DIRECTOR
ASSAM STATE TRANSPORT CORPORATION**

PARIBAHAN BHAWAN, PALTANBAZAR

Guwahati – 781008

**ASSAM STATE TRANSPORT CORPORATION
PARIBAHAN BHAWAN, PALTANBAZAR**

Guwahati – 781008.

AGREEMENT NO. _____

LOCAL COMPETITIVE BIDDING

| | | |
|---|----|---|
| NAME OF THE WORK | :- | CONSTRUCTION OF TRANSPORT PLAZA AT ASTC FLAG STATION SILCHAR |
| Download of Tender through website | :- | www.astcassam.gov.in |
| Time and date of Pre-Bid meeting | :- | 08/03/2018 At 11 am |
| Online Bid Preparation and Hash Submission | :- | |
| Last date & time of manual submission of hard copy of Technical Bid | :- | 14/03/2018 upto 2.00 pm |
| Technical Bid opening | :- | 16/03/2018 At 11.am |
| Place of opening bids | :- | OFFICE OF THE MANAGING DIRECTOR, ASSAM STATE TRANSPORT CORPORATION LTD. PARIBAHAN BHAWAN, PALTANBAZAR, GUWAHATI- 781008. ASSAM |
| Officer inviting bids | :- | MANAGING DIRECTOR, ASSAM STATE TRANSPORT CORPORATION LTD. PARIBAHAN BHAWAN, PALTANBAZAR, GUWAHATI- 781008. ASSAM |

Sd/-

Managing Director,
Assam State Transport Corporation
Paltanbazar, Guwahati-8.

Section -1

ASSAM STATE TRANSPORT CORPORATION

PARIBAHAN BHAWAN, PALTANBAZAR

Guwahati – 781008.

No.

Date:

DETAIL NOTICE INVITING BID (QCBS)

1) Managing Director, Assam. State Transport Corporation, Paltanbazar, Guwahati – 8 invite Fresh Bids for the following works from the contractor registered under ASTC, APWD, CPWD and other state and central organisation etc in appropriate category having experience in similar nature of works. Details of the Fresh Bid may be seen at e-procurement portal www.assamtenders.gov.in and ASTC portal www.astcassam.gov.in and also in the office of the undersigned during office hours from 11.00 AM of to 2.00 PM of .

The bidders must be enrolled in www.assamtenders.gov.in.

| Sl. No | State/ package | Name of work | Approx. value of work (In Rs.) | Time of completion | Bid security (In Rs.) | Cost of Bid Document (In Rs.) | Class of Bidder |
|--------|----------------|---|--------------------------------|--------------------|-----------------------|-------------------------------|-----------------|
| 1 | Assam | Construction of Transport Plaza at Astc Flag Station, Silchar | Rs 80,0000.00 | 18 months | Rs 1,60,000.00 | 5000 | I |

2) Contractors / Firms / Private Limited Company registered with ASTC, APWD, CPWD and other state and central organisation etc. with up-to-date registration certificate, having experience in similar nature of works with the E-tendering system provider for participating in the bidding process. The Bidding document may be downloaded through the www.assamtenders.gov.in by using their own user ID.

3) Online submission of Technical and Financial Bid are mandatory. Manual submission (without online submission) of bid will be considered as non-responsive. Bidders are to submit the required papers for technical bid by scanning and uploading the same before the expiry of the sequence “Tender Download” in the activity schedule mentioned below at Sl.6.

4) The bidder shall submit the cost of the bid in the form of Demand Draft / Bankers cheque of any nationalized Bank in favour of Managing Director, Assam State Transport Corporation Payable at Guwahati. Bidders submitting DD / Bankers cheque as cost of bid shall upload the scanned images of the same with the technical bid.

5) The Bid security shall be in favour of Managing Director, Assam State Transport Corporation with validity 225 days from the date of submission of Bid in one of the following forms :

- a) Bank Guarantee from any Nationalized / Scheduled Indian Bank in favour of the Managing Director, Assam State Transport Corporation (A written confirmation in the Bank's letter head confirming the authenticity of the Guarantee shall be furnished along with the Guarantee).
- b) Fixed Deposit Receipt issued by any Nationalized / Schedule Indian Bank acceptable to the employer.

6) The activity schedule for tendering process of the above mentioned packages shall be as per the schedule shown below :-

| Sl.No. | Schedule | Start Date | Start Time | End Date | End Time |
|--------|----------------------------|--|------------|-------------|----------|
| 1 | Publishing Date | 06/03/2018 | 2 pm | 14/03/2018 | 2 pm |
| 2 | Bid Download | 07/03/2018 | 11 am | 08/03/2018 | 2 pm |
| 3 | Pre Bid meeting date | 08/03/2018 | 11 am | 08/03/2018 | 2 pm |
| 4 | Bid submission date | 14/03/2018 | 10 am | 14/ 03/2018 | 3 pm |
| 5 | Technical Bid opening date | 16/03/2018 | 10 am | 16/03/2018 | 5 pm |
| 6 | Financial Bid opening date | 17/03/2018 , Time 11 am | | | |
| 7 | Tender Committee Meeting | | | | |
| 8 | Letter of Acceptance | Within 3 days after Tender Committee | --- | --- | --- |
| 9 | Final Work Order | After signing / Acceptance of the Tender Agreement | --- | --- | --- |
| 10 | Work started | Within 7 days after Final Work Order | --- | --- | --- |

7) A pre-bid meeting will be held on 08/03/2018 at 11 am at the office of the Managing Director, Assam State Transport Corporation, Paltanbazar, Guwahati – 8, to clarify the issues and to answer questions on any matter that may be raised.

8) Prospective bidders should inspect the site and details of the Project at any suitable date before submission of Bid, with due permission of the Managing Director, Assam State Transport Corporation

9) Original copy of the following documents must be submitted on **14TH March 2018 up to 2.00 PM** at the office chamber of the undersigned.

- a) Power of Attorney for signing the Bid.
- b) Bid securities in the form of Original Bank Guarantee / FDR.
- c) Cost of Bid document in the form of original DD / BC.
- d) Original copy of Banker Certificate for Credit facility.

10) A hard copy of the technical bid submitted online is to be submitted on **14thMARCH 2018 upto 2.00 PM** for evaluation purpose. For any discrepancy between the online bid and the hard copy of the bid, the online bid will govern and will be considered for evaluation.

11) Bidders are advised to scan their Technical papers at 100 dpi (In Black & White mode) in pdf format for multiple pages with maximum file size of 5MB. If numbers of pages exceeds, the bidders are advised to create multiple files and upload the same in "Upload Additional Document" stage.

12) Bidders Minimum Qualification Criteria:

- a) Achieved an average financial turnover (defined as a billing for works in progress and completed in all classes of civil engineering construction works only) over the last 3 years.
- b) The bidder must be a profit making one .
- c) The bidder should possess valid electrical registration of Assam State Transport Corporation or valid license from competent authority for executing electrification works of the project and should have executed similar electrical works. In case the bidder is not in possession of such registration, the bidder must enter into a collaboration / tie up arrangement with such registration holder having requisite experience. Necessary documents should be furnished along with the bid.
- d) The bidder should possess valid license for executing anti-termite works. In case the bidder is not in possession of such license, the bidder must enter into a collaboration / tie up arrangement with such license holder having requisite experience. Necessary documents should be furnished along with the bid.
- e) The bidder should possess valid license for executing Fire Fighting works. In case the bidder is not in possession of such license, the bidder must enter into a collaboration / tie up arrangement with such license holder having requisite experience. Necessary documents should be furnished along with the bid.

13) Bidders should quote rates considering the latest Govt. order / circular / notification on GST.

14) The Managing Director, ASTC., reserves the rights to cancel any Bid or all the Bids submitted by Bidders without assigning any reason.

15) Bidders who do not fulfil the requirements need not participate in the Bid process.

Sd/-

Managing Director,
Assam State Transport Corporation.
Date:

Memo No

Copy to:

Sd/-

Managing Director,
Assam State Transport Corporation

Section -2

| SL. No. | Scope of work |
|----------------|---|
| 1 | Ground Floor |
| 2 | First Floor |
| 3 | Internal Electrification |
| 4 | External Electrification |
| 5 | Sanitary Installation works |
| 6 | Internal water/supply works |
| 7 | Fire fighting works |
| 8 | Approach road & car parking |
| 9 | Landscaping |
| 10 | Any other work as assigned due to site condition. |
| 11 | |
| 12 | |
| 13 | |

GENERAL

1. Scope of Bid

- 1.1 The Managing Director, Assam State Transport Corporation., Paltanbazar, Guwahati-8 invites bids for the work : **Construction of Transport Plaza at Astc Flag Station, Silchar.** The Bidder may submit the bid for the work details of which is given in the bidding document.
- 1.2 The successful Bidder will be expected to complete the work by the intended completion date specified in the Bidding document.
- 1.3 Throughout this bidding document, the terms 'bid' and 'tender' and their derivatives (bidder/tenderer, bid/tender, bidding / tendering etc.) are synonymous.
- 1.4 Bid amount :- **80,00,000.00 (Rupees eighty lakhs) only.**

2. Source of funds

- 2.1 Govt. of Assam

3. Eligible Bidders

- 3.1 This Invitation for Bids is open to all bidders registered under ASTC, APWD, CPWD and other state and central organisation etc. and registered with e-tendering system provider as mentioned in bidding document.

4. Qualification of the Bidder

- 4.1 All bidders shall provide Qualification Information, Preliminary description of the proposed work method and schedule, (including drawings and charts where necessary). The proposed methodology should include programme of construction backed with equipment planning and development duly supported with broad calculations and quality assurance procedures proposed to be adopted justifying their capability of execution and completion of work as per technical specifications, within stipulated period of completion.
A Quality Assurance Manual (QAM) including but not limited to policy statement, project organisation (Flow Chart) Project Organization (Duties and Responsibilities), Project Control and Administration, Document control, Control of Materials, Methodology and working, Test and Inspection Plan, Calibration.
Non Conformity and Corrective Actions, Quality Audits and Safety should also accompany the bid.
- 4.2 All bidders shall include the following information and documents with their bids.
 - i) Copies of original documents defining the constitution or legal status, place of registration and principal place of business; written power of attorney of the signatory of the Bid to commit the bidder.
 - ii) Total monetary value of construction work performed during each of the last five years.
 - iii) Experience in works of a similar nature and size for each of the last seven years and detail of works underway or contractually committed; and clients who may be contacted for further information on those contracts.
 - iv) Major items of construction equipment proposed to carry out the contract.

(With proof of ownership / lease / hire etc.)

- v) Qualifications and experience of key site management and technical personnel proposed for contract.
- vi) Reports on the financial standing of the Bidder, such as profit and loss statements and auditors reports for the past five years.
- vii) Evidence of access to line (s) of credit and availability of other financial Resources facilities (10% of contract value), certified by the Bankers (Not more than 3 months old).
- viii) Authority to seek references from the Bidder's Bankers.
- ix) Information regarding any litigation, current or during the last five years in which the Bidder is involved, the parties concerned and disputed amount.
- x) The proposed methodology and programme of construction, backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per Technical Specification within the stipulated period of completion milestones.
- xi) All the additional safety/ protection measures to be taken by the contractor during the construction period as per prevailing guidelines of local Municipal Corporation / Municipal Board / Town Committee and Declaration of safety of State / Nation, Quality Assurance and Quality control, Safety at site, Health safety & environment policy.

4.3 **A. To qualify for award of the contract, each bidder in its name should have as follows :**

- a) Achieved an average financial turnover (defined as a billing for works in progress and completed in all classes of civil engineering construction works only) over the last 3 years of should not be less than 30% of Bid value.
- b) The bidder must be a profit making one for the last five years.
- c) The bidder should possess valid electrical registration of Assam State Transport Corporation or valid license from competent authority for executing electrification works of the project and should have executed similar electrical works. In case the bidder is not in possession of such registration, the bidder must enter into a collaboration / tie up arrangement with such registration holder having requisite experience. Necessary documents should be furnished along with the bid.
- d) The bidder should possess valid license for executing anti-termite works. In case the bidder is not in possession of such license, the bidder must enter into a collaboration / tie up arrangement with such license holder having requisite experience. Necessary documents should be furnished along with the bid.
- e) The bidder should possess valid license for executing Fire Fighting works. In case the bidder is not in possession of such license, the bidder must enter into a collaboration / tie up arrangement with such license holder having requisite experience. Necessary documents should be furnished along with the bid.

B. Each Bidder should demonstrate :

- a) Availability (either owned or leased) of the key and critical equipment for this work :

Based on the studies, carried out by the Engineer the minimum suggested major equipment to attain the completion of works in accordance with the prescribed construction schedule.

The bidders should, however, undertake their own studies and furnish with their bid, a detailed construction planning and methodology supported with layout and necessary drawings and calculations above to facilitate the Managing Director, Assam Tourism Development Corporation Ltd., Paltanbazar, Guwahati-8 to review their proposals. The numbers, types and capacities of each plant/equipment shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements.

- b) Availability for this work of personnel with adequate experience as required;
- c) Liquid assets and / credit facilities of not less than amount indicated in Bidding document.

(Credit lines/letter of credit/certificate from Banks for meeting the funds requirement etc.)

- C. To Qualify for the package of contracts made up of this contract for which bids are invited in the Bid, the bidder must demonstrate having experience and resources sufficiently to meet of the qualifying criteria for the contracts.

TERMS AND CONDITIONS(TOR):-

1. PAN number along with GST number should be mentioned clearly, otherwise bid will be rejected.
2. Rate should be quoted inclusive of all applicable taxes. (including G.S.T)
3. The construction work is to be done to the full satisfaction of the designated official of ASTC and the Project Management Consultant.
4. All tools and plants are to be arranged by the contractor himself.
5. Construction materials mentioned in the specification of items of ISI/ISS (BIS)/REC approved will have to be supplied /installed by the contractor at site in conformity to the specification and satisfaction to the Engineer In-charge. Sub standard materials will not be allowed to be used in any circumstances.
6. Curing of construction shall be done properly and the water required shall have to be arranged by the contractor.
7. No extra payment for carrying of materials will be allowed from the Organization.
8. **All work must be completed within 18(Eighteen) months** unless otherwise stated.
9. **Bid security/ EMD** for unsuccessful bidders will be returned within 30 days from the date of allotment of works. The EMD of successful bidder will be released when the bidder signs the agreement and furnish the required performance bond.
10. The successful bidder has to submit the **Performance Bank guarantee** in approved format of 5 % of the contract value within 14 days on receipt of Work order and valid up-to the completion of DLP from the date of handing over or submission of Final bill whichever is earlier.
11. The Employer shall retaining 5% from each payment due to the contractor, until completion of the whole works. Another 5% will be retained as performance security. Out of the 10 % retention amount, 5% will be released after completion of work and the balance 5% will be released at the end of defects liability period.
12. The contractor will be allowed to make temporary shed at the worksite for storing goods at their own risk and cost and will have to be cleaned within 7 days of completion of work.
13. Water and power for the construction to be arranged by the contractor with his/their own cost which is deemed to be included in the rates. The rates are firmed and no extra claim will be entertained till completion of the work for any items or total contract.
14. The **safety measures to be arranged by the contractor** during working at site as directed by the Engineer in charge which **deemed to be included in the item rates**.
15. The contractor will not be allowed to sublet the civil work to other party. In case of any special consideration, the contractor will have to take written APPROVAL from client to sub let any part of the work to clients approved party.

16. Estimate is prepared as per Schedule of Rates (2013-2014), Government of Assam, PWD- Building ,Electrical, Sanitary and Water Supply as well as present market rates. However the bidders have to quote the most competent rates. It is an item rate Bid.

17. The Managing Director of ASTC reserves the right to reject any Bid or accept any one without showing any reason.

18. Any dispute what so ever, will be under the jurisdiction of Guwahati High Court, Guwahati.

19. The selected party should sign Agreement Form before issue of final work order.

20. Pre bid meeting will be held on 08/03/2018 at 11.00 A.M. at ASTC.

21. Bid will be valid up to 180 days from the date of submission.

22.

a) A hard copy of the technical bid submitted online is to be submitted on 14/03/2018 upto 2.00 P.M. for evaluation purpose in sealed cover. For any discrepancy between the online bid and the hard copy of the bid, the online bid will govern and will be considered for evaluation.

b) Original copy of the following documents must be submitted on 14th March, 2018 upto 2.00 P.M. at the office chamber of the undersigned.

i) Power of Attorney for signing the Bid.

ii) Bid securities in the form of original bank guarantee / FDR.

iii) Cost of Bid document in the form of original DD / BC.

iv) Original copy of Banker Certificate for Credit facility.

Project Location:

Location of the project is **CACHAR District.**

Power & Water for construction shall be arranged by contractor with his own cost. The one who is awarded the contract will be the “Contractor”. The Contractor has to carry out his work according to General Conditions of Contract, Special Condition of Contract, Technical Specifications, Bill of Quantities, Estimate, Drawings and Site Plan issued by the client. The privilege of authorship and ownership of drawings and designs of the structures remain with The Client. The drawings and designs prepared by The Client shall be used only for the purpose specified in this contract and all the drawings issued shall be returned to The Client on completion of work. The Engineer authorized by Employer to represent at Site-of-work is authorized to ask the Contractor to discontinue any work which does not meet the expected and or specified requirements and /or work already executed, may be rejected and asked to be removed for the same reason and to construct with contractors cost, risk and responsibility.

APPENDIX TO BID**INSTRUCTIONS TO AGENCIES**

| IMPORTANT DATES & INFORMATION FOR TENDER | |
|---|---|
| Part-II | |
| DATA SHEET | |
| Tender Floating Body | Assam State Transport Corporation |
| Tender Floating Authority | |
| | Managing Director, Assam State Transport Corporation, Paltanbazar, Guwahati -8 |
| | astcassam.gov.in |
| Amount Details | |
| Earnest Money Deposit | Rs 1,60,000.00 |
| Earnest Money In favor of | Managing Director, Assam State Transport Corporation payable at Guwahati |
| Bid Processing Fee | Rs.5000/ |

| | |
|---|--|
| Bid Processing Fee in favor of | Managing Director, Assam State Transport Corporation payable at Guwahati |
| Currency | INR |
| Estimated Tender value | Rs.80,00,000/(Eighty Lakhs) Only |
| Name of the Assignment | Construction of Transport Plaza at Astc Flag Station, Silchar |
| Tender Dates | |
| Last Date of BID DOCUMENT submission | 14/ 03/2018 |
| Time | 3 pm |
| Place | Managing Director, Assam State Transport Corporation payable at Guwahati |
| Date of bid opening | 16/ 03/2018 |
| Time of bid opening | 10.00 AM |
| Place | Managing Director, Assam State Transport Corporation payable at Guwahati |
| Bid validity Period | 180 days |
| Expected date for commencement of consulting Assignment/job | Immediately upon award of contract |
| Submission of Documents | |
| Envelop 1 | Eligibility Documents |
| Envelop 2 | Financial Proposals |
| Envelop 3 | EMD |
| Envelop 4 | Bid Processing Fee |
| Envelop 5 | Outer Envelope |

APPENDIX – I

| Sl. No. | Items | Clause No. | Remarks |
|---------|----------------------------------|--------------------------------------|---|
| 1 . | Earnest money / Bid security | | As per Press Notice (QCBS) |
| 2. | Commencement of Works | Clause No. General 41 | - 7 days from the date of issue of Letter of Intent / Work Order whichever is earlier. |
| 3. | Time for Completion | Clause No. General 43 SP-10 | As per Press Notice (QCBS) |
| 4. | Liquidated Damage for Delay | Clause No. General 47 SP-11 | 0.2 to 2 % of the Contract sum per week or part thereof |
| 5. | Bonus for early Completion | Clause No. General 47-3 SP-12 | 0.2 to 2% of the contract sum per week or part thereof |
| 6. | Period of Defects Liability | Clause No. General 49-1 SP-14 | 365 days after date of certificate of completion of works |
| 7.a | Mobilization Advance | Clause No. General 60-2 SP-17.2.1 | 5% of contract sum(interest free) against in irrevocable acceptance Bank Guarantee of similar amount in an approved format and submission of performance guarantee. |
| 7.b | Recovery of Mobilisation Advance | Clause No. General 60-2 SP-17.2.1 | The mobilization advance will be recovered on pro rata basis (@ 15% of the bill value & till full recovery) from the second RA or after completion of 15% of the work whichever is earlier . BG of mobilization advance can be released after full recovery of the mobilisation advance |
| 8 | Retention Money | Clause No. SP-17.2.4 | The Employer shall be retaining 5% from each payment due to the contractor, until completion of the whole of the works. Another 5 % will be retained as performance security. Out of the 10 % retention amount, 5% will be released after completion of work and the balance 5% will be released at the end of defects liability period . |
| 9.a. | Period of final measurements and | Clause No. SP-17.2.5 | Within 60 days |

| | | | |
|-----|---|------------------------|--|
| | certifications by the Engineer by the date of receipt of final bill of contractor | | |
| 9.b | Period of final payment by the Employer certification by the Engineer | Clause No. SP-17.2.5 | Within 30 days |
| 10. | Performance Bond / Security Deposit | Clause No. General 10 | 5% of contract sum within a period of not more than 14 days from the date of issue of LOI/LOA, the successful Biderer shall submit a performance bond for due performance of the contract for the above sum. The performance bond will be valid right through the contract and till the completion of DLP and to be submitted in the form of irrevocable bank guarantee to be submitted from an approved schedule bank/nationalized bank in approved format. PS will be released after 28 days from completion of DLP. |
| 11. | Construction Power and Water | Clause No. SP-23 | Power and water for construction to be arranged by the contractor at his own cost |
| 12 | Accommodation and other facilities for Contractor staff and labours | Clause No. SP-21 | The Contractor shall arrange accommodation & other facilities for his staff and labour by himself on the site at his own cost. On his vacating the site after work is over the contractor should in no way affect the nature and ecology of the site. |
| 13 | Programme | Clause No. SP-6 | Within 15 days of the award of contract, the Contractor shall submit to the engineer for approval of programme showing the order of procedure in which he proposes to carry out the works. |
| 14 | Sanitation Facilities | Clause No. SP-24 | Contractor has to arrange for Toilet facilities for his labour during daytime, while working. Proper arrangement for drainage/ disposal to be done to maintain hygienic condition. |
| 15. | Safety Rules | Clause No. SP-33 | The Contractor is required to give an undertaking that all safety Rules & Regulations will be followed by him as per Tender. |
| 16. | Clearance of site on Completion | Clause No. General -33 | Contractor will be required to clear the site within 2 weeks on completion of works. |
| 17. | Variation in Quantities | Clause No. SP-34 | The contractor will not be eligible for any claim in any case of variation in the quantities provided by the contractor in the technical bid performa (List of material) approved by the ASTC/PMC |
| 18. | Variation Exceeding plus minus 10% | Clause No. SP-35 | Employer may renegotiate only the sum by which such limit of plus minus 10% is exceeded |

| | | | |
|-----|---------------------------------------|------------------|---|
| 19. | VAT, Service Tax and other Taxes /GST | Clause No. SP-19 | The quoted rates shall be inclusive of all taxes, duties, royalties, etc.. |
| 20. | As Built drawing | Clause No. SP-18 | The contractor shall furnish four copies the as built and approved drawings within two weeks after successful Commissioning and handing over. |
| 21 | Insurances | Clause No. SP-7 | The contractor shall take out following policies: <ul style="list-style-type: none"> • Contractors all risk policy • Third party liability (as mentioned above) and • workmen's compensation policy |
| 22 | Cash Credit Limit | - | The bidder must have minimum of 10 % of cash credit/ over draft limit. |

BID EVALUATION CRITERIA:

Based on the NIT, Managing Director, ASTC will follow the following procedure for opening of the BID:

STEP – I

After receiving the BID, on the same day Managing Director, ASTC will open the Envelope and check the receipt of the **two separate envelope** inside the same duly mentioned with envelope- I, envelope – II as mentioned in the Tender. Managing Director, ASTC will open **first the Cover- I to check the EMD** in the absence or default of which the Tender may get rejected.

STEP- II

Managing Director, ASTC will open the Cover- II, based on the cover- I, as opened earlier on the **same day**. Managing Director, ASTC will check the documents submitted with **Cover-II, Technical bid and credential, overall** and keep for scrutiny and evaluation by Managing Director, ASTC / Evaluation Committee. After Technical evaluation on above, Managing Director, ASTC will decide the date of opening of envelope II financial Bid based on the evaluation Report. After opening of the financial Bid, Managing Director, ASTC will evaluate the same to take the final decision on the same. The evaluation matrix have attached with the Bid as guide line to the Bidders as follows:

EVALUATION PROCEDURE

| Sl.No | Particular | Details | Max.Marks | Score | Remarks |
|-------|--|---------|-----------|-------|---------|
| a) | Financial standing as certified by Bankers, Audited Profit & Loss A/C statement and Balance Sheet, Annual turnover in last five years, evidence of access to adequate working capital. | | | | |
| | 2016-2017 | | 20 | | |
| | 2015-2016 | | | | |
| | 2014-2015 | | | | |
| | | | | | |
| | | | | | |
| b) | Experience on similar work(s) during last 5 years with details including year wise monetary value, Clients, and proof of satisfactory completion of works. | | 20 | | |
| c) | Construction Equipment proposed to be deployed for the project and proof of its availability, equipment proposed to be purchased or leased. | | 10 | | |
| d) | key personnel available and proposed to be engaged for management, and supervision of the Project, their qualifications and experience. | | 10 | | |
| e) | Experience in Electrical works, Antitermite works, Fire Fighting works. | | 15 | | |
| f) | Quality Assurance & Quality Control, Safety at site, Health safety & environment policy. | | 10 | | |
| g) | The proposed methodology of work And programme of construction work | | 12 | | |

| | | | | | |
|----|--|--|-----|--|--|
| h) | Undertaking additional safety / protection measures to be taken by the contractor during the construction period as per prevailing guidelines of Local MB / MC / TC & Declaration of safety of State / Nation. | | 3 | | |
| | Total Marks | | 100 | | |

The assessment will be done on above basis. Hence Bidder must submit authenticated information with supporting documents as above.

QCBS evaluation criteria

1. Technical:-

To become eligible for short listing in the technical bid, bidder must secure at least 60 marks in aggregate. Based on highest score Technical score will be worked out.

2. Financial:-

Based on lowest quote as 100 %, the financial score in percentage will be worked out.

FINAL EVALUATION FOR SELECTION: (QCBS Evaluation):

The Final Evaluation for selection will be based on combine evaluation of Technical + Financial score. Weightage for Technical and Financial score will be 80:20

MODE OF EVALUATION:

The Evaluation will be QCBS (Quality- Cost Based Selection) Evaluation.

Final Score: $F = 0.8X_T + 0.2X_F$

T_s = Technical Score

F_s = Financial score

TERMS & CONDITIONS:-

PERFORMANCE SECURITY

Within 14 days from the date of issue of LOI/ LOA, the successful bidder shall deliver to the Employer a Performance Security for due performance of the contract for an amount equivalent to 5 % of Contract Price. The Irrevocable bank guarantees to be submitted from an approved scheduled bank/ nationalized bank in approved format. The Performance Bond will be valid right through the contract and till the end of 28 days from defects liability period.

MOBILIZATION ADVANCE

5% of the Contract Price on submission of Irrevocable Bank Guarantee on completion of Mobilization.

RETENTION MONEY

The Employer shall be retaining 5% from each payment due to the contractor, until completion of the whole of the works. Another 5 % will be retained as performance security. Out of the 10 % retention amount, 5% will be released after completion of work and the balance 5% will be released at the end of defects liability period .

FIRM PRICE CONTRACT

The contractor has to quote firm prices valid for the entire period of construction. No price escalation during the contract shall be allowed on any account even for the extended period on any reasonable ground.

Section 3:

Financial Proposal - Standard Forms

FORM FIN-1

FINANCIAL PROPOSAL SUBMISSION FORM

[Location, Date]

To: *[Name and address of Employer]*

Dear Sirs:

We, the undersigned, offer to provide the consulting Assignment/job for *[Insert title of Assignment/job]* in accordance with your Request for Proposal dated *[Insert Date]* and our Technical Proposal. Our attached Financial Proposal is for the sum of *[Insert amount(s) in words and figures1]*. This amount is inclusive of the Domestic taxes. We hereby confirm that the financial proposal is unconditional and we acknowledge that any condition attached to financial proposal shall result in reject of our financial proposal.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Part II Data Sheet.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature *[In full and initials]:*

Name and Title of Signatory:

Name of Firm:

Address:

FORM FIN-2

SUMMARY OF COSTS

Name of the Bidder:

| Sl No | Particulars | Amount (Rs.) |
|-------|---|--------------|
| 1. | Charges (Bifurcation to be provided in table given below) | |
| | GST | |
| | Total | |
| | (Rupees in words) | |

For Financial Evaluation, the total fee(Inclusive of GST) for the service provided will be considered. This fees will cover all costs/expenses

NB

Rate may be offered as unit rate(in INR) in numbers and in words as per schedule of rate(2013-14), Government of Assam, PWD- Building ,Electrical, Sanitary and Water Supply

TERMS OF PAYMENTS:

Payment will be made as per work done / in progress

FORM OF BID

(TECHNICAL BID PERFORMANCE)

Technical bid should be given with complete details of list of material required (per format below) for the work such as.

| SL. No. | Scope of work |
|---------|---------------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |

PART-I
GENERAL CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

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PART I - GENERAL CONDITIONS

1. DEFINITIONS AND INTERPRETATIONS

1) In the Contract, as hereinafter defined, the following words and expressions shall have the meanings hereby assigned to them, except where the context otherwise requires:-

Definitions:-

- a) "Employer" means Assam State Transport Corporation, who will employ the Contractor and the legal successors entitled to the Employer, but not, accept with the consent of the contractor, any assignee of the Employer.
- b) "Contractor" means the persons, firm or company whose tender has been accepted by the Employer & includes the Contractor's personal representative's successors and permitted assigns.
- c) "Engineer" means the Engineer designated as such in Part II, or other Engineer appointed from time to time by the Employer and notified in writing to the Contractor to act as Engineer for the purposes of the Contract in place of the Engineer so designated.
- d) "Engineer's Representative" means any resident engineer or assistant of the Engineer or any clerk of works appointed from time to time by the Employer to perform the duties set forth in Clause 2 hereof, whose authority shall be notified in writing to the Contractor by the Engineer.
- e) The 'Work' or 'Works' means the work described in the tender documents, Drawings and Specifications as may be issued from time to time to the contractor by the consultants or the Engineer, including all modifications, extra and additional works and obligation to be carried out either on site or at any factory, or workshop or any other place for subsequent incorporation, as required for performance of the Contract.
- f) "Contract" means the General and Special Conditions of Contract, Specifications, Drawings, priced Bill of Quantities, Schedule of Rates and Prices, if any, Tender, pre-contract correspondence Letter of Intent / Acceptance, Work order the Contract Agreement, if completed.
- g) "Contract Sum" means the sum named in the letter of Intent / Acceptance subject to such additions thereto or deductions there from as may be made under the provisions of the Contract.
- h) "Constructional Plant" means all appliances or a thing of whatsoever nature required in or about the execution or maintenance of the Works but does not include materials or other things intended to form or forming part of the Works.

- i) "Specifications" means the specification referred to in the Tender and any modification thereof or addition there to as may from time to time be furnished or approved in writing by the Engineer.
- j) "Drawings" means the drawings referred to in the specification and any modification of such drawings approved in writing by the Engineer and such other drawings as may, from time to time, be furnished and approved in writing by the Engineer or the Consultant.
- k) "Site" means the land and/or other places on, in, into, under or through which the Work is to be executed under the contract or any adjacent or any nearby land, path or street which may be allotted or used for the purpose of carrying out the Contract.
- l) "Approved" means approved in writing, including subsequent written confirmation of previous verbal approval and "approval" means approval in writing, including as aforesaid.
- m) "I.S." means "Indian Standards" issued by Indian Standards Institutions.
- n) A "Week" means seven days without regard to the number of hours worked or not worked in any day in that week.
- o) A "Day" means a day of 24 hours irrespective of number of hours worked or not worked in that day.
- p) "Day work" means the items of labour and/or materials which, in the opinion of the Engineer are not capable of being evaluated by accepted method of measurement or assessment.

Singular and Plural

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

Heading or Notes

3) The headings and marginal notes in these Conditions of Contract shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.

ENGINEER AND ENGINEER'S REPRESENTATIVE

2. Duties and Power of Engineer's Representative

1) The Engineer shall carry out such duties necessary for making decisions and issuing certificates and orders as are specified in the Contract. In the event of the Engineer being required in terms of his appointment by the Employer to obtain the specific approval of the Employer for the execution of any part of these duties, shall be set out in part II of these Conditions.

2) The Engineer's Representative shall be responsible to the Engineer and his duties are to watch and supervise the Works and to test and examine any materials to be used or workmanship employed in connection with the Works. He shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract or, except as expressly provided hereunder or elsewhere in the Contract, neither to order any work involving delay or any extra payment by the Employer, nor to make any variation of or in the Works. The Engineer may from time to time in writing delegate to the Engineer's Representative any of the powers and authorities vested in the Engineer and shall furnish to the Contractor and to the Employer a copy of all such written delegations of powers and authorities. Any written instruction or approval given by the Engineer's Representative to delegation, but not otherwise, shall bind the Contractor and the Employer as though it had been given by the Engineer. Provided always as follows:

- a) Failure of the Engineer's Representative to disapprove any Work or materials shall not prejudice the power of the Engineer thereafter to disapprove such Work or materials and to order the pulling down, removal or breaking up thereof.
- b) If the Contractor shall be dissatisfied by reason of any decision of the Engineer's Representative he shall be entitled to refer the matter to the Engineer, who shall thereupon confirm, reverse or vary such decision.

ASSIGNMENT AND SUB-LETTING

3. Assignment

The Contractor shall not assign the Contract or any benefit or interest therein or there under, otherwise than by a charge in favour of the Contractor's bankers of any monies due or to become due under this Contract, without the prior written consent of the Employer

4. Sub-Letting

The Contractor shall not sub-let the civil works of the project. Except where otherwise provided by the contract, the contractor shall not sub-let other part of the Works without the prior written consent of the Engineer, which shall not be unreasonably withheld, and such consent, if given shall not relive the Contractor from any liability or obligation under the contract and he shall be responsible for the acts, defaults and neglects of any sub-contractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the contractor, his agents, servants or workmen. Provided always that the provision of labour on a piecework basis shall not be deemed to be a subletting under this clause. The contractor shall co-ordinate and shall be responsible for all aspects of his sub-contractor(s), without being relieved of any of his obligation

under the contract. The contractor may tie up for other parts except civil works. Necessary documents have to be furnished.

Language's and Law Documents

5. Mutually Explanatory

- 1) These shall be stated in Part II of the Conditions
- 2) The several documents forming the Contract are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies the same shall be explained and adjusted by the consultants who shall thereupon issue to the contractor instructions thereon through the Engineer. Provided always that if, in the opinion of the Engineer, compliance with any such instructions shall involve the Contractor in any cost, which by reason of any such ambiguity or discrepancy could not reasonably have been foreseen by the Contractor, the Engineer shall certify and the Employer shall pay such additional sum as may be reasonable to cover such costs.

6. Custody of Drawings

- 1) The Drawings shall remain in the sole custody of the Engineer, but two copies thereof shall be furnished to the Contractor free of charge. The contractor shall provide and make at his own expense any further copies required by him. At the completion of the Contract the Contractor shall return to the Engineer all Drawings provided under the Contract.

One copy of Drawings to be kept on Site

- 2) One copy of the Drawings, furnished to the Contractor as aforesaid, shall be kept by the Contractor on the Site and the same shall at all reasonable times be available for inspection and use by the Engineer and the Engineer's Representative and by any other person authorized by the Engineer in writing.

Disruption of Progress

- 3) The Contractor shall give written notice to the Engineer whenever planning or progress of the Works is likely to be delayed or disrupted unless any further drawing or order, including a direction, instruction or approval, is issued by the Engineer within a reasonable time. The notices shall include details of the drawing or order required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

7. The Engineer and the Consultants shall have full power and authority to supply to the Contractor from time to time during the progress of the Works, such further drawings and instructions as shall be necessary for the purpose of the proper and adequate execution and maintenance of the Works. The Contractor shall carry out and be bound by the same.

Further Drawings and instructions

Last major drawings may be provided as per schedule mutually agreed by the Engineer / Consultant and the Contractor prior to stipulated date of completion and the Contractor will have to gear up his resources accordingly so as to complete the works within stipulated time.

GENERAL OBLIGATIONS

8. Contractor's General Responsibilities

- 1) The Contractor shall, subject to the provisions of the Contract, and with due care and diligence, execute and maintain the Works and provide all labour, including the supervision thereof, materials, Constructional Plant and all other things, whether of a temporary or permanent nature, required in and for such execution, and maintenance, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract.
- 2) The Contractor shall take full responsibility for the adequacy, stability and safety of all site operations and methods of construction, provided that the Contractor shall not be responsible, except as may be expressly provided in the Contract, for the design or specification of the Permanent Works, or for the design or specification of any Temporary Works prepared by the Engineer.
- 3) The contractor shall promptly inform the Engineer of any error, omission, fault and other defects in design, drawing or specifications for the Works which are discovered while reviewing the contract documents or in the process of execution of Works.

9. Contract Agreement

The Contractor shall, when called upon to do so, enter into and execute a Contract Agreement, to be prepared and completed at the cost of the Employer, in the form annexed with such modification as may be necessary.

10. Performance Bond / Security Deposit

If, for the due performance of the Contract, the Tender shall contain an undertaking by the Contractor to obtain, when required, a bond or a guarantee of a scheduled and/or nationalized bank to be bound with the Contractor to the Employer in a sum not exceeding that stated in the Appendix to the Tender and agreed to as per the Letter of Acceptance or Letter of Intent /Work Order for such bond or guarantee, the said bank and the terms of the said bond or guarantee shall be such as shall be approved by the Employer. The obtaining of such bond or guarantee or the provision of such sureties and the cost of the bond or guarantee to be so entered into shall be the

expense in all respects of the Contractor. Performance Guarantee shall be valid up-to the 28 days from completion of Defects Liability Period and shall be kept alive till the issue of certificate of Final Completion.

11. Inspection of Site

The Contractor shall be deemed to have inspected and examined the Site and its surrounding and information available in connection therewith and to have satisfied himself, so far as is practicable, before submitting his Tender, as to the form and nature thereof, including the subsurface conditions, the hydrological and climatic conditions, the extent and nature of the Work and accommodation he may require and, in general, shall be deemed to have obtained all necessary information subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Tender. The Contractor is further deemed to have taken particular notice of approaches and way leaves etc. connecting the site. The Employer does not undertake to improve the same any further & the Contractor will have to improve the same or make new approaches and way leaves, at his own cost, if the existing approaches & way leaves are considered inadequate and unsuitable by the Contractor. Use of such new or improved approaches and way leaves shall be afforded to the Employer, the Engineer, the Consultants and any other concerned person, without any restrictions or compensation.

12. Sufficiency of Bid

The Contractor shall be deemed to have satisfied himself before Bidding as to the correctness and sufficiency of his Bid for the Works and of the rates and prices stated in the priced Bill of Quantities and the Schedule of Rates and Prices, if any, which Bid rates and prices shall, exception so far as it is otherwise provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper execution and maintenance of the Works. No claim in this regard shall be entertained.

13. Work to be to the Satisfaction of the Engineer and the Consultant

Save in so far as legally or physically impossible, the Contractor shall execute and maintain the Works in strict accordance with the Contract, to the entire satisfaction of the consultant and the Engineer and shall comply with and adhere strictly to the Engineer's instructions and directions, or any matter whether mentioned in the contract or not, touching or concerning the works. Instructions and directions given by the consultant or the Engineer or the Employer, if any, will be acted upon *on* the same forwarded to the Contractor, in writing by the Engineer, or subject to the limitations referred to in Clause 2 hereof, *by* the Engineer's Representative.

14. Programme to be furnished

- 1) Within 15 days of award of the Contract, Contractor shall, submit to the Engineer for his approval a programme showing the order of procedure in which he proposes to carry out the Works. The Contractor shall whenever required by the Engineer submit a revised programme showing the modifications to the approved programme necessary to ensure completion of the Works within the time for completion as defined in Clause 43 hereof. The Contractor may have to revise the programme depending upon the requirements of the Employer. It must be clearly understood that the Contractor may have to induct additional resources contingent to the requirement of the Employer so as to enable the Employer to meet his target of commissioning the project. Nothing extra shall be paid to the Contractor on account of such contingencies.
- 2) If at any time it should appear to the Engineer that the actual progress of the works does not conform to the approved programme referred to in sub-clause (1) of this clause, the Contractor shall produce, at the request of the Engineer, a further revised programme showing modification to the approved programme necessary to ensure completion of the Works within the time for completion as defined in Clause 43 hereof.
- 3) The submission to and approval by the Engineer or Engineer's Representative of such programmes or the furnishing of such particulars shall neither relieve the Contractor of any of his duties or responsibilities under the Contract, nor entitle the Contractor to any enhancement of the Contract Sum on this account.

15. Contractor's Superintendence

The Contractor shall give or provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor or a competent and authorized agent or representative approved of in writing by the Engineer, which approval may at anytime be withdrawn, is to be constantly on the Works and shall give his whole time to the superintendence of the same. If such approval shall be withdrawn by the Engineer, the Contractor shall, as soon as is practicable, having regard to the requirement of replacing him as hereinafter mentioned, after receiving written notices of such withdrawal, remove the agent from the Works and shall not thereafter employ him again on the Works in any capacity and shall replace him by another agent approved by the Engineer. Such authorized agent or representative shall receive, on behalf of the Contractor, direction, and instructions from the Engineer or, subject to the limitations of Clause 2 hereof, the Engineer's Representative.

16. Contractor's Employees

- 1) The Contractor shall provide and employ on the Site in connections with the execution and maintenance of the Works.
 - a) Only such technical assistants as are skilled and experienced in their respective fields and such sub-agents, foremen and leading hands as are competent to give proper supervision to the work they are required to supervise, and
 - b) Such skilled, semiskilled and unskilled labour as is necessary for the proper and timely execution and maintenance of the works.
- 2) The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the Works any person employed by the Contractor in or about the execution or maintenance of the Works who, in the opinion of the Engineer, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose employment is otherwise considered by the Engineer to be undesirable and such person shall not be again employed upon the Works without the written permission of the Engineer. Any person so removed from the Works shall be replaced as soon as possible by a competent substitute approved by the Engineer.

17. Setting-out

The Contractor shall be responsible for the true and proper setting-out of the Works in relation to original points, lines and levels or reference given by the Engineer in writing and for the correctness, subject as above mentioned, of the position, levels, dimensions and alignment of all parts of works and for the provision of all necessary instruments, appliances and labour in connection therewith. If, at any time during the progress of the works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do by the Engineer or the Engineer's Representative, shall at his own cost, rectify such error to the satisfaction of the Engineer or the Engineer's Representative. The checking of any setting out or of any line or level by the Engineer or the Engineer's Representative shall not in any way relieve the Contractor of his responsibility for the correctness thereof and the Contractor shall carefully protect and preserve all bench marks, sight-rails, pegs and other things used in setting-out the Works. Any rectification works required to be done by the Contractor shall be at the Contractor's own cost.

18. Boreholes and Exploratory Excavation

If, at any time during the execution of the Works, the Engineer shall require the Contractor to make boreholes or to carry out exploratory excavation, such requirement shall be ordered in writing and shall be deemed to be an addition ordered under the provisions of Clause 51 hereof

unless a provisional sum in respect of such anticipated work shall have been included in the Bill of Quantities.

19. Watching and Lighting

The Contractor shall in connection with the Works provide and maintain at his own cost all lights, guards, fencing and watching when and where necessary or required by the Engineer or the Employer, or by any duly constituted authority, for the execution and for the protection of the Works, and/or for the safety and convenience of the public or others.

20. Care of Works

1) From the commencement of the Works until the date stated in the Certificate of Completion for the whole of the Works pursuant to Clause 48 hereof the Contractor shall take full responsibility for the care thereof. Provided that if the Engineer shall issue a Certificate of Completion in respect of any part of the Works the Contractor shall cease to be liable for the care of that part of works from the date stated in the Certificate of Completion in respect of that part and the responsibility for the care of that part shall pass to the Employer. Provided further that the Contractor shall take full responsibility for the care of any outstanding work which he shall have undertaken to finish during the Defects Liability Period until such outstanding work is completed. In case any damage, loss or injury shall happen to the Works, or to any part thereof, from any cause whatsoever, save and except the excepted risks as defined in sub-clause (2) of this Clause, while the Contractor shall be responsible for the care thereof the Contractor shall, at his own cost, repair and make good the same, so that at completion, the Works shall be in good order and condition and in conformity in every respect with the requirements of the Contract and the Engineer's instructions. In the event of any such damage, loss or injury happening from any of the excepted risks, the Contractor shall, if and to the extent required by the Engineer and subjected ways to the provision of Clause 65 hereof repair and make good the same as aforesaid at the cost of the Employer. The Contractor shall also be liable for any damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of completing any outstanding work or complying with his obligations under Clauses 49 or 50 hereof.

Excepted Risks

2) The "excepted risks" are war, hostilities (whether war declared or not), invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, or unless solely restricted to the Contractor or of his sub-Contractors and arising from the conduct of the works, riot, commotion or disorder, or use or occupation by the Employer of any part of the Permanent works, or a cause solely due to the Engineer's design of the works. or ionizing

radiations or contamination by radio-activity from any or other hazardous properties of any explosive, nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive, nuclear assembly or nuclear component thereof, pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds, or any such operation of the forces of nature as an experienced contractor could not foresee, or reasonably make provision for or insure against all of which are herein collectively referred to as "the excepted risks".

21. Insurance of Works, etc.

Without limiting his obligations and responsibilities under Clause 20 hereof, the Contractor shall insure in the joint names of the Employer and Contractor against all loss or damage from whatever cause arising, other than the excepted risks, for which he is responsible under the terms of the Contract and in such manner that the Employer and Contractor are covered for the period stipulated in Clause 20 (1) hereof and are also covered during the Defects Liability Period and for any loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49 and 50 hereof :-

- a) The Works executed or being executed to the estimated contract value thereof plus 10% (to allow for any additional costs and professional fees resulting from the loss or damage) together with the materials for incorporation in the Works at their replacement value.
- b) The Constructional Plant and other things brought on to the Site by the Contractor to the replacement value of such constructional Plant and other things. Such insurance shall be effected with an insurer and in terms approved by the Employer which approval shall not be unreasonably withheld, and the Contractor shall whenever required produce to the Engineer or any other authorized person, policy or policies of insurance and the receipts for payment of the current premiums

22. Damage to Persons and Property

1) The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the Employer against all losses and claims in respect of injuries or damage to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution and of the Works and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation or damages for or with respect to:-

- a) The permanent use or occupation of land or the Works or any part thereof or by the Employer.
- b) The right of the Employer to execute the Works or any part thereof on, over, under or through any land.

c) Injuries or damage to persons or property which are the unavoidable results of the execution or maintenance of the work in accordance with the Contract.

d) Injuries or damage to persons or property resulting from any act or neglect of the Employer, his agents, servants or other contractors, not being employed by the Contractor, or for or in the respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the Contractor, his servants or agents, such part of the compensations as may be just and equitable having regard to the extent of the responsibility of the Employer, his servants or agents or other contractors for damage or injury.

Indemnity by Employer

2) The employer shall indemnify the Contractor against all claims, proceedings, damages, cost, charges & expenses in respect of the pertinent matters referred to in the proviso to sub-clause (1) of the Clause.

23. Third Party Insurance

1) Before commencing the execution of the Works the Contractor, but without limiting his obligations and responsibilities under Clause 22 hereof, shall insure against his liability for any material or physical damage, loss or injury which may occur to any property, including that of the Employer, or to any person, including any employee of the Employer, by or arising out of the execution of the Works or in the carrying out of the Contract, otherwise than due to Clause 22 (1) hereof.

Provisions to Indemnify

2) The terms shall include a provision whereby, in the event of any claim in respect of which the Contractor would be entitled to receive and be indemnified under the policy being brought or made against the Employer, the insurer will indemnify the Employer against such claims and any cost, charges and expenses in respect thereof.

24. Employer Accident or Injury to Workmen

1) The Employer shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other person in the employment of the Contractor, or any sub-contractor, save and except an accident or injury resulting from any act or default of the Employer his agents, or servants. The Contractor shall indemnify and keep indemnified the Employer against all such damages and compensation, save and except as aforesaid, and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

Insurance against Accident, etc. to Workmen

2) The Contractor shall insure against such liability of the nature referred to in Clause 24.1 with an insurer approved by the Employer, which approval shall not be unreasonably withheld, and shall continue such insurance during the whole of the time that any persons are employed by him on the Works and shall when required, produce to the Employer, or the Engineer or the Engineer's Representative such policy of insurance and the receipt for payment of the current premium. Provided always that, in respect of any persons employed by any sub-contractor, the Contractor's obligation to insure as aforesaid under this sub-clause shall be satisfied if the sub-contractor shall have issued against the liability in respect of such persons in such manner that the Employer is indemnified under the policy, but the Contractor shall require such sub-contractor to produce to the Employer or the Engineer or the Engineer's Representative, when required, such policy of insurance and the receipt for the payment of the current premium.

25. Remedy on Contractor's Failure to Insure

If the Contractor shall fail to effect and keep in force the insurances referred to in Clause 21, 22, 23, and 24 hereof, or any other insurance with he may be required to effect under the terms of the Contract, then and in any such case the Employer may effect and keep in force any such insurance and pay such premiums as may be necessary for that purpose and from time to time deduct the amount so paid and any other expenses incurred by the employer as aforesaid from any monies due or which may become due to the Contractor, or recover the same as a debt due from the Contractor. The Contractor shall however, be fully responsible for any consequence arising out of his failure to effect and keep in force the insurances irrespective of whether the Employer effects the insurance as above or not.

26. Giving of Notices and Payment of Fees

1) The Contractor shall give all notices and pay all fees required to be given or paid by any National or State Statute, ordinance, or other Law, or any regulation, or bye law or any local or other duly constituted authority in relation to the execution of the Works and by the rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in anyway by the Works.

Compliance with Statutes Regulation etc.-

2) The Contractor shall conform in all respects with the provisions of any such statute, ordinance or Law as aforesaid and the regulations or bye laws of any local or other duly constituted authority which may be applicable to the Works and with such rules and regulation of public bodies and companies as aforesaid and shall keep the Employer indemnified against all penalties

and liability of every kind for breach of any such Statute, Ordinance or Law, regulation or bye-law.

3) The Employer will repay or allow to the Contractor all such sums as the Engineer shall certify to have been properly payable and paid by the Contractor in respect of such fees other than the fees which the Contract requires the contractor to pay, which fees shall be included in the Contract Sum and/or the rates and prices entered in the relevant contract documents.

27. Fossils etc.

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site of the works shall as between the Employer and the Contractor be deemed to be the absolute property of the Employer. The Contractor shall not take any such article or thing and shall immediately upon discovery thereof and, before removal, acquaint the Engineer's Representative of such discovery and carry out, the Engineer's Representative's order as to the disposal of the same. Whole of the excavated materials shall be the property of the Owner and shall be used or disposed off only as directed by the Engineer or the Engineer's Representative or in accordance with the related provisions in the Contract.

28. Patent Rights and Royalties

The Contractor shall save harmless and indemnify the Employer from and keep the Employer indemnified against all claims and proceedings for or account of infringement or any patent rights, design trademark or name or other protected rights in respect of any Constructional Plant, machine, work, or material used for or in connection with the Works or any of them and from and against all claims, proceedings, damages, cost charges and expenses whatsoever in respect thereof or in relation thereto Except where otherwise specified, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works or any of them.

29. Interference with Traffic and Adjoining Properties

All operations necessary for the execution of the Works shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with the public Convenience, or the access to use and occupation of public or private roads and foot paths or to or of properties whether in the possession of the Employer or of any other person. The Contractor shall save harmless and indemnify the Employer in respect of all claims, proceedings damages, cost, charges and expenses whatsoever arising out of, or in relation to any such matter in so far as the Contractor is responsible there for.

30. Extraordinary Traffic

1) The Contractor shall use every reasonable means to prevent any of the highways or bridges communicating with or on the routes to the Site from being damaged or injured by any traffic of the Contractor or any of his sub-contractors and in particular, shall select routes, choose and use any such extraordinary traffic as will inevitably arise from moving of plant and material from and to the Site shall be limited, as far as reasonably possible, and so that no unnecessary damage or injury may be occasioned to such highways and bridges.

Special Loads

2) Should it be found necessary for the Contractor to move one or more loads or Constructional Plant, machinery or pre-constructed units or parts of unit of work over part of a highway or bridge, the moving whereof is likely to damage any highway or bridge unless special protection or strengthening is carried out, then the Contractor shall before moving the load on to such highway or bridge give notice to Engineer or Engineer's Representative of the weight and other particulars of the loads unless within fourteen days of the receipt of such notice the Engineer shall by counter notice direct that such protection or strengthening is unnecessary, then the Contractor will carry out such proposals or any modification thereof that the Engineer shall require and, unless there is an item or are items in the Bill of Quantities for pricing by the Contractor of the necessary works for the protection or strengthening aforesaid the costs thereof shall be paid by the Employer to the Contractor.

Settlement of Extraordinary Traffic Claims

3) If during the execution of the Works or at any time thereafter the contractor shall receive any claim arising out of the execution of the Works in respect of damage or injury to highways or bridges he shall immediately report the same to the Engineer and thereafter the Employer shall negotiate the settlement of and pay all sum due in respect of such claim, and shall indemnify the Contractor in respect thereof and in respect of all claims, proceedings, damages, cost charges and expenses in relation thereto. Provided always that if and so far as any such claims or part thereof shall in the opinion of the Engineer be due to any failure on the part of the Contractor to observe and perform his obligations under sub-clause (1) and (2) of this Clause, then the amount certified by the Engineer to be due to such failure shall be paid by the Contractor to the Employer.

Water borne Traffic

4) *Where the nature of the Works is such as to require the use by the Contractor of waterborne transport the foregoing provisions of this clause shall be construed as though "highway" included a lock, dock, sea wall or other structure related to a water way and "vehicle" included craft ferry or any transport related to waterborne traffic and shall have effect accordingly.*

31. Opportunities for other Contractors

The Contractor shall, in accordance with the requirements of the Engineer, afford all responsible opportunities for carrying out their work to any other contractors employed by the Employer and their workmen and to the workmen of the Employer and of any other duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the Employer may enter into in connection with or ancillary to the Works. The Contractor will not be paid any compensation on this account.

32. Contractor to keep site clear

During the progress of the Works the Contractor shall keep the Site reasonably free from unnecessary keep the site store or dispose of any Constructional Plant and surplus material and clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.

33. Clearance of Site on Completion LABOUR

On the completion of the works the Contractor shall clear away and remove from the Site all constructional plant, surplus materials, rubbish and Temporary Works of every kind, and leave the whole of the Site and Works clean and in a workman like condition to the satisfaction of the Engineer. However during execution, the plant and equipment brought by the Contractor cannot be removed from the site without the express permission of the Engineer.

34. Engagement of Labour and Workmen

1) The Contractor shall make his own arrangements for the engagement of all labour and workmen local or otherwise, and save, insofar as the Contract otherwise provides, for the transport, housing feeding and payment thereof. The Contractor shall strictly comply with all the labour laws, regulations, etc. in force and applicable to the labour employed by him or his sub-contractors including those working on labour-ratebasis on the Works.

Supply of Water

2) The Contractor shall provide water for the use of the Contractor's staff and workpeople.

Alcoholic Liquor or Drugs

3) The Contractor shall not, otherwise an in accordance with the Statutes, Ordinances and Government Regulations or Orders for the time being in force, consume, import, sell, give, barter or dispose any alcoholic liquor or drugs by himself or his sub-contractors, agents or employees of the Contractor and his sub-contractor.

Arms and Ammunitions

4) The Contractor shall not give, barter or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

Festivals and Religious Customs

5) The Contractor shall in all dealings with labour and workmen in his employment, have due regard to all recognized festivals, day of rest and religious or other customs.

Epidemics

6) In the event of any outbreak of illness of an epidemic nature the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government, or the Local medical or sanitary authorities for the purpose of dealing with and overcoming the same at his own cost.

Disorderly Conduct, etc.

7) The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or against his employees and for the preservation of peace and protection of persons and property in the neighborhood of the Works against the same.

Observance by Sub-Contractors

8) The Contractor shall be responsible for observance by his sub-contractors of the foregoing provisions.

35. Labour, etc. Returns of

The Contractor shall, if required by the Engineer's Representative or at his office, furnish a return in detail in such form and at such intervals as the Engineer may prescribe showing the supervisory staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such information regarding Constructional Plant that the Engineer's Representative may require.

36. MATERIALS AND WORKMANSHIP

Quality of Materials and Workmanship and Tests

1) All materials and workmanship shall be of the respective kinds described in the contract and in accordance with the Engineer's instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication or on the Site or at such other places or places as maybe specified in the Contract, or at all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used and shall supply samples of materials before incorporation in the Works for testing as maybe selected and required by the Engineer. The Contractor shall utilize local materials to the extent possible and practicable.

Cost of Samples

2) All samples shall be supplied by the Contractor at his own cost if the supply thereof is clearly intended by or provided for in the Contract, but if not, then at the cost of the Employer.

Cost of Tests

3) The cost of making any test shall be borne by the Contractor if such test is clearly intended by or provided for in the Contractor is necessary for ascertaining the quality of materials intended to be used by the Contractor in the Works and in the cases only of a test under load or of a test to ascertain whether the design of any finished or partially finished work is appropriate for the purposes which it was intended to fulfill, is particularized in the Contract.

Cost of Tests not provided for, etc.

4) If any test is ordered by the Engineer which is either a) not so intended by or provided for, or b) (in the cases above mentioned) is not so particularized or c) though so intended or provided for is ordered by the Engineer to be carried out by an independent person at anyplace other than the Site or the place of manufacture or fabrication of the materials tested then the cost of such test shall be borne by the Contractor, if the test shows the workmanship or materials not to be in accordance with the provisions of the Contract or the Engineer's instructions but otherwise by the Employer.

37. Inspection of Operations

The Engineer, the Employer and any person authorised by them shall at all times have access to the Works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the Works and the Contractor shall afford every facility for and every assistance in or in obtaining the right to such access.

38. Examination of work before covering up

1) No Works shall be covered up or put out of view without the approval of the Engineer or the Engineer's Representative and the Contractor shall afford full opportunity for the Engineer or the Engineer's Representative to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. The Contractor shall give due notice to the Engineer's Representative whenever any such work or foundations is or ready or about to be ready for examination and the Engineer's Representative shall, without unreasonable delay, unless he considers it unnecessary and advises the Contractor accordingly, attend for purpose of examining and measuring such work or of examining such foundations.

Uncovering and Making Openings

2) The Contractor shall uncover any part or parts of the Works or make openings in or through the same as the Engineer may from time to time direct and shall reinstate and make good such part or parts to the satisfaction of the Engineer. If any such part or parts have been covered up or put of view after compliance with the requirements of sub-clause (1) of this Clause and are found to be executed in accordance with the Contract, the expenses of uncovering, making, openings in or through, reinstating and making good the same shall be borne by the Employer but in any other case all costs shall be borne by the Contractor.

39. Removal of Improper Work and Materials

1) The Engineer shall during the progress of the Works have power to order in writing from time to time:

- a) the removal from the Site, within such time or times as may be specified in the order, of any materials which, in the opinion of the Engineer, are not in accordance with the Contract.
- b) the substitution of proper and suitable materials and :
- c) the removal and proper re-execution, notwithstanding any previous test thereof or interim payment there for, of any-work which in respect of materials or workmanship is not, in the opinion of the Engineer, in accordance with the Contract.

Defaults of Contractor in Compliance

2) In case of default on the part of the contractor in carrying out such-order, the Employer shall be entitled to employ and pay other persons to carry out the same and all expenses consequent thereon or incidental thereto shall be recoverable from the contractor by the Employer or may be deducted by the Employer from any monies due or which may become due to the Contractor.

40. Suspension of Works

1) The Contractor shall, on the written order of upon being so required by the Employer and the Engineer, suspend the progress of the Works or any part thereof for such time or times and in such manner as the Engineer Employer may consider necessary and shall during such suspension properly protect and secure the work, so far as is necessary in the opinion of the Engineer. The extra cost incurred by the Contractor in giving effect to the above Engineer Employer's instructions under this Clause shall be borne by the Employer unless such suspension is:

- a) otherwise provided for in the Contract, or
- b) necessary by reason of some default on the part of the Contractor, or
- c) necessary by reason of climatic conditions on the Site, or
- d) necessary for the proper execution of the Works or

for the safety of the Works or any part thereof in so far as such necessity does not arise from any act or default by the Engineer or the Employer or from any of the excepted risks defined in Clause 20 hereof. Provided that the Contractor shall not be entitled to recover any such extra cost unless he gives written notice of his intention to claim to the Engineer within twenty-eight days of the Engineer's order. The Engineer shall *in consultation with the Employer* settle and determine such extra payment and/or extension of time under Clause 44 hereof to be made to the Contractor in respect of such claim as shall, in the opinion of the Engineer, be fair and reasonable, and *provided* the Contractor has taken all steps to mitigate the losses.

Suspension lasting more than 90 days

2) If the progress of the Works or any part thereof is suspended on the written order of the Engineer being so required by the Employer and Engineer and if permission to resume work is not given by the Employer and Engineer within a period of ninety days from the date of suspension then, unless such suspension is within paragraph (a), (b), (c) or (d) of sub-clause (1) of this Clause, the Contractor may serve a written notice on the Employer and Engineer requiring permission within twenty-eight days from the receipt thereof to proceed with the Works or that part thereof in regard to which progress is suspended and, if such permission is not granted within that time, the Contractor by a further written notice so served may, but is not bound to, elect or treat the suspension whereof it affects part only of the Works as an omission of such part under Clause 51 hereof, or, where it affects the whole Works, as an abandonment of the Contract by the Employer.

41. COMMENCEMENT TIME AND DELAYS

Commencement of Works

The Contractor shall commence the Works on Site within the period named in the Appendix to the Bid after the receipt by him of a written order to this effect from the Engineer and shall proceed with the same with due expedition and without delay. The Contractor will complete the construction of temporary offices, stores, labour huts etc. and mobilize substantially during the period stated in Appendix to the Bid.

42. Possession of Site

1) Save in so far as the Contract may prescribe, the extent of portions of the Site of which the Contractor is to be given permission from time to time and the order in which such portions shall be made available to him and subject to any requirement in the Contract as to the order in which the Works shall be executed, the Employer will, with the Engineer's written order to commence the Works, give to the Contractor possession of so much of the Site as may be required to enable the Contractor to commence and proceed with the execution of the Works in accordance with the

programme or revised programme referred to in Clause 14 hereof, if any, and otherwise in accordance with such reasonable proposals of the Contractor as he shall, by written notice to the Engineer, make and will, from time to time as the Works proceed, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the execution of the Works with due dispatch in accordance with the said programme or proposals, as the case may be. If the Contractor suffers delay or incurs cost from failure on the part of the Employer to give possession in accordance with the terms of this Clause, the Engineer shall grant an extension of time for the completion of the Works and certify such sum as, in his opinion, shall be fair to cover the cost incurred, which sum shall be paid by the Employer.

Way -leaves etc.

2) The Contractor shall bear all costs and charges for special or temporary way-leaves required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional accommodation outside the Site required by him for the purposes of the Works.

43. Time for Completion

Subject to any requirement in the Contract as to completion of any section of the Works before completion of the whole, the whole of the Works shall be completed, in accordance with the provisions of Clause 48 hereof, within the time stated in the Contract calculated from the last day of the period named in the Appendix to the Bid as that within which the works are to be commenced or such extended time as may be allowed under Clause 44 hereof.

Time is the Essence of the Contract.

44. Extension of Time for Completion

Should the amount of extra or additional work of any kind or any cause of delay referred to in these Conditions or exceptional adverse climatic conditions or other special circumstances of any kind whatsoever which may occur, other than through a default of the Contractor. Be such as fairly to entitle the Contractor to an extension of time for the completion of the Works, the Engineer shall determine the amount of such extension and shall notify the Employer and the Contractor accordingly. Provided that the Engineer is not bound to take into account any extra or additional work or other special circumstances unless the Contractor has within twenty-eight days after such work has been commenced or such circumstances have arisen or an soon thereafter as is practicable, submitted to the Engineer's Representative full and detailed particulars of any extension of time to which he may consider himself entitled in order that such submission may be investigated at the time. The Contractor, in his application for grant of time shall clearly bring out the financial effect of extension of time requested by him. In case no financial effect is stated in

the request for grant of extension of time, the same shall be taken as zero and it shall be presumed that the Contractor has mitigated whole of the losses due to the delays of all kinds.

45. No Night or Sunday Work

Subject to any provision to the contrary contained in the Contract, none of the Permanent Works shall, save as hereinafter provided, be carried on during the night or on Sundays, if locally recognized as days of rest or their locally recognized equivalent without the permission in writing of the Engineer's Representative except when the work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer's Representative. Provided always that the provisions of this Clause shall not be applicable in the case of any work which it is customary to carry out by rotary or double shifts.

46. Rate of Progress

If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any section is at anytime, in the opinion of the Engineer, too slow to ensure completion by the prescribed time or extended time for completion, the Engineer shall so notify the Contractor in writing and the Contractor shall thereupon take such steps as are necessary and the Engineer may approve to expedite progress so as to complete the Works or such section by the prescribed time or extended time. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Engineer under this Clause, the Contractor shall seek the Engineer's permission to do any work at night or on Sundays, if locally recognised as days of rest or their locally recognised equivalent, such permission shall not be unreasonably refused.

47. Liquidated Damages for Delay

1) If the Contractor shall fail to achieve completion of the Works within the time prescribed by Clause 43 hereof, then the Contractor shall pay to the Employer the sum stated in the Contract as liquidated damages for such default and not as a penalty for every day or part of a day which shall elapse between the time prescribed by Clause 43 hereof and the date of certified completion of the Works. The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies in his hands, due or which may become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works or from any other of his obligations and liabilities under the Contract.

Reduction of Liquidated Damages

2) If, before the completion of the whole of the Works any part or sections of the Works has been certified by the Engineer as completed, pursuant to Clause 48 hereof, and occupied or used by the Employer, the liquidated damages for delay shall, for any period of delay after such certificate and in the absence of alternative provisions in the Contract be reduced in the proportion which the value of the part or section so certified bears to the value of the whole of the Works.

Bonus for Completion

3) If it is desired to provide in the Contract for the payment of a bonus in relation to completion of the Works or of any part or section thereof, this shall be set out in Part-II in the Special Conditions of Contract.

48. Certification of Completion of Works

1) When the whole of the Works have been substantially completed and have satisfactorily passed any final test that may be prescribed by the Contract, the Contractor may give a notice to that effect to the, Engineer or to the Engineer's Representative accompanied by an undertaking to finish any outstanding work during the Defects Liability Period. Such notice and undertaking shall be in writing and shall be deemed to be a request by the Contractor for the Engineer to issue a Certificate of Completion in respect of the works. The Engineer shall, within twenty-one days of the date of delivery of such notice either issue to the Contractor, with a copy to the Employer, a Certificate of Completion stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract or give instructions in writing to the Contractor specifying all the work which, in the Engineer's opinion, requires to be done by the Contractor before the issue of such Certificate. The Engineer shall also notify the Contractor of any defects in the works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein. The Contractor shall be entitled to receive such Certificate of Completion within twenty-one days of completion to the satisfaction of the Engineer of the Works so specified and making good any defects so notified. The Contractor shall nevertheless, remain liable for rectification of further defects, if any, noticed during the Defects Liability Period stated in Clause 49 hereof.

Certification of Completion by Stages

2) Similarly, in accordance with the procedure set out in Sub-clause (1) of this Clause, the Contractor may request and the Engineer shall issue a Certificate of Completion in respect of:

a) Any section of the Works in respect of which a separate time for completion is provided in the Contract: and

b) Any substantial part of the Works which has been both completed to the satisfaction of the Engineer and occupied or used by the Employer.

3) Provided always that a Certificate of Completion given in respect of any section or part of the Works before completion of the whole shall not be deemed to certify completion of any ground or surfaces requiring reinstatement, unless such Certificate shall expressly so state.

49. DEFECTS AFTER COMPLETION

Definition of Defects Liability Period

1) In these Conditions the expression "Defects Liability Period" shall mean the period of three hundred sixty five days calculated from the date of completion of the Works, certified by the Engineer in accordance with Clause 48 hereof, or in the event of more than one certificate having been issued by the Engineer under the said Clause, from the respective dates so certified and in relation to the Defects Liability Period the expression "the Works" shall be construed accordingly.

Execution of Work of Repair etc.

2) Any defects, shrinkage, settlement or other faults which may appear or be noticed within the Defect Liability Period, and a rising in the opinion of the Engineer from materials or workmanship not having in accordance with the Contract, shall upon the direction in writing of the Engineer and within such reasonable time as shall be specified therein, be amended and made good by the contractor at his own cost.

Cost of Execution of Work of Repair, etc

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

Remedy on Contractor's failure to carryout work required

4) If the Contractor shall fail to do any such work as aforesaid required by the Engineer, the Employer shall be entitled to employ and pay other persons to carry out the same and if such work is work which, in the opinion of the Engineer, the Contractor was liable to do at his own expense under the Contract, then all expenses consequent thereon or incidental thereto shall be recoverable from the Contractor by the Employer or may be deducted by the Employer from any monies due or which may become due to the Contractor.

50. Contractor to Search

The Contractor shall if required by the Engineer in writing, search under the directions of the Engineer for the cause of any defect, imperfection or fault appearing during the progress of the Works or during the Defects Liability Period. Unless such defect, imperfection or fault shall be one for which the Contractor is liable under the Contract, the cost of the work carried out by the Contractor in searching as aforesaid shall be borne by the Employer. If such defect, imperfection or fault shall be one for which the Contractor is liable as aforesaid, the cost of the work carried out in searching as aforesaid shall be borne by the Contractor and he shall in such case repair, rectify and make good such defect, imperfection or fault at his own expense in accordance with the provisions of Clause 49 hereof.

51. ALTERATIONS, ADDITIONS AND OMISSIONS Variations

1) The Engineer shall make any variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose or if for any other reason it shall, in his opinion be desirable, he shall have power to order the Contractor to do and the Contractor shall do any of the following:-

- a) increase or decrease the quantity of any work included in the Contract,
- b) omit any such work,
- c) change the character or quality or kind of any such work,
- d) change the levels, lines, positions and dimensions of any part of the Works, and
- e) execute additional work of any kind necessary for the completion of the Works and no such variation shall in any way vitiate or invalidate the Contract, but the price, if any, of all such variations shall be taken into account in ascertaining the amount of the Contract Sum. The Contractor shall not be entitled to any compensation on account of omission or decrease in Work under this clause.

Orders for variations to be in writing

2) No such variations shall be made by the Contractor without an order in writing by the Engineer. Provided that no order in writing shall be required for increase or decrease in the quantity of any-work where such increase or decrease is not the result of an order given under this Clause, but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities. Provided also that if for any reason the Engineer shall consider it desirable to give any such order verbally, the Contractor shall comply with such order and any confirmation in writing of such verbal order given by the Engineer, whether before or after the carrying out of the order, shall be deemed to be an order in writing within the meaning of this Clause. Provided further that if the Contractor shall within seven days confirm in writing to the Engineer and such confirmation

shall not be contradicted in writing within fourteen days by the Engineer, it shall be deemed to be an order in writing by the Engineer.

52. Valuation of Variations

1) All extra or additional work done or Work omitted by order of the Engineer shall be priced at the rates and prices set out in Part-II of Special Conditions of Contract.

Power of Engineer to Fix Rates

2) Provided that if the nature or amount of any omission or addition relative to the nature or amount of the whole of the Works or to any part thereof shall be such that, in the opinion of the Engineer, the rate or price contained in the Contract for any item of the Works is, by reason of such omission or addition, rendered unreasonable or inapplicable, then a suitable rate or price shall be agreed upon between the Engineer and the Contractor. In the event of disagreement, the Engineer shall fix such other rate or price as shall, in his opinion be reasonable & proper having regard to the circumstances. Provided also that no increase or decrease under Sub-clause (1) of this Clause or variation of rate or price under Sub-clause (2) of this Clause shall be made unless, as soon after the date of the order as is practicable and, in the case of extra or additional work, before the commencement of the work or as soon thereafter as is practicable, notice shall have been given in writing:-

- a) by the Contractor to the Engineer of his intention to claim extra payment or a varied rate or price, or
- b) by the Engineer to the Contractor of his intention to vary a rate or price.

Day-work

3) The Engineer may, in his opinion if it is necessary or desirable, order in writing that any additional or substituted Work shall be executed on a day work basis. The Contractor shall then be paid for such Work under the conditions set out in the Day work Schedule included in the Contract and at the rates and prices affixed thereto by him in his Bid. The Contractor shall furnish to the Engineer such receipts or other vouchers as may be necessary to prove the amounts paid and, before ordering materials, shall submit to the Engineer quotations for the same for his approval. In respect of all work executed on a day work basis, the Contractor shall, during the continuance of such work, deliver each day to the Engineer's Representative an exact list induplicate of the names, occupation and time of all workmen employed on such work and a statement, also in duplicate, showing the description and quantity of all materials and plant used thereon or there for (other than plant which is included in the percentage addition in accordance with the Schedule hereinbefore referred to). One copy of each list and statement will, if correct, or when agreed, be signed by the Engineer's Representative and returned to the Contractor.

At the end of each month, the Contractor shall deliver to the Engineer's Representative a priced statement of the labour, material and plant except as aforesaid, used and the Contractor shall not be entitled to any payment unless such lists and statements have been fully and punctually rendered. Provided always that if the Engineer shall consider that for any reason the sending of such lists or statements by the Contractor, in accordance with the foregoing provision, was impracticable he shall nevertheless be entitled to authorize payment for such work, either as day work on being satisfied as to the time employed and plant and materials used on such work or at such value therefore as shall, in his opinion, be fair and reasonable.

Claims

4) The Contractor shall send to the Engineer's Representative once in every month an account giving particulars, as full and detailed as possible, of all claims for any additional payment to which the Contractor may consider himself entitled and of all extra or additional work ordered by the Engineer which he has executed during the preceding month. No final or interim claim for payment for any such work or expense will be considered which has not been included in such particulars. Provided always that the Engineer shall be entitled to authorize payment to be made for any such work or expense, notwithstanding the Contractor's failure to comply with this condition if the Contractor has, at the earliest practicable opportunity, notified the Engineer in writing that he intends to make a claim for such work.

53. PLANT, TEMPORARY WORKS AND MATERIALS Plant, etc.

Exclusive use for the Works

1) All Constructional Plant, Temporary Works and materials provided by the Contractor shall, when brought on to the Site, be deemed to be exclusively intended for the execution of the Works and the Contractor shall not remove the same or any part thereof except for the purpose of moving it from one part of the Site to another, without the consent, in writing of the Engineer, which shall not be unreasonably withheld. Upon receiving the consent of the Engineer, the Contractor shall apply for issue of Gate Pass etc. to the Employer so as to observe the administrative and security procedures, if any, set by the Employer.

Removal of Plant, etc.

2) Upon completion of the Works, the Contractor shall remove from the Site all the said Constructional Plant and Temporary Works remaining thereon and any unused materials provided by the Contractor.

Employer not liable for damage to Plant, etc.

3) The Employer shall not at any time be liable for the loss or damage to any of the said Constructional Plant and temporary works or materials save as mentioned in Clauses 20 and 65 hereof.

54. Approval of Materials etc. not implied

The operation of Clause 53 hereof shall not be deemed to imply any approval by the Engineer of the materials or other matters referred to therein nor shall it prevent the rejection of any such

55. MEASUREMENT**Quantities**

The quantities set out in the bill of Quantities are the estimated quantities of the Work but they are not to be taken as the actual and correct quantities of the Works to be executed by the Contractor in fulfillment of his obligations under the Contract.

56. Works to be Measured

The Engineer shall, except as otherwise stated, ascertain and determine by measurement the value in terms of the Contract of work done in accordance with the Contract. He shall, when he requires any part or parts of the Works to be measured, give notice to the Contractor's authorized agent or representative, who shall forthwith attend or send a qualified agent to assist the Engineer or the Engineer's Representative in making such measurement and shall furnish all particulars required by either of them. Should the Contractor not attend or neglect or omit to send such agent, then the measurement made by the Engineer or approved by him shall be taken to be the correct measurement of the work. For the purpose of measuring such permanent work as is to be measured by records and drawings, the Engineer's Representative shall prepare records and drawings month by month of such work and the Contractor, as and when called upon to do so in writing shall, within fourteen days, attend to examine and agree such records and drawings with the Engineer's Representative and shall sign the same when so agreed. If the Contractor does not so attend to examine and agree such records and drawings, they shall be taken to be correct. If, after examinations of such records and drawings, the Contractor does not agree the same or does not sign the same as agreed, they shall nevertheless be taken to be correct, unless the Contractor shall, within fourteen days of such examination, lodge with the Engineer's Representative, for decision by the Engineer, notice in writing of the respects in which such records and drawings are claimed by him to be incorrect.

57. Method of Measurement

The Works shall be measured net, notwithstanding any general or local custom except where otherwise specifically described or prescribed in the Contract.

58. PROVISIONAL SUMS Definition of “Provisional Sums”

1) "Provisional Sum" means a sum included in the Contract and so designated in the Bill of Quantities for the execution of work or the supply of goods, materials or services or for contingencies, which sum may be used, in whole or in part, or not at all, at the direction and discretion of the Engineer. The Contract sum shall include only such amounts in respect of the work, supply or services to which such Provisional Sums relate as the Engineer shall approve or determine in accordance with this Clause.

Use of Provisional Sums

2) In respect of every Provisional Sum the Engineer shall have power to order:- a) Work to be executed including goods, materials or services to be supplied by the Contractor. The Contract Sum shall include the price of such work executed or such goods, materials or services supplied, determined in accordance with Clause 52 thereof.

b) Work to be executed or goods, materials or services to be supplied by a nominated Sub-Contractor as herein after defined. The sum to be paid to the Contractor therefore shall be determined and paid in accordance with Clause 59 (4) hereof.

c) Goods and materials to be purchased by the Contractor. The sum to be paid to the Contractor therefore shall be determined and paid in accordance with Clause 59(4) hereof.

Production of Vouchers, etc.

3) The Contractor shall, when required by the Engineer, produce all quotations, invoices, vouchers and accounts or receipts or estimates in connection with expenditure in respect of Provisional Sums, prior to executing the work for which such Provisional Sum(s) have been allocated and shall commence such works only after exact expenditure is agreed & the work properly ordered on the Contractor by the Engineer.

59. NOMINATED SUB-CONTRACTORS

Definition of

“Nominated Sub-Contractor”

1) All specialists, and others executing any work or supplying any goods, materials or services of specialized nature which are included in the Contract, who may have been or be nominated or selected or approved by the Employer or the Engineer, for the execution of such work or the supply of such goods, materials or services, be deemed to be sub-contractors employed by the

Contractor on nomination by the Employer and are referred to in this Contract as "Nominated Sub-Contractors".

Nominated Subcontractors

Objections to Nomination

2) The Contractor shall not be required by the Employer or the Engineer or be deemed to be under any obligation to employ any nominated Sub-Contractor against whom the Contractor may raise reasonable objection, or who shall decline to enter into a sub-contract with the Contractor containing provisions:-

a) that in respect of the work, goods, materials or services the subject of the sub-contract, the nominated sub-contractor will undertake towards the Contractor the like obligations and liabilities as are imposed on the Contractor towards the Employer by the terms of the Contract and will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection therewith or arising out of or in connection with any failure to perform such obligations or to fulfill such liabilities

b) that the nominated Sub-Contractor will save harmless and indemnify the Contractor from and against any negligence by the nominated Sub-Contractor, his agents, workmen and servants and from and against and misuse by him or them of any Constructional Plant or the Works provided by the Contractor for the purposes of the Contract and from all claims as aforesaid.

Design Requirement to be Expressly Stated

3) If in connection with any Provisional Sum the services to be provided include any matter of design or specification of any part of the Works or of any equipment or plant to be incorporated therein, such requirement shall be expressly stated in the contract and shall be included in any Nominated Sub-Contract. The Nominated Sub-Contract shall specify that the Nominated Sub-Contractor providing such services will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection with any failure so perform such obligations or to fulfill such liabilities.

Payments to Nominated Subcontractors

4) For all Work executed or goods, materials or services supplied by any nominated Sub-Contractor, there shall be included in the:-

Contract Sum:-

a) the actual price paid or due to be paid by the Contractor, on the direction of the Engineer, and in accordance with-the Sub-Contract;

b) the sum, if any, entered in the Bill of Quantities for labour supplied by the Contractor in connection herewith, or If ordered by the Engineer pursuant to Clause 58 (2) (b)hereof, as may be determined in accordance with Clause52hereof.

c) in respect of all other charges and profit, a sum being a percentage rate of the actual price paid or due to be paid calculated, where provision has been made in the Bill of Quantities for a rate to be set against the relevant Provisional Sum, at the rate inserted by the Contractor against that item or, where no such provision has been made, at the rate inserted by the Contractor in the Appendix to the Bid and repeated where provision for such is made in a special item provided in the Bill of Quantities for such purpose.

Certification of Payments to Nominated Sub-Contractors

5) Before issuing, under Clause 60 hereof, any certificate, which includes any payment in respect of work done or goods, materials or service supplied by any Nominated Sub-Contractor, the Engineer shall be entitled to demand from the Contractor reasonable proof that all payments, less retention, included in previous certificates in respect of the work or goods, materials or services of such Nominated Sub-Contractor have been paid or discharged by the Contractor, in default whereof unless the Contractor shall

a) Inform the Engineer in writing that has reasonable cause for withholding or refusing to make such payments and

b) Produce to the Engineer reasonable proof that he has so informed such Nominated Sub-Contractor in writing. The Employer shall be entitled to pay to such Nominated Sub-Contractor direct, upon the certificate of the Engineer, all payments, less retention, provided for in the Sub-Contract, which the contractor has failed to make to such Nominated Sub-Contractor and to deduct by way of set-off, the amount so paid by the Employer from any sums due or which may become due from the Employer to the Contractor. Provided always that, where the Engineer has certified and the Employer has paid direct as aforesaid, the Engineer shall in issuing any further certificate in favour of the Contractor deduct from the amount thereof the amount so paid, direct as aforesaid, but shall not withhold or delay the issue of the certificate itself when due to be issued under the terms of Contract.

Assignment of Nominated Sub-Contractors Obligations

6) In the event of a Nominated Sub-Contractor, as herein before defined, having undertaken towards the Contractor in respect of the work executed, or the goods, materials or services supplied by such Nominated Sub-Contractor, any continuing obligation extending for a period exceeding that of the Defects Liability Period under the Contract, the Contractor shall at any time,

after the expiration of the Defects Liability Period, assign to the Employer, at the Employer's request and cost, the benefit of such obligation for the unexpired duration thereof.

60. CERTIFICATES AND PAYMENT

Certificates and Payment

1) Unless otherwise provided, payments shall be made as per terms of payment set forth in the Bid document.

Advances on Construction Plant and Materials

2) Where advances are to be made by the Client to the Contractor in respect of Constructional Plant and Materials, the conditions of payment and repayment shall be as set out in Part-II in the Special Conditions of Contract.

61. Approval only by Certificate of Final Completion

No certificate other than the Certificate of Final Completion referred to in Clause 62 hereof shall be deemed to constitute approval of the works.

62. Certificate of Final Completion

1) The Contract shall not be considered as completed until a Certificate of Final Completion shall have been signed by the Engineer and delivered to the Employer stating that the Works have been completed and maintained to his satisfaction. The Certificate for Final Completion shall be given by the Engineer within twenty-eight days after the expiration of the Defects Liability Period, or, if different Defect Liability Periods shall become applicable to different sections or parts of the Works, the expiration of the latest such period, or as soon thereafter as any works ordered during such period pursuant to Clauses 49 and 50 hereof, shall have been completed to the satisfaction of the Engineer and full effect shall be given to this Clause notwithstanding any previous entry on the Works or the taking possession, working or using thereof or any part thereof by the Employer. Provided always that the issue of the Certificate of Final Completion shall not be a condition precedent to payment to the Contractor of the second portion of the retention money in accordance with the conditions set out in Part II of Special Conditions of Contract.

Cessation of the Employer's Liability

2) The Employer shall not be liable to the Contractor for any matter or thing arising out of or in connection with the Contract or the execution of the works, unless the Contractor shall have made a claim in writing in respect thereof as per Clause 52 (4) hereof, before the giving of Certificate of Final Completion.

Unfulfilled Obligations

3) Notwithstanding the issue of the Certificate of Final Completion the Contractor and, subject to sub-clause (2) of this clause, the Employer shall remain liable for the fulfillment of any obligation

incurred under the provisions of the Contract prior to the issue of the Certificate of Final Completion which remains unperformed at the time such certificate is issued and for the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties hereto.

63. REMEDIES AND POWERS

Default of Contractor

1) If the Contractor shall become bankrupt or have a receiving order made against him, or shall present his petition in bankruptcy, or shall make an arrangement with or assignment in favour of his creditors, or shall agree to carry out the contract under committee of inspection of his creditors or, being a corporation, shall go into liquidation (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or if the Contractor shall assign the Contract, without the consent in writing of the Employer first obtained, or shall have an execution levied on his goods, or if the Engineer shall certify in writing to the Employer that in his opinion the Contractor:-

- a) has abandoned the Contract, or
- b) without reasonable excuse has failed to commence the Works or has suspended the progress of the Works for twenty-eight days after receiving from the Engineer written notice to proceed, or
- c) has failed to remove materials from the site or to pull down and replace work for twenty eight days after receiving from the Engineer written notice that the said materials or work had been condemned and rejected by the Engineer under these conditions, or
- d) despite previous warnings by the Engineer, in writing, is not executing the Works in accordance with the Contract, or is persistently or flagrantly neglecting to carry out his obligations under the Contract, or
- e) has, to the detriment of good workmanship, or in defiance of the Engineer's instructions to the contrary, sublet any part of the Contract then the Employer may, after giving fourteen days notice in writing to the Contractor, enter upon the site and the Works and expel the Contractor there from without thereby voiding the Contract, or releasing the Contractor from any of his obligations or liabilities under the Contract, or affecting the rights and powers conferred on the Employer or the Engineer by the Contract, and may himself complete the Works or may employ any other agency to complete the Works. The Employer or such other agency may use for such completion so much of the Constructional Plant, amenities and materials, which have been deemed to be reserved exclusively for the execution of the Works, under the provisions of the Contract, as he or they may think proper. The Employer, at his option, may sell or choose to return to the Contractor, without prejudice to any of his rights under the Contract, the said Constructional

Plant, amenities and unused materials. In case of sale the sale proceeds shall be applied towards the satisfaction of any sums due or which may become due from the Contractor under the Contract. The return of the Constructional Plants, amenities and unused materials to the Contractor by the Employer, shall be without prejudice to the right of the Employer to recover his dues from the Contractor by any other means available to the Employer.

Valuation on Date of Forfeiture

2) The Engineer shall, as soon as may be practicable after any such entry and expulsion by the Employer, fix and determine ex parte, or by or after reference to the parties, or after such investigation or inquiries as he may think fit to make or institute and shall certify what amount, if any, had at the time of such entry and expulsion been reasonably earned by or would reasonably accrue to the Contractor in respect of work then actually done by him under the Contract and the value of any of the said unused or partially used materials, any Constructional Plant and any amenities brought into existence exclusively for execution of the Works.

Payment after Forfeiture

3) If the Employer shall enter and expel the Contractor under this Clause, he shall not be liable to pay to the Contractor any money on account of the Contract, until the expiration of the Defects Liability Period and thereafter until the costs of execution, damages for delay in completion, if any, and all other expenses incurred by the Employer have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sum or sums, if any, as the Engineer may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount shall exceed the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall, upon demand, pay to the Employer the amount of such excess and it shall be deemed a "debt due" by the Contractor to the Employer and shall be recoverable accordingly.

64. Urgent Repairs

If, by reason of any accident, or failure, or other event occurring to or in connection with the Works, or any part thereof, either during the execution of the works, or during period of Defects Liability any remedial or other work or repair, shall, in the opinion of the Engineer or the Engineer's Representative, be urgently necessary for the safety of the Works and the Contractor is unable or unwilling at once to do such work or repair, the Employer may employ and pay other persons to carry out such work or repair as the Engineer or the Engineer's Representative may consider necessary. If the work or repair so done by the Employer is the work which, in the opinion of the Engineer the Contractor was liable to do at his own expense under the Contract, all expenses properly incurred by the Employer in so doing shall be recoverable from the Contractor

by the Employer, or may be deducted by the Employer from any monies due or which may become due to the Contractor. Provided always that the Engineer or the Engineer's Representative, as the case may be, shall, as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof in writing.

65. SPECIAL RISKS No Liability for War, etc.

Risks

Notwithstanding anything in the Contract contained

1) The Contractor shall be under no liability whatsoever whether byway of indemnity or otherwise, for or in respect of destruction of or damage to the Works, save to work condemned under the provisions of Clause 39 hereof prior to the occurrence of any special risk hereinafter mentioned, or to property whether of the Employer or third parties, or for or in respect of injury or loss of life which is the consequence of any special risk as herein after defined. The Employer shall indemnify and save harmless the contractor against and from the same and against and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising there out or in connection therewith.

Damage to Works, etc. by:-

Special Risks

2) If the works or any materials on or near or in transit to the Site or any other property of the Contractor used or intended to be used for the purpose of the Works, shall sustain destruction or damage by reason of any of the said special risks the Contractor shall be entitled to payment for:-

a) any part of the Work and for any materials so destroyed or damaged, and so far as may be required by the Engineer, or as may be necessary for the completion of the Works, on the basis of cost plus such percentage as stated in Part II of the Special conditions of Contract with reference to Clause 52 hereof.

b) replacing or making good any such destruction or damage to the Works;

c) replacing or making good such materials or other property of the contractor used or intended to be used for the purposes of the Works.

Projectile, Missile etc

3) Destruction damage, injury or loss of life caused by the explosion or impact whenever and wherever occurring of any mine, bomb, shell, grenade, or other projectile, missile, ammunition or explosive of war, shall be deemed to be a consequence of the said special risks.

Increased Costs arising from Special Risks

4) The Employer shall repay to the Contractor any increased cost of or incidental to the execution of the Works other than such as maybe attributable to the cost of reconstructing work condemned

under the provisions of Clause 39 hereof, prior to the occurrence of any special risk, which is howsoever attributable to or consequent on or the result of or in any way whatsoever connected with the said special risk, subject however to the provisions in this Clause hereinafter contained in regard to outbreak of war, but the Contractor shall as soon as any such increase of cost shall come to his knowledge within seven days of such increase coming to his knowledge, notify the Engineer thereof in writing.

Special Risks

5) The special risks are war, hostilities (whether war be declared or not), invasion act of foreign enemies, the nuclear and pressure waves, risk described in Clause 20(2) hereof, or insofar as it relates to the country in which the Works are being or are to be executed or maintained, rebellion, revolution, insurrection, military or usurped power and civil war.

Outbreak of War

6) If, during the currency of the Contract, there shall be an outbreak of war, whether war is declared or not, in any part of the world which, whether financially or otherwise, materially affects the execution of the works, the contractor shall, unless and until the contract is terminated under the provisions of this clause, continue to use his best endeavors to complete the execution of the Works. Provided always that the Employer shall be entitled at any time after such outbreak of war to terminate the Contract by giving written notice to the Contractor and, upon such notice being given this contract shall except as to the rights of the parties under this Clause and to the operation of Clause 67 hereof, terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof.

Removal of Plant on Termination

7) If the Contract shall be terminated under the provisions of the last preceding sub-clause, the Contractor shall, with all reasonable despatch, remove from the Site all constructional Plant and shall give similar facilities to his sub-contractors to do so.

Payment of Contract

Termination

8) If the Contract shall be terminated as aforesaid, the Contractor shall be paid by the Employer, insofar as such amounts or items shall not have already been covered by payments on account made to the Contractor, for all work executed prior to the date of termination at the rates and prices provided in the Contract and in addition:-

a) The amounts payable in respect of any preliminary items, so far as the work or service comprised therein has been carried out or performed, and a proper proportion as certified by the

Engineer of any such items, the Work or service comprised in which has been partially carried out or performed.

b) The cost of materials or goods reasonably ordered for the Works which shall have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery, such materials or goods becoming the property of the Employer upon such payments being made by him.

c) A sum to be certified by the Engineer, being the amount of any expenditure reasonably incurred by the Contractor in the expectation of completing the whole of the Works in so far as such expenditure shall not have been covered by the payments in this sub-clause before mentioned.

d) Any additional sum payable under the provisions of sub-clauses (1), (2) and (4) of this Clause.

e) The reasonable cost of removal of Constructional Plant under sub-clause (7) of this Clause and, if required by the Contractor, return thereof to the Contractor's main plant yard in his country of registration or to other destination, at no greater cost.

f) The reasonable cost of repatriation of all the Contractor's staff and workmen employed on or in connection with the Works at the time of such termination.

Provided always that against any payments due from the Employer under this sub-clause, the Employer shall be entitled to be credited with any outstanding balances due from the Contractor for advances in respect of Constructional Plant and materials and any other sums which at the date of termination were recoverable by the Employer from the Contractor under the terms of the contract. The Employer shall also return all Bank Guarantees and retention after proper accounts have been settled between Contractor and the Employer.

66. FRUSTRATION

Payment in Event of Frustration

If a war, or other circumstances outside the control of both parties, arises after the contract is made so that either party is prevented from fulfilling his contractual obligations, or under the law governing the Contract, the parties are released from further performance, then the sum payable by the Employer to the Contractor in respect of the work executed shall be the same as that which would have been payable under Clause 65 hereof, as if the Contract had been terminated under the provisions of Clause 65 hereof. Performance of obligations becoming more onerous shall not be considered as a cause for Frustration

67. SETTLEMENT OF DISPUTES

Excepted Matters

1) Wherever, in any of the documents forming part of the Contract, the Engineer has been vested with the final powers, his decision, opinion, certificate or any other discretion shall be final

conclusive and binding on the parties and shall be without appeal. All other matters shall be subject to the right of arbitration.

Settlement of Disputes and Arbitration

2) Except for matters stated in sub-clause (1) above all other disputes and difference arising out of or in connection with the contract, whether during the progress of work or after completion, shall be referred to and settled by Arbitration by sole Arbitrator to be nominated the Managing Director, ATDC which arbitrators shall, before taking upon themselves, the burden of reference, appoint an Umpire. In the event of the Arbitrators disagreeing, the decision of the Umpire shall, however, be final and binding on both the parties. For the purpose of this clause, the provisions of the Indian Arbitration Act, 1996, with the relevant amendments shall be applicable. None of the clauses of this contract will survive after issue of the Certificate of Final Completion or payment of Final Bill, whichever is later.

68. NOTICES

Service of Notices on Contractor

1) All certificates, notices or written orders to be given by the Employer or by the Engineer to the Contractor under the terms of the Contract shall be served by sending by registered post or by Courier or delivering the same to the Contractor's principal place of business, or such other address as the Contractor shall nominate for this purpose.

Services of Notices on the Employer of the Engineer

2) All notices to be given to the Employer or to the Engineer under the terms of the Contract shall be served by sending by registered post or by Courier or delivering the same to the respective addresses nominated for that purpose in Part II of these conditions.

Change of Address

3) Either party may change a nominated address to another address in the country where the works are being executed by prior written notice to the other party and the Engineer may do so by prior written notice to both parties.

69. DEFAULT OF EMPLOYER:-

Default of Employer

1) In the event of the Employer

a) failing to pay to the Contractor the amount due under any certificate of the Engineer within thirty days after the same shall have become due under the terms of the Contract, subject to any deduction that the Employer is entitled to make under the Contract, or

b) Interfering with or obstructing or refusing any acquired approval to the issue of any such certificate, or

- c) becoming bankrupt or, being a company, going into liquidation, other than for the purpose of a scheme of reconstruction or amalgamation, or
- d) giving formal notice to the Contractor that for unforeseen reasons, due to economic dislocation it is impossible for him to continue to meet his contractual obligations. the Contractor shall be entitled to terminate his employment under the Contract after giving fourteen days' prior written notice to the Employer, with a copy to the Engineer.
- 2) Upon the expiry of the 14 days' notice referred to in sub-clause(1) of this Clause, the Contractor shall, notwithstanding the provisions of Clause 53 (1) hereof, with all reasonable dispatch, remove from the Site all Constructional Plant brought by him thereon.
- 3) In the event of such termination the Employer shall be under the same obligations to the Contractor in regard to payment as if the Contract had been terminated under the provisions of Clause 63hereof, but, in addition to the payments specified in Clause65 (8) hereof, the Employer shall pay to the Contractor the amount of any loss or damage to the Contractor arising out of or in connection with or by consequence of such termination.

70. CHANGES IN COSTS AND LEGISLATION

Statutory variations if any in Value Added Tax (VAT) and Service Tax (ST) on Contract price shall be to the Employer's account

Part II

Special conditions of contract

I N D E X

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CONDITIONS OF CONTRACT

PART – II – SPECIAL CONDITIONS OF CONTRACT

SP.1 GENERAL

SPECIAL CONDITIONS OF CONTRACT of this PART-II shall be read in conjunction with GENERAL CONDITIONS OF CONTRACT in PART-I and both form an integral part of Contract.

Where the two parts are at variance, the conditions stipulated in this PART II as special Conditions shall supersede relevant provisions in General Conditions in PART-I.

SP.2 ENGINEER DEFINITIONS (Ref. Clause 1)

The Engineer and shall be:

SP.3 (Ref. Clause 2) POWERS AND DUTIES OF ENGINEERS

The Engineer has been appointed by and duly authorised by the Employer to supervise, test, examine any materials and/or works, to order, cancel, alter, modify, any of the materials, items or works within the framework of the Contract. To approve/reject requests for modifications in works

or schedule whether or not such orders, approvals, rejections, etc. involve increase or decrease in the costs or time.

The Engineer is further authorised to administer the Contract, check, correct, modify and certify or reject any bill or requests for payment for the materials, items of works.

SP.4 (Ref. Clause 5) LANGUAGE AND LAW

The Ruling language for the Contract and related aspects shall be ENGLISH. The Contract shall be governed by and construed in accordance with Laws of India, for time being in force. The Contractor shall on his own and at his own expense obtain all necessary permits and permissions to execute the job, including required registrations, agents etc. and shall indemnify the Employer in all related matters.

SP.5 (Ref. Clause 8) CONTRACTORS RESPONSIBILITY

SP.5.1 Temporary Works and Arrangements

The Contractor shall furnish to the Engineer full particulars, drawings, etc. of all temporary works necessary for the execution of the works and shall allow sufficient time for Engineer to consider the same. The Engineer reserves the right to comment on the Contractor's proposals if they consider that modifications should be made. The Contractor shall be solely responsible for the stability and safety of all temporary works including obtaining statutory approvals and payment of statutory fees, if any. The Engineer will indicate the site(s) for such temporary works and the Contractor will have to restrict his requirements to the same. Should it be necessary to shift the temporary works to some other allotted place during the executions of the works, the Contractor shall do so, when informed by the Engineer, at his own cost and without delay or demur. Such shifting of temporary works may be in part or in full.

SP.5.2 Initial and Final Clearance of Site for temporary works

The Contractor shall be responsible for the clearance of the site of all scrub, debris, rubbish, etc. to be removed off site to allocation to be provided by the contractor and approved by the Engineer. However, no trees shall be removed without the prior permission of the Engineer. The structures, services and works required to be demolished and removed shall also be removed off site to a location as mentioned above. The Contractor shall obtain necessary permissions and approvals from local authorities for such disposals. The demolition shall include digging, excavating and removal of substructures, foundations and buried works. The cost of all this shall be borne by the Contractor.

The above is applicable for all site offices, labour camps, and godowns etc. which are not required after the Work is finally completed.

SP 5.3 Storage, Cleaning and Dewatering

The Contractor shall at all the times during construction keep the Site clean and free from all debris and unwanted materials as per instructions of the Engineer Storage of materials shall be in an organised manner and in proper compartments. Storage on suspended floors shall not be

permitted unless specifically approved in writing by the Engineer for specific materials in specific locations and in approved manner. Engineer shall be furnished with load details, if requested, before seeking approval for storage. Regular cleaning operations shall be undertaken to remove all dust, debris, waste materials, etc. A cleaning schedule shall be maintained. Contractor shall make his own arrangement for storage of those materials which cannot be accommodated at site. Contractor shall be fully responsible for safe custody of the same. Materials shall be considered as “Delivered at Site” only after the physical presence of materials at site are verified by the Engineer. Stores elsewhere shall not be eligible for being considered as “Delivered at Site”. Contractor shall be responsible to keep entire site free from water due to water coming from any source at any level and shall protect all materials and works from being damaged by the water from any source. Contractor shall make proper arrangements for drainage prior to use of water for curing, testing, cleaning etc. Any expenditure incurred by the Contractor in fulfillment of his obligations under this sub-clause shall be deemed to have been included in the Contract Sum.

SP 5.4 Co-ordination of Builders work required for services

The contractor shall execute the work in coordination with other agencies & shall leave such necessary holes, openings, etc. for laying/burying in the work pipes, cables, conduits, clamps, boxes, and hooks for fan clamps etc. as may be required for the electric and sanitary works etc. and nothing extra shall be paid for the same. The Contractor’s attention is also drawn to the fact that all holes chases, etc. shall be left in the building work as it proceeds and not cut-out subsequently except in so far as may be necessary due to subsequent authorised instructions. The Contractor shall therefore obtain necessary builders work details in such order and in such time as to enable them to be checked and approved by the Engineer not less than two weeks before the actual construction is planned to take place.

SP 5.5 General

The contractor shall generally employ local personnel and as far as possible make purchases from local suppliers.

SP 6. PROGRAMME

Within 15 days of the Award of Contract, the contractor shall submit to the Engineer for approval a programme showing the order of procedure in which he proposes to carry out the works. The programme shall be prepared taking into account the activities of various other agencies involved in the project and shall be to the Approval of the Engineer. The programme shall be reviewed by the Engineer from time to time and revisions if necessary shall be made for well co-ordinate and expedient implementation of the project. A separate programme shall be prepared for each building/structure. The Employer will have the right to indicate priorities for execution of various buildings/structures included in the Works. The Contractor will mobilize or re-mobilise or adjust his resources according to the priorities set by the Employer at no extra cost to the Employer. Even though overall period of the Contract shall be as stated in the Appendix to this Bid; the Consultant

or the Employer or the Engineer may have to fix different periods of completion for individual buildings/structures keeping in view the targeted date for commissioning. The Contractor shall abide by such different dates of completion, which shall be within the overall stipulated period of completion and will provide the contractor with a shorter duration within which the Contractor will have to complete such building /structure. The Contractor will not be entitled any extra payment on this account.

SP.7 INSURANCE (Ref. Clause 21, 22, 23 & 24)

Insurance of Works

All the Insurance shall be arranged by Contractor from First Class Insurance Company having a Branch near the Site who can deal with all matters pertaining to the subject.

The following policies shall be maintained for the duration of the contract, or the extended period if required. Contractor's All-risk Insurance Policy covering loss, damage, theft, burglary etc. of all materials and equipment, temporary works and the Works shall be insured for a total sum equal to the value of all such items plus ten percent of such value. The Contractor shall make available the insurance cover note before the commencement of work, and shall notify any change in the nature or extent of the works and also make available Additional Insurance of works if required in Special Circumstances.

Workmen's Compensation

Insurance for Injury, Accident, etc.

Contractor shall provide for adequate cover to his employees as per provisions of Workmen's Compensation Act.

Indemnity

Contractor shall indemnify the Engineer and Employer from all claims that may arise on account of Contractor's operations at Site.

SP 8 LABOUR (Ref. Clause 34)

The Contractor shall comply with all rules, regulations and laws including but not limited to CLB, ESI, P.F., and Medical and safety of workmen for labour directly or indirectly engaged by the Contractor, his representative and sub-contractors. The Contractor at their own cost shall register themselves wherever and whosoever required in this connection at local and state level.

SP 9 COSTS OF SAMPLES (Ref. Clause 36-2)

The Contractors shall at their cost provide samples for the approval of an Engineer and shall provide alternative sample until an approval has been obtained. The Contractor shall at his cost provide one set of approved standards and codes to which the proposed materials, items and works to be executed shall conform. Such a set shall be handed over to Engineer's representative for ready reference. All materials, items and works, when submitted for approval shall have reference of Bid Specifications and drawings and of clauses of relevant standard and codes for acceptance

criteria. The Contractor shall, at his own cost, provide normal testing facilities at site as directed by the Engineer.

SP 10 TIME FOR COMPLETION (Ref. Clause 43)

The whole of the Works shall be completed within the period as stipulated in Appendix to the Bid from the stipulated date of commencement. The Employer, through the Engineer may fix shorter periods for certain buildings/structures and the Contractor will have to complete such buildings/structures in the desired shorter duration at no extra cost to the Employer.

SP 11 LIQUIDATED DAMAGES FOR DELAY (Ref. Clause 47(1))

The Contractor shall pay to the Employer such sum as stipulated in Appendix to the Bid as liquidated damages which shall lapse between the time prescribed by Clause 43 and SP 10 hereof and the date of certificate of completion of the works. Such liquidated damages shall be subject to a maximum limit as stipulated in Appendix to the Bid.

SP 12 BONUS FOR EARLY COMPLETION (Ref. Clause 47 (3))

If it is desired by the Employer to pay to the Contractor such sum as stipulated in Appendix to the Bid as Bonus which shall have to lapse between the date of certificate of completion of the works and the scheduled date of completion arrived at from the time prescribed by Clause 43 and SP 10 hereof. Such Bonus shall be subject to a maximum limit as stipulated in Appendix to the Bid.

SP 13 CERTIFICATION OF COMPLETION OF WORKS (Ref. Clause 48)

The Engineer shall issue Certificate of Completion of Works upon request from the Contractor void clause 48, only if in the opinion of the Engineer the work be substantially completed is in such a condition so as to be put to its proper commercial use and/or occupied without any short comings and no major or minor items of works are remaining which in the opinion of *and* the Engineer will cause undue difficulties in satisfactory use/occupation of the Works. The opinion of the Engineer shall be final and binding.

SP 14 DEFECTS LIABILITY PERIOD (Ref. Clause 49)

The Defects Liability Period shall be as stipulated in Appendix to the Bid or 365 days calculated from the date of completion of the Works, whichever is lesser.

SP 15 METHOD OF MEASUREMENT (Ref. Clause 57)

The Works shall be measured in percentage basis as given in the mile stone.

SP 16 NOMINATED SUBCONTRACTORS (Ref. Clause 59)

Agencies/Companies/Parties, to which any part of the work is sublet or assigned by the Contractor at his own discretion, shall not seem to be

Nominated Sub Contractors vide clause 59, although their appointment is approved by the Engineer vide Clause 3 & 4.

SP 17 CERTIFICATES & PAYMENTS (Ref. Clause 60)

SP 17.1 Billing and Certificates

Payment will be made as percentage basis (Mile stones) as indicated in the terms of payment.

| Sl. No. | Miles stones | Payments (Percentage of total quoted amount) |
|----------------|---|---|
| 1 | Completion of 30% of all Civil works | 20% |
| 2 | Completion of 60% of all Civil works | 35% |
| 3 | Completion of civil works in all respect | 15% |
| 4 | Completion of external and internal water supply system, internal electrification and external electrification works | 14% |
| 5 | Supply, erection and commissioning of distribution transformer and DG set | 6 % |
| 6 | Landscaping and footway & furniture | 5 % |
| 7 | On hand over of the project with due clearance of engineer in charge | 5 % |

SP 17.2 Advances

SP 17.2.1 Terms of Payment

Advance as stipulated in the appendix to the Bid excluding sums of contingencies shall be payable to the Contractor against an irrevocable Bank Guarantee of like amount in the same currency, from a scheduled and/or Nationalised Bank.

The mobilization advance will recovered on pro rata basis

(@15% of the bill value & till full recovery) from the second RA bill or after completion of 15% of the work whichever is earlier.

Advance BG can be released after full recovery of the mobilization advance.

SP 17.2.3 Payment for Works

The Contractor shall be paid for every completed miles stones claimed only safte cerification by the engineer –in-charge such sum or price of the work executed.

SP 17.2.4 Retention Money

Retention Money shall be as stipulated in the Appendix to the Bid:

Retention Money shall be released in the Pre-final Certificate of Payment provided that Performance Bond is valid or has been revalidated for the entire duration of the Defects Liability Period.

SP 18 APPROVALS AND ACCEPTANCE (Ref. Clause 13 & 61)

Provisional Acceptance

SP 18.1 The work shall deem to have been provisionally accepted after fulfillment of all of the following by the Contractor.

1. Obtaining approvals from local Authorities as required for occupation and use of the Works and handing over such certificates to the Engineer.
2. Submitting As-Built Drawings, Catalogues, Brochures, Data Sheets, manuals as directed by the Engineer.
3. Obtaining Certificate of Completion vide Clause 48 from the Engineer.
4. Handing over of the Works to the Employer as directed by the Engineer.

SP 18.2 Approval and Acceptance

The works shall deem to have been approved and accepted only on issue of Certificate of Final Completion by the Engineer without prejudice to the Employer's rights under the Contract particularly under Clause 62(3).

SP 19 BID RATES AND PRICES ALL INCLUSIVE

All taxes shall be included in quoted rates and borne by the Bidder. Royalty on quarried materials like stones, stone ballast, gravel, murrum, silica and other materials shall also be included in rates and borne by the Bidder. Royalty on excavated earth, stone, boulders, at site shall be included in rates for relevant excavation items. Quoted rates shall remain firm throughout the performance of contract.

SP 20 ENGINEER'S FACILITIES

The Contractor shall provide at all times for the duration of the contract all chairman, staff men, workmen and survey instruments for the exclusive use of the Engineer as directed by the Engineer for carrying out of his duties in connection with the contract. Such instruments, which must be approved by the Engineer shall include but not be limited to the following:

- 1) One the odolite and tripod capable of reading to 20seconds.
2. One level with horizontal circle and tripod.
3. Two metric leveling staffs not less than 3.5 metres high.
4. One 100 meter rust less steel band, one 30 metre rust less steel tape and two 30metre linen tapes.
- 5) An adequate number of ranging rods, drop arrows, wooden setting-out pegs, etc.

The contractor shall be solely responsible for all such instruments and equipment and shall ensure that they are at all times in good repair and adjustment.

SP 21 ACCOMMODATION AND OTHER FACILITIES

FOR CONTRACTOR'S STAFF AND LABOUR IF PERMITTED

The Contractor shall provide accommodation for his staff and labour within site only on very specific permission in writing from Engineer and not otherwise. Under normal circumstances, no permission will be granted for such purposes on the site. The provisions should in no way affect

the natural ecology of the site. The location shall be approved by Engineer. The type of temporary structures shall also be to the approval of the Engineer. Coal/Fire wood shall not be used for any purpose. All cooking shall be in centralised locations and by kerosene or gas.

SP 22 IDENTITYBADGES

All staff and labour shall be given identity badges of approved design and these shall be worn whenever the person is moving on the Site.

SP 23 CONSTRUCTIONPOWER

CONSTRUCTION POWER AND WATER FORCONSTRUCTION

The Contractor shall arrange for power for construction and temporary buildings / works at his own cost and nothing extra shall be payable on this account. The Contractor shall also install at his own cost a set of mobile Diesel Generator for construction, temporary buildings and temporary lighting in order to take care of power failure and inadequate / fluctuating supply of power. These shall be provided from the date of mobilization upto the commissioning. The contractor shall provide all accessories and cabling as required along with the sets. The contractor shall provide the installation and shall maintain the same in good order for entire duration.

The contractor shall then remove and take away all the equipments and accessories and the likes.

WATER FORCONSTRUCTION

Water for construction shall be arranged by the Contractor at his own cost and the same is deemed to be included in the quoted rates.

SP 24 SANITATION ANDDRAINAGEDURINGCONSTRUCTION

The Contractor shall provide sanitation and drainage facilities on the Site as stated subsequently, at his own cost. The Contractor shall strictly control the labour so that the Site is not polluted, made dirty or littered with debris, wastes or the likes. Any person found creating mess or litter or pollution shall be removed from the Site immediately at Contractor's cost. The Contractor shall provide sanitation facilities at convenient locations on Site to preserve the cleanliness of the Site. The effluent shall be directed as follows:

1. Waste Water : Collection and pumping out and disposal off the Site in approved manner.
 2. Sewage: Septic Tank Provision –sludge to be collected and disposed off at intervals as directed.
- The locations of the above provisions shall be as marked on the Site Mobilization Scheme drawing to be submitted by the Contractor for approval by the Engineer.

SP 25 AMBIENTCONDITIONS

The Contractor shall take note of the Site conditions and shall obtain any further details about ambient conditions on his own and take into account while pricing his Bid. All items and equipments quoted shall be suitable for satisfactory working under the ambient conditions.

SP 26 SIGN BOARDS

The Contractor shall provide at his own cost, two Site sign Boards, at directed location of overall size 2 metres wide and 4metres height and of approved design. The names of the Project, Employer, Consultants, Engineer, and Contractor etc. shall be exhibited as directed.

SP 27 DRAWINGS AND DOCUMENTS

SP 27.1 General

The drawings and documents prepared for the project shall be treated as confidential documents and must not be copied or loaned to any other party without the express permission of the Project Management Consultant (PMC).

SP 27.2 Bid Drawings

The Bid drawings furnished by the Consultant are for Bid Purpose only and are intended as a guide to the Contractor and give general layout of buildings and structures and general positions of utilities and services only and in measuring from these drawings and preparing Bid quotes the contractor must make due and proper allowance for all necessary diversions from the straight line, rises or falls as may be required for the proper execution of the works. Detail drawings in all cases shall be worked to in preference to those of a more general nature and figured dimensions where indicated shall be followed in preference to scaled dimensions. Should any item of equipment, materials or labour which would reasonably and obviously be inferred as necessary for the complete, safe and satisfactory usage of the Works or part thereof, not be expressly specified, the contractor shall provide and execute such work as a part of the contract at no extra cost to the Employer.

SP 27.3 Contract Drawings

Engineer shall issue from time to time free of charge two sets of Contract Drawings, Approved for Construction, to the Contractor and one copy thereof to the Employer. Additional copies as and when required shall be supplied by the Engineer and costs shall be reimbursed by the Contractor. In case the issue of drawings does not conform to the programme as planned and approved, the contractor shall immediately submit a revised programme so that; by deployment of adequate resources, the Work is completed within the stipulated time period. The Project Management Consultant may from time to time during the course of contract issue the Contractor with revised contract drawings and the Contractor shall ensure that all superseded drawings are removed from site and stored in a lockable cabinet as directed by the Engineer and replaced by revised contract drawings. The Contractor shall ensure that a complete up to date Register of Drawing is maintained at Site. All Contract Drawings shall be properly filed and indexed for ready reference. The Contractor shall ensure that only the valid up to date contract drawings are used for preparation of working drawings, setting out, construction etc.

SP 27.4 Working Drawings

Working drawings shall mean any or all drawings, required for satisfactory execution of the work, in addition to the contract drawings and shall be prepared and got approved by the Project Management Consultant. Working drawings shall include Shop and Fabrication Drawings for Wood work, Metalwork, False work, Bar Bending Schedules etc. as required by the Engineer. The Contractor shall be entirely responsible for co-ordination of entire work at site including the work carried out by Sub-Contractors and shall ensure that requisition for all necessary working drawings issued to contractor are made in advance to PMC so as not to cause any delay in the expeditious execution of the works as per the programme. Working drawings to be prepared by the PMC shall be such that all details are included as required by the Engineer in charge at an appropriate scale to ensure that the Works are properly executed, co-ordinate, fabricated and installed in accordance with contract drawings and specifications. The Contractor shall make a general check of all physical sizes and details of plant and equipment required and/or specified for the project and shall inform the Engineer of any matter that may come to his notice with which he disagrees. Any comments by the Contractor on the difficulty in incorporating the plant, materials and equipment in the project and the time required for the completion of the work shall be made to the Engineer in charge .

SP 27.5 Discrepancies

The Contractor shall bring to the notice of the PMC any discrepancies within or between contract drawings and/or the other contract documents prior to preparation of working drawings and commencement of work and shall not proceed with work until the Engineer gives clarifications and instructions to proceed.

SP 27.6 As-Built Drawings

“As Built Drawings” shall be provided by PMC at the time of handing over and shall be prepared by the PMC at his own cost. As-built drawings shall be under preparation from the onset of the contract, in order that all minor amendments and discrepancies from the “Working Drawings” are incorporated. To ensure that this requirement is complied with, the PMC shall inspect the drawings on his request as the Works proceed. 4 sets of “As-Built” drawings shall be submitted by the PMC. One shall be transparency and others shall be prints. At the discretion of the PMC and subject only to his express agreement certain working drawings may be modified and submitted to the PMC as the “As Built” drawings.

SP 27.7 Maintenance Manual

The Contractor shall also provide the Engineer with two copies in adorable plastic case of the operating and Maintenance Instruction Manuals. The arrangement of these manuals shall be as follows:

SECTION A : Index

SECTION B : Full set of Indexed Photographs showing all salient features of the Project.

SECTION C : Description and details of materials, items and fittings and fixtures used for the project along with Catalogues & Addresses of the Suppliers.

SECTION D : Planned maintenance instruction and dates for order replacements.

SECTION E : List of recommended Spare parts of consumables.

SECTION F : List of “As-Built” Drawings Until the Record Drawings, prints, transparencies and manuals referred to above have been received and approved by the Engineer, the Contract shall not be considered as complete and payment of monies will be withheld until such drawings, etc. have been submitted to and approved by the Engineer and the cost of providing such records including proper submission thereof is deemed to be included in the Contract Sum quoted by the Contractor.

SP 28 NOTICES (Ref. Clause 68)

The required Notices shall be at the following nominated addresses:

EMPLOYERS ADDRESS:

M/s. Assam State Transport Corporation(ASTC)

Paribahan Bhawan,

Paltan Bazar, Ghy-08

Ph-_____, Fax- _____.

E-Mail :_____

SP 29 INCREASEOR DECREASEOF COSTS (Ref. Clause 70 (1))

The Contract shall be firm price contract and the rates and prices quoted shall remain firm throughout the tenure of contract.

SP 30 TAXATION

The Contractor shall be responsible to pay all taxes relating to execution and delivery of the Works as also personal and Company taxes of his Staff and his Organisation wherever applicable.

SP 31 REPORTS BYCONTRACTOR

- 1) The Contractor shall maintain daily weather record. Daily maximum and minimum temperature and corresponding, humidity shall be recorded and charted. Rainy days shall be recorded when the rain lasting more than one hour hampers the work. Any other inclemency in weather shall be recorded. The records shall be regularly shown to the Engineer and his signature obtained.
- 2) The Contractor shall file daily category-wise labour return. The report shall indicate scheduled requirement against actual strength.
- 3) The Contractor shall prepare Weekly Reports of planned and actual progress of work and subsequent week’s scheduled work. These will also include material procurement status. This report shall be submitted to Engineer and shall be reviewed in Weekly Co-ordination Meeting.
- 4) The Contractor shall submit Monthly Report along with monthly bills.

5) Further Progress Charts and Schedules shall be prepared by the Contractor as directed by the Engineer.

SP 32 VALUE OF VARIATIONS (Ref. Clause 52)

The rates of extra or additional items of work shall be derived from the rates of items of similar nature in the contract, and in the absence of any such items of similar nature in the contract, the rates for such extra or additional items of work shall be derived by rate analysis of such items based on the actual cost of materials and/or labour for items plus the following percentage to cover the cost of plant and machinery, supervision, overheads and profits etc.

- a. Items requiring supply of materials, } Cost of labour and machinery plus materials plus 10%
- b. Items requiring supply of materials } Cost of material only } plus 15%
- c. Items requiring labour & supervision } Cost of labour only } plus 10%

For such extra items as stated above, the Contractor shall obtain necessary prior approval from the Engineer / Consultants prior to the commencement of such work in writing the Engineer's /Consultants decision in matters of such extra items shall be final and binding on the contractor.

SP 33 MISCELLANEOUS

- 1) The Contractor shall arrange at his own cost to maintain a progress record of the works by taking postcard size colour photographs minimum 6 Nos. Or more per month or fortnight as directed by the Engineer during the construction stages and after completion and shall supply one set to the Employer and one set to the Consultants at no extra cost. These photographs shall also be submitted as part of the contractors R.A Bills. The same shall be furnished as per requirement of Chapter 10 of Monthly Progress report in I.e.; Progress Charts – Photographs

Monthly Progress Report

- 2) The Contractor will be required to submit periodic reports on the progress of his work as per the format attached herewith as Part –IV – Monthly Progress Report

Safety Regulations

- 3) The Contractor shall be fully responsible for the safety of his Employees / Contract Labours / Sub-Contractors Labours. The Contractor shall provide first-aid box readily available at site. The Contractor shall provide all safety measures during supervision/inspection of his work by Engineer.

Labour Laws

- 4) The Contractor shall strictly adhere to all labour laws prevailing in that region. The contractor shall make timely payment of wages of their labours and the wages paid to the labours shall be equal to or more than the per minimum wage prevailing at the time of payment. The Contractor shall comply with all applicable labour legislation.

Clarification /Discrepancy

- 5) Any clarification/discrepancy in the Bid shall be sorted out with the Engineer, before execution of Works. The Engineer's decision in this regard shall be final and binding on the Contractor.

Income Tax Deduction at Source

6) As per the statutory rules, Income Tax shall be deducted at source by the Employer from Contractors bills and the certificate to that will be given by the Employer. If there is a statutory requirement for deduction of Works Contract Tax or any other tax at source, then such requirement shall be followed and the tax deducted at source (TDS) will be deposited with the authority and certificate to this will be issued to contractor in an approved format.

Cement Storage

7) Contractor shall make covered and water tight storage shed of adequate storage capacity for the necessary quantity of the cement that would be required for the project and needed to be stored from time to time to facilitate the work.

Loan of Labour

8) The Employer may, if required, request the assistance of Contractor's labour for purposes other than those forming part of this contract. The Contractor will not unreasonably deny such assistance and the Engineers decision in this regard shall be binding on the Contractor. The Contractor will then be paid on the basis of rates quoted by him in the Day Work Schedule included in the Bill of Quantities and all provisions made in Sub Clause (3) of Clause 58 of the General Conditions shall be applicable in this case as well.

Power of Attorney

9) The person signing the Bid/contract shall have Power of Attorney to sign on behalf of the Company.

By-Laws of Statutory Authorities

10) The Contractor and his labour shall not violate municipal/sanitation/health or another bye-law.

Bank Guarantee

11) Wherever a Bank Guarantee is required to be submitted by the Contractor, it shall be as per draft enclosed/ available with the Employer to his satisfaction.

Safety Rules

12) The Contractor shall take all safety precautions / measures and ensure safety for the works, he has been contracted to execute. He shall follow all relevant safety codes of CPWD and IS codes and safety manuals. The Contractor shall indemnify to the Employer from any consequences arising due to Contractor's failure in respect of safety measures.

SP 34 VARIATIONS IN QUANTITIES

Quantities in the Schedule of Quantities for various items are approximate. Assam State Transport Corporation (ASTC) do not accept any responsibility for the correctness or completeness of the schedule in respect of items and quantities and is liable to alteration by omission, deductions, and substitution or additional at the discretion of Assam State Transport Corporation (ASTC) without affecting the terms of contract. The Contractor will not be eligible for any claim in any case of

variation in the quantities provided by the contractor in the technical bid performance (List of material) approved by ASTC/PMC.

SP 35 VARIATION EXCEEDING

If during the execution of whole of works, it is found that the ultimate value of works as being executed will vary from the contract sum by more than $\pm 10\%$ of the contract sum, the Employer may consider to re-negotiate only the sum by which such limit of $\pm 10\%$ is exceeded, subject to such limit not being exceeded due to termination of contract, in which case the matter shall be dealt in accordance with Clause No.63, 65 and 69 with the prior approval of the Employer, shall settle this claim with the Contractor. Failing an agreement with the Contractor, will determine the percentage increase in rates and consider the same in his certification of payments.

SP 36 Arrangements for fire fighting

The Contractor shall provide arrangements for firefighting at his own cost. For this purpose, he shall provide requisite number of fire extinguishers and adequate number of buckets, some of which are to be always kept filled with sand and some with water. This equipment shall be provided at suitable prominent and easily accessible places and shall be properly maintained. These fire prevention inspections shall include but not limited to the following :

- a) Proper handling, storage and disposal of combustible materials, liquids and wastes.
- b) Work operations which can create fire hazards.
- c) Access for firefighting equipment.
- d) Type, size, number and location of fire extinguishers or other firefighting equipment.
- e) Inspection and maintenance records for extinguishers.
- f) Type, number and location of containers for the removal of surplus materials and rubbish.
- g) General housekeeping.

SP 37 Medical Facilities & Safety Devices

The contractor should arrange his own **medical facilities** at project site and should depute a trained first aid supervisor at site for immediate medical assistance. The first aid box should contain all necessary medicines / appliances. Contractor must also arrange for stretcher and provision for ambulance for unexpected emergency. The contractor should arrange for all **safety devices** including but not limited to the following: Safety Helmet (Ratchet type with plastic cage) and steel toe safety shoe shall be mandatory. Full body safety harness (1.8Mtr double lanyards & scaffold hook) and fall arrestor with carabineer along vertical and horizontal lifeline shall be mandatory.

SP 38 Indemnifications

The Contractor shall indemnify and keep indemnified the employer and furnish the indemnity Bond signed by the contractor as per the format provided by the employer along with the terms and conditions.

QUALIFICATION INFORMATION

The information to be filled in by the Bidder in the following pages will be used for purposes of post qualification.

1. For Individual Bidders

1.a) Constitution or legal status of Bidder :

[Attach Copy]

1.b) Place of Registration :

1.c) Principal Place of Business :

1.d) Power of Attorney of Signatory of Bid:.....

[Attach]

2. Total value of Civil Engineering construction

work performed in the last Five years 2011 – 2012 **Rs.** (In **Rs.** Million)

2012 – 2013 **Rs.**

(Attach Certificate from

2013 – 2014 **Rs.**

Chartered Accountant)

2014 – 2015 **Rs.**

2015 - 2016 **Rs.**

3. Work performed as prime contractor of a similar nature over the last five years.

[illegible]

4. Quantities of work executed as prime contractor, in the last five years.

| Year | Name of the Work | Name of the Employer | Quantity of Work performed (Cu m) Remarks | | Steel Reinforcement | Remarks (indicate contract Ref) (Attach Certificate from Engineer-In-Charge) |
|---------|------------------|----------------------|---|------------|---------------------|--|
| | | | Cement Concrete (including RCC & PCC) | Brick Work | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2011-12 | | | | | | |
| 2012-13 | | | | | | |
| 2013-14 | | | | | | |
| 2014-15 | | | | | | |
| 2015-16 | | | | | | |

5. Existing Commitments and on-going works:

| Description Works | Place & State | Contract No. | Name & Address of Employer | Value of Contract (Rs.) | Stipulated Period of Completion | Value of works remaining to be completed (Rs.) | Anticipated date of completion |
|-------------------|---------------|--------------|----------------------------|-------------------------|---------------------------------|--|--------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | | | | |

6. Works for which bids are already submitted:

| Description Works | Place & State | Name & Address of Employer | Estimated Value of Works (Rs. Crore) | Stipulated Period of Completion | Date when decision is expected | Remarks if any |
|-------------------|---------------|----------------------------|--|---------------------------------|--------------------------------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | | | | |

7. Availability of key items of Contractor's Equipment essential for carrying out the Works. The Bidder should list all the information requested below.

| Item of Equipment | Requirement | | Availability Proposals | | | Remarks (from whom to be purchased) |
|---|-------------|----------|-----------------------------|----------------|---------------|-------------------------------------|
| | No. | Capacity | Owned/Leased to be Procured | Nos. /Capacity | Age/Condition | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <i>Water Tanker / Water tank</i> | | | | | | |
| <i>Concrete Vibrator</i> | | | | | | |
| <i>Welding Machine</i> | | | | | | |
| <i>Cube Test Machine (Complete kit)</i> | | | | | | |
| <i>Sieve Analysis (Complete kit)</i> | | | | | | |
| <i>Concrete Hammer</i> | | | | | | |
| <i>Concrete Mixer Machine</i> | | | | | | |
| <i>Excavator Cum Roller, Truck & Dumper</i> | | | | | | |
| <i>Lader</i> | | | | | | |
| <i>Others</i> | | | | | | |

8. Qualifications and experience of key personnel required for administration and execution of the Contract

| Position | Name | Qualification | Year of Experience | Years of Experience in the Proposed position |
|---------------------------|------|---------------|--------------------|--|
| 1 | 2 | 3 | 4 | 5 |
| Project Manager | | | | |
| Site Engineer | | | | |
| Quality Control Engineer. | | | | |
| Electrical Engineer | | | | |
| Other Staff | | | | |

9. Proposed sub-contracts and firms involved.

| Sanctions of the Works | Value of Sub-Contract | Sub-Contractor (Name & Address) | Experience in Similar Work |
|------------------------|-----------------------|------------------------------------|----------------------------|
| 1 | 2 | 3 | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

10. Financial reports for the last five years: balance sheets, profit and loss statements, auditor's reports (in case of companies/corporation), etc. List them below and attach copies.

.....

11. Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List them below and attach copies of support documents.

.....

12. Name, address, and telephone, telex, and fax numbers of the bidder's bankers who may provide references if contacted by the **Managing Director, ASTC., , Paltanbazar, Guwahati-8.**

.....

13. Information on litigation history in which the Bidder is involved.

| Order Party | Employer | Cause of Dispute | Amount Involved | Remark showing present status |
|-------------|----------|------------------|-----------------|-------------------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |

Table-11

14. Proposed work method and schedule .The bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the Bidding Documents.

15. Work Programme.....

16. Quality Assurance Programme.....

17. Undertaking (Bid validity).....

18. Authority

19. Other if any

BID SECURITY (BANK GUARANTEE)

WHEREAS, ----- [Name of Bidder] (Herein after “the Bidder”) has submitted his bid dated ----- [date] for the construction of ----- [Name of Contract] (Hereinafter called “The Bid”)

KNOW ALL PEOPLE by these presents that WE ----- [name of bank] of ----- (name of the country) having our registered office at ----- (hereinafter called “the bank”) are bound unto ----- { name of employer} (hereinafter called “the Employer”) in the sum of ----- for which payment well and truly to be made to the said Employer the bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this ----- day of -----

THE CONDITIONS of these obligations are:-

- (1) If after Bid opening the Bidder withdraws his Bid during the period of bid validity specified in the Form of Bid;

Or

- (2) If the Bidder having been notified of the acceptance of his Bid by the Employer during the period of Bid validity:
 - (a) Fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) Fails or refuses to furnish the Performance Security, in accordance with the instructions to Bidders, or
 - (c) Does not accept the correction of the Bid price ;

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the employer having to substantiate his demand, provided that in his demand the Employer having to substantiate his demand, provided that in his demand the Employer will note

that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force upto and including the date ----- days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE-----SIGNATURE OF THE BANK-----

WITNESS-----SEAL-----

(Signature, name and address)

1. The Bidder should insert the amount of the Guarantee in words and figures denominated in Indian Rupees.
2. 28 days after the end of the validity period of the Bid. Date should be inserted by the Employer before the Bidding documents are issued.

PERFORMANCE BANK GUARANTEE

To: ----- [name of Employer]

----- [Address of Employer]

WHEREAS----- [name and address of Contractor]

(hereinafter called "the Contractor") has undertaken, in pursuance of contract -----No-----

-----Dated----- to execute----- [Name
of Contract and brief description of works] (Hereinafter called "the contract")

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the contract.

AND WHEREAS we have agreed to give the contractor such a Bank Guarantee;

NOW THEREFORE, we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of ----- [amount of Guarantee] -----
----- [In words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand, and without cavil or argument, any sum or sums within the limits of -----
----- [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until 28 days from the date of expiry of the Defects Liability Period.

Signature and seal of the guarantor -----

Name of Bank -----

Address -----

Date -----

1. An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and Denominated in Indian Rupees.

GENERAL SPECIFICATION

GENERAL SPECIFICATIONS

It is not the intention to specify completely herein all aspects of design and constructional features of equipment's and details of the work to be carried out, nevertheless, the equipment and work shall confirm in all respects to high standards of Engineering, Design and workmanship and shall be capable of performing in continuous commercial operation in a manner acceptable to the owner who will interpret the meaning of the specifications and drawings and shall have right to reject or accept any work or material which in his assessment is not complete to meet the requirements of this specifications and / or applicable code and standards mentioned elsewhere in this specifications.

MATERIAL AND WORKMANSHIP

1. All Materials brought on site of works and meant to be used in the same shall be the best of their respective kinds and as per approval list enclosed or specific approval from EIC.
2. Samples of all materials shall be got approved by the EIC and shall be deposited with him before the order for the material is placed with the suppliers. The material brought on the works shall confirm in every respective with approved samples.
3. The contractors shall check each fresh consignment of materials as it is brought on the site of the works, to see that they confirm in all respects to the satisfactions and/or samples approved by the Owner.
4. The Owner will have the option to have any of, the materials tested to find whether they are accordance with the satisfaction and the contractor will bear all expenses in that connection. All bills, vouchers and test certificates which, in the opinion of the EIC or the representative, as necessary to convince him as to the quality of the materials of their suitability shall be produced for his inspection on requisition Testing charges, if any shall have to be borne by the contractor.
5. Any material that have not been found to confirm to the specification will be rejected forthwith and shall be removed from the site by the contractors within 48 hours at their own cost.

6. The ATDC shall have power to cause the contractors to purchase and use such materials, from any particular source, as may in his opinion be necessary for the proper execution of the work.
7. Workmanship: All works shall be to level plumb and square corners, edges and arises in all cases shall be unbroken and finished neat.
8. Skilled mistries for the respective trades shall be employed by the contractors to check the work in progress and to instruct and extract the right kind of workmanship from the men employed on the works. Instructions given to such mistries by the EIC or his representative shall be carried out with a view to get the work executed in a neat and workman like manner according to these specifications.
9. The EIC may order the inspection of any finished work as he chooses and in a manner he decides, and the contractors shall bear all expenses in the connection. If the results of such inspection prove that the workmanship is not of the standard required, the work will be rejected and removed forthwith and be replaced by works of the accepted standard of quality.

HARDWARE & METALS:

1. Tables side units back units consoles or other articles as per schedule of quantities shall be deemed to be inclusive of all the hardware required e.g. locks, sliding channels handles / knobs, bolts screws PVC buffers for the legs of sofas chairs tables etc. as per instructions of engineer in charge.
2. Screws are to match the finish of the articles to be fixed and to be round or flat headed or counter sunk as required.
3. The contractor should cover up and protect the brass and bronze surfaces with a thick grease or other suitable protective materials renew as necessary and subsequently clean off and clear away on completion.
4. Aluminum and stainless steel shall be of approved manufacturer and suitable for its particular application. Generally, surface of aluminum shall have an anodized finish or powder coated finish and both shall comply with the samples approved by the EIC. All stainless steel sheets shall be 304 s.s. Japan or equivalent with gauge as specified but not thinner than 16 gauge. All exposed steel surfaces shall also have powder coated finish and shall be completed with samples approved by ATDC.
5. All steel, brass, bronze, aluminum and stainless steel articles shall be subjected to a reasonable test for strength if so required by the ATDC at the contractor's expense.
6. All branching and welding are to be executed in a clean and smooth manner rubbed down

and left in the flattest and tidiest way, particularly where exposed.

7. Chromium plating shall be in accordance with IS standard or as per approved specification for normal outdoor conditions and shall be on a base material of copper brass or as specified.

GLAZING:

1. All glass is to be of approved manufacturer of approved quality and shall be free from bubbles, smokes, waves, air holes and other defects. The kind of glass to be used shall be as mentioned in the item or specification or in the special provisions or as shown in detailed drawings. Thickness of glass panel shall be uniform. All glass to be approved manufacture complying with IS : 3548 - 196 or as per approved quality and sample.
2. The compound for glazing to metal is to be special non- hardening compound manufacture for the purpose and of 9 brand and quality approved the EIC.
3. While cutting glass, proper allowance by made for expansion. Each square of glazing to be in one whole sheet. On completion of work, all glass shall be cleaned inside and outside and all cracked scratched and broken panes shall be replaced and left in a good condition.
4. All exposed edges of glass shall be lead polished.

TECHNICAL SPECIFICATION

GENERAL

This specification is for work to be done, item to the supplied and materials to be used in the works as shown and defined the drawings and described herein, all under the supervision and to the satisfaction of the Owner.

1. The workmanship is to be the best available and of a high standard. Use must be made of special tradesmen in all aspect of the work and allowance must be made in the rates for doing so.
2. The materials and items to be provided by the contractor shall be approved by the EIC in according with any samples which will be submitted for approval by the contractor and generally in accordance with the specifications. Also if products are specified in the specification and/or bill of brand trade name or catalogue reference the contractor will be required to obtain the approval of the Architects before using the materials. The contractor shall produce all invoice, vouchers or receipts for any materials if called upon to do so by the EIC.

3. Samples of all materials are to be submitted to the EIC for approval before the contractor orders or deliver the materials at site. Samples together with their packing are to be provided free of charge by the contractor and should an materials be rejected they will be removed from the site at the contractors expenses. All samples will be retained by the EIC for comparison with the materials which will be supplied. The contractors submit specimen finish of colors, fabrics, etc. for the approval of the Architect before proceeding with the work.
4. The contractor shall be responsible for providing and maintaining any boxing or other temporary coverage required it the protection of dresses or finished work if left unprotected. He is also to clean out all shelving cut ends and other waste from all parts of the works before coverings or infillings are constructed.
5. Templates, boxes and moulds shall be accurately set out rigidly constructed so as to remain accurate during the tin they are in use.
6. Only the class workmanship will be accepted contractor shall maintain uniform quality and consistency in workmanship throughout.

JOINERY

1. Joinery is to be taken up immediately after the placing of the contract frame-up, bonded and wedged up. Any portions that are warped or found with other defects are to be replaced before wedging up. The whole of the work is to framed and finished in a proper workman like manner in accordance with the detailed drawings, wrought and whenever required, fitted with all necessary metal ties, straps, bolts, screws glue etc. Jointers work, generally to be finished with fine sand glass paper.

JOINTS:

1. All joints will be standard mortise and tenon, dowel, dovetail, and cross halved. Nailed or glued butt join will not be permitted. Screws nails etc. will be standard iron or oxidized and of nettle fold make joint less state otherwise. Where mortise and tenon joints are used, tenons should fit the mortises exactly. In respect of points in the hollock timber frame wash in sofas the joints should confirm to the best practice in the trade.
2. Nailed or glued butt joints will not be permitted, except in exceptional cases with approval of EIC.
3. Where screws shown on a finished surface, these will be sunk and the hole plugged with a wood plug of the san wood and grain of the finished surfaces unless detailed otherwise. Nails on finished surfaces will be nearly punches and the hole filled with wood filler to match the color.

4. Should joints in joiner's work open, or other defects arise within the period stated for defect liability in the contract and the clause thereof, such defective joinery shall be taken down and refilled, redecorated and/or replaced necessary and any work disturbed shall be made good at the contractor's expense.
5. Nails, spikes and bolts shall be of lengths and weights approved by the EIC Nails shall complete with IS 1959-1960 or equivalent approved quality sample. Brass hedge nails are to comply with B.S. 1210. Wire staple shall comply with B.S. 1494 or equivalent.
6. The contact surface of dowel, wedges etc. shall be glued with an approved adhesive.
7. Where glued Joinery and carpentry work is likely to come into contact with moisture, the glue shall be waterproof.
8. All dovetail joints shall be further strengthened with M.S. Cleats for cabinet furniture like tables, storage units etc.
9. Where boards/plywood has to be fixed on another boards/plywood the two surfaces shall be fixed together by applying special carpenter's adhesive and headless nails.

PAINT AND POLISHES:

1. All materials required for the works shall be of specified and approved manufacturer, delivered to the site in the manufacturer's containers with the seals, etc., unbroken and clearly marked with the manufacturer's name or trade mark with a description of the contents and colour. All materials are to be stored on the site of the work.
2. Spray painting with the approved machines will be permitted only if written approval has been obtained from the Architect/Employer. The paint used for sparing is to be specially prepared by the manufacturer for spray Thinning of paint made for brushing will not be allowed.
3. Wood preservative shall be Ascu Green Saver or any other equal and approved impregnating wood preservative at all concealed wood work shall be treated with wood preservative.
4. All brushes, tools pots, kettles, etc. used in carrying out the work shall be clean and free from foreign matter and at to be thoroughly cleaned out before being used with a different type of class of material.
5. All iron or steel surfaces shall be thoroughly scraped and rubbed with wire brushes and shall be entity free from rusting mill scale etc. before applying the priming coat.
6. Surfaces of new wood work which are to be painted are to be rubbed down and cleaned to the approval of the Owner.
7. All exposed teakwood surfaces and Veneer surfaces and surfaces which are not treated

otherwise shall be finish with stained polish to the required shade and melamine/ PU finish.

8. All exposed cedar wood surfaces and clear ply surfaces shall be finished with ready mixed wax polish to give nature shade.
9. The Bided rates shall include cost of seasoning and providing wood preservative and as given in the specification

POLISH:-

Pure shellac varying from pale orange to lemon yellow color free from resin or dirt shall be dissolved methylated spirit at the rate of 140 gm of shellac to 1 litre of spirit. Suitable pigment shall be added to get the required shade.

1. The surface shall be cleaned. All unevenness shall be rubbed from smooth with the sand paper and well sets if variable shall be covered with a preparation of red lead and the size land on white hot Hoes an mgehtations on the surface small be stopped with plazsr's putty. The surface shall then be given a coat of won filler by mixing whiting (ground chalk) in methylated spirit at the rate of 1.50kg of whiting per litre of spirit. The required staining agent shall be added to get the required sand. The surface shall again be rubbed down perfect smooth with glass paper and wiped clean.
2. The polishing rubber, the most important implement in French polish shall consist of a pad of cotton wool., which acts as a reservoir for the polish and a soft white linen or cotton fabric similar to a well worn handkerchief, which acts as a filter. The rubber must never be dipped in to the polish. It should be charged by pouring the polish on the pad with the cover remove.
3. The surface shall be worked upon evenly a slow figure of eight motion until the surface is coated with a thin layer of polish. The object shall be to apply a series to thin coats, allowing only a few minutes for drying between the coats, when a level and even bodied surface is obtained the work is considered ready for the second stage is spiriting off. Allowing the work to stand for at least eight hours, a fresh rubber with a double thickness of cover material shall be rubber with a double thickness or cover shall be taken and charged with methylated spirit. The surface shall be sprite off to remove the rubber marks and to give the brilliance of finish. The rubber shall be worked in the direction grain an continued till the surface is free from smears and rubber marks and left to harden off.

PU FINISH:

The wooden articles to be polished as per the manufactures specification and workmanship to

be of 1st class (ASIAN/ MRF/ NEROLAC/ BURGER / ICI BELCO)

1. Cleaning & rubbing the wood/ Veneer surfaces with water proof Amery paper up to getting smooth surface.
2. Making of desired colour base from colour stainer & thinner. Apply it on wood/ Veneer with cotton cloth up to getting desired colour shade.
3. Apply PU sealer spray by Spray.
4. After minimum 24 hours apply putty made from special powder, PU sealer and desired colour stainer.
5. After getting it dry (minimum 24 hours) rub the surfaces with 100 no. waterproof Amery paper and clean the surface and apply pU sealer coat with cloth.
6. Repeat step 4.
7. Again ally PU cating with spray and after 24 hours rub the surface with 220 no water proof amery paper.
8. Reapeat step 4.
9. Repeat step 7.
10. Final coating- Apply final PU spray catinfg after getting desires shade & finish.

MALAMINE FINISH:

The wooden articles to be polished as per the manufactures specification and workmanship to be of 1st class.(ASIAN/MRF/ NEROLAC/ BURGER / ICI BELCO)

1. The melamine finish shall be applied on the French spirit polished surface.
2. Follow the steps as specified for above for PU polish. In this case application material is Melamine product.

ENAMEL PAINTS :

Oil paints shall be of 1st quality and the specified colour and shade, and as approved. The ready mixed paints shall only be used. However, if ready mixed paint of specified shade or tint is not available while ready mixed paint with approved stainer will be allowed. In such a case,, the Contractor shall ensure that the shade of the paint so allowed shall be uniform.

All the paints shall meet with the following general requirements:

- (i) Paint shall not show excessive setting in a freshly opened full can and shall easily be re-disbursed with a paddle to a smooth homogeneous stage. The

paint shall show no curdling, livering, caking or colour separation and shall be free from lumps and skins.

- (ii) Paint as received shall brush easily, possess good leveling properties and show no running or suggesting tendencies.
- (iii) The paint shall not skin within 48 hours in a three quarters filled closed container.
- (iv) The paint shall dry to a smooth uniform finish free from roughness, grit, unevenness and other imperfections.

Ready mixed paint shall be used exactly as received from the manufacturers and generally according to their instructions and without any admixtures what-so-ever.

PLASTIC EMULSION PAINT :

Pigmented priming coat (emulsion thinned with water) followed by three or more finishing coats of plastic emulsion paint. Pasted filler to be applied after every coat exempting the final finishing coat and sanded.

TIMBER:

Timber generally is to be best of its kind, well and properly seasoned, of nature growth, free from worm holes large loose or dead notes or other defects and sawn die square and will not suffer wrappings, splitting or other defects through improper handling.

The hardwood is to be CP teak weighing not less than 45 Lbs per cubic feet with a moisture content tax. Shall be covered polished etc. after written permission.

Wood for frame work/ roughwood shall be hollock even though drawings may show Kail.

All dimensions given in the schedule of quantities and drawings are the required finished size.

Timber shall be well seasoned and kiln dried with a moisture content of 12% nominal +2% for teakwood. The contractor should get the timber tested for moisture content of wood at his own cost as per the directions of the EIC.

Timber is to be cut to the required sizes and lengths as soon as practicable after the works are begun and stored under cover so that the air will circulate freely around it. Joinery is to be prepared, immediately after the placing of the contract, framed up (but not bonded) and stored until required for fixing in position, when it is to be bonded and wedged up. Any portions that warp or develop shakes or other defects are to be replaced before wedging up, the whole of the work is to be framed and finished in a proper and workman like manner, in accordance with the detailed drawings, and fitted with all necessary motaties straps, belts screws etc. running bonded joints are to be cross tongued with

teak on guess and where over 1 - % % thick double cross tongued. Joiner's work generally is to be finished with fine class papered surfaces unless otherwise specified.

Templates boxes and moulds shall be accurately set out and rigidly constructed so as to remain accurate during the time they are in use. Ground are to be clean shown, free from large knots, splayed as required, plugged and fixed to walls etc. at 1'6'' centers.

Wood plugs are to be cut on the twist, patent wall plugs or plastic filling may be used in lieu of wood plugs with the approval of the Architect.

All unexposed surfaces of timber e.g. false ceilings, backing fillets backs of doors frames, cupboard framing, grounds etc. are to be treated with two coats of approved timber preservative like solignum, kirticite, termiseal or castoral or vacuum pressure impregnated with and approved water soluble timber preservative before fixing or bedding.

MDF BOARD/BLOCK BOARD/PLYWOOD/PARTICLE BOARD:

1. MDF boards block boards/plywood/particle board etc. as specified in the approved list of manufacturers shall only be used..
2. MDF board shall comply with I.S. 12406-1988. Manufacturers specification shall be followed in the use of MDF boards for the various usages.
3. PLYWOOD :Plywood for general purpose shall confirm ISI 303 - 1975. It shall be of B.W.R. grade in the specified thickness for the commercial type B.W.R. grade plywood, formed with 0.8 mm. Th. Commercial face veneers and 1.5 mm th. Intermediate veneers in two opposite grain direction shall be 1:1. The moisture content shall not be more than 12.5% by mass. It shall be of CENTURY make or other equivalent approved make. Where B.W.P. grade is specified it should be boiling water proof confirming to I.S. Standards.
4. MELAMINE FACED PARTICAL BOARD -It should be three layered wood based particle board, such as Novapan melamine faced pre-laminated on both sides. Particle board should be ISI 3087FPTH (type II, 1965) marked on edges and should also confirm to German Din Standard viz DIN 66761. it should impart good bending strength, modulus of elasticity, internal bond strength and screw holding strength. Melamine faced surface should have resistant to crack at 100 and should pass cigarette burn test.

LAMINATES :

All the laminate to be used shall be of 1.5 mm thickness in approved the colour and shade as approved and specified by the EIC. It shall be matt finish manufactured by approved brand &

as per the sample approved. It shall satisfy all the I.S.I. Standards for melamine coated laminated fiber boards Contractor shall have to take approval of the Department for each sheet of the laminates.

VENEERS:

The best quality natural wood veneers of the specified wood and of the specified thickness shall be used. It shall be in matching group and of uniform shade and as per the selection and approval. The Contractor shall have to obtained the approval of the prior to pressing of veneers. The contractor shall have to use the brand of veneers as approved by the EIC.

RUBBER:

Natural latex rubber (Geo foam or its equivalent) of specified density and the thickness shall be used for all the cushions and padding for upholstered furniture. Loose cushions of all furniture should have solid foam walling to keep up proper shape.

UPHOLSTERY:

This will be of first class standard workmanship with webbing no-sag springs, coiled springs, padding and filling as specified on drawing. Covering fabrics will be shown tufted and corded as shown on the drawing and as approved by the employer.

CUSHION VENTS :

Brass or aluminium 'cushion vents' should be installed at the back or underside of seat cushions (especially those covered in leather evenly plastic or very tightly woven fabric) to allow air to escape and to prevent torn seams.

P.O.P. / Gypsum Board :

Specification of material for P.O.P./ Gypsum board work shall be Class-I quality. Measurements: Length and breadth of the plan area of the finished work shall be measured correct to a cm. no deductions shall be made for openings provided, nor shall extra material or labour involved in such openings. Rate to include decorative work with sunk raised levels in false ceiling. Rate shall include all scaffoldings staging etc.

SHOP DRAWINGS:

The contractor shall submit for approval all joinery details for total furniture. Shop drawings shall relate to site measurements and shall show in detail the construction of various parts of the work, the method of jointing, thickness and type of material, the finishes to be applied to the various exposed surfaces, details of anchoring, joints, welds, fastening and all other

relevant information.

Great care must be exercised in cutting the RCC slabs/beams to locate suitable reinforcement for welding the M.S. flats to be provided for suspension of false ceiling system. The damage to the R.C.C. member shall be made good with cement mortar 1:2 (1cement:2coarse sand). The projecting portion of the M.S. flat below the R.C.C. member and any other steel member in the false ceiling system shall be painted with one coat of red oxide paint.

The Bided rates shall apply for all floors heights. The Bided rates shall include backing of plastered surface wherever Dado/wall lining with marble/granite stone slabs are envisaged and the back has been plastered

GENERAL SPECIFICATION ELECTRICAL WORK

ELECTRICAL WORK GUIDELINES

It is not the intention to specify completely herein all aspects of constructional features of equipment's and details of the work to be carried out, nevertheless, the equipment and work shall confirm in all respects to high standards of Engineering, workmanship and shall be capable of performing in continuous commercial operation in a manner acceptable to the owner who will interpret the meaning of the specifications and drawings and shall have right to reject or accept any work or material which in his assessment is not complete to meet the requirements of this specifications and / or applicable code and standards mentioned elsewhere in this specifications.

SCOPE OF WORK

The scope of work under this specifications shall include supply, storage, erections, testing and commissioning of following items for complete electrification including labour, tools, tackles and plants etc. as required.

- A) Construction of 11 KV line with PSC pole, street lighting including supply , erection, testing and commissioning of 100 KV distribution transformer and 100 KVA DG set for back up lighting etc.
- B) Lighting system for the indoor and outdoor areas of the building complete with switchboards, switches, receptacles, wires, conduits, Earthing and their accessories etc. as required.
- C) SERVICES
 - a) For Electrical points, telephone, fire alarm system wiring, cabling connections and their terminations at required points with respective accessories.
 - b) Laying of conduits, made of PVC/MS with respective accessories.
 - c) Panel and distribution boards with accessories and their terminations.
 - d) Raising mains/sub-mains/bus ducts with accessories and their terminations.
 - e) Earthing system.
 - f) The scope of work shall also include all minor/ civil works associated with lighting, power panels, Distribution boards, Cables, cable trays, conduits either on surface or in walls or ceiling for light points, switch boxes cutting and chasing the walls, ceiling including refilling, plastering the same.
 - g) Materials and components not specifically mentioned in the specifications but necessary for satisfactory installations and operations of the system mentioned therein shall be deemed to have been included in the scope of work of this specification and NO extra payment shall be made for the same.

The installation shall comply in all respects with the requirements of Indian Electricity Act 1910

as amended up to date. Indian Electricity Rules 1956, there under and special requirements, if any of the state electricity boards etc.

RATE

- A) The rate of the wiring points (light, fan, plug, bell) given in the schedule of work shall be irrespective of the length of the points. Circuit wiring of these points shall not form part of the rate. The point wiring shall be carried out with 3/0.029 copper conductor PVC insulated 650/1100 volts grade wire with the circuit wiring shall be 3/0.036 copper conductor. For power point wiring shall be with 7/0.036 copper conductor PVC insulated 650/1100 volts grade wire including earth conductor of minimum size of 14 SWG bare / copper shall be part of the point wiring.
- B) Separate wiring shall be made for each wiring system such as NORMAL, EMERGENCY, TELEPHONE etc. No extra payment shall be made to the contractor on this regard.
- C) Point wiring shall consist of circuit wiring from final/sub-distribution board together with controlling switch, ceiling rose or any other approved termination or socket outlet with switch.
- D) Wiring shall be done in LOOP IN system and phase or line wire shall be looped at switch box and neutral conductor shall be looped from point.

DRAWINGS

- i) Few drawings showing general layout of building are enclosed and for distribution and for condition assessment as such can be taken from site itself. These drawings are meant to give a general Idea to bidder regarding the nature of work.
- ii) Prices shall not be subject to variation after award of work due to difference in drawings and actual construction drawings released from time to time.
- iii) Contractor shall prepare and submit to the OWNER for his approval, detailed shop drawings of all system of wiring, Distribution boards, panels etc. All work shall be carried out on the approval of these drawings, however approval of these drawings does not release the contractor of his responsibility with the intent of the specifications.

CONDUIT WIRING & LIGHTING

The conduits shall be of GI / PVC as specified.

All conduits shall be GI except where the same are embedded in RCC or brick, where they

can be in PVC.

All G.I. Conduits shall be heavy gauge solid drawn or welded black stove enameled and shall be of the following gauges :

G.I. Conduit

Upto 32mm dia - 16 SWG (1.6 mm)

Over 32mm dia - 14 SWG (2.0 mm)

All PVC conduits will be heavy gauge range.

Flexible conduits shall be formed from a continuous length of spirally interlocked strip steel having a fused zinc coating on both sides. The conduit shall be terminated in brass adaptors. Maximum length of flexible conduit shall not exceed 1.0 m

ACCESSORIES :

Conduit fittings such as bends, elbows, reducers and nipples, split couplings, plugs etc. shall be specifically designed and manufactured for that particular application. All G.I. / M.S. conduit fittings shall conform to IS 2667 - and IS 3887.

WIRES :

All wires shall be PVC insulated with single core copper or aluminium to

I. S. 694 conductors as specified and shall be 650 / 1100 volt grade. Fire resistant wires shall be provided where mentioned in the BOQ.

All wires shall be colour coded as follows:

| PHASE | COLOUR OF WIRE |
|---------|----------------|
| R | Red |
| Y | Yellow |
| B | Blue |
| N | Block |
| Earth | Green |
| Control | Grey |

INSTALLATION:

The size of conduits shall be selected in accordance with the number of wires permitted under table given below. The minimum size of the conduit be 19 mm dia. Unless otherwise indicated or approved Size of wire shall be not less than 1.5. Sq.mm. cooper.

| Stranded Copper wires | Solid Aluminium wire | Nominal Cross sec. (Sq.mm) ZXC | 19 mm | 25 mm | 32 mm | 40 mm | 50 mm |
|--------------------------|----------------------------|--------------------------------------|----------|----------|----------|----------|----------|
| 3/0.737 | 1/1.4 | 1.50 | 3 | 6 | 14 | | |
| 3/1.06 | 1/1.80 | 2.50 | 2 | 4 | 8 | | |
| 7/0.85 | 1/2.24 | 4.00 | 2 | 3 | 6 | | |
| 7/1.06 | 1/2.80 | 6.00 | | 3 | 6 | | |
| 7/1.40 | 1/3.55 | 10.00 | | 2 | 4 | 6 | |
| | | 16.00 | | | | | 6 |
| | | 25.00 | | | | 4 | 6 |
| | | 35.00 | | | | 3 | 5 |

Conduits shall be kept at a minimum of 300 mm from the pipes of other non-electrical services when run parallel and 100 mm in height when run perpendicular.

Layout of conduits shall be generally as indicated on Agency's shop drgs. And the layout shall be supplemented and complemented by Agency on site with the approval of the engineer - in - charge.

Wiring for short extensions to outlets in hanging ceiling or to vibrating equipments, meters etc. be installed in flexible conduits. Otherwise rigid conduits shall be used. Length of flexible conduit in each case shall not exceed 750 mm.

Conduits run on surface shall be supported on metal 6 mm thick saddles which in turn are properly screwed to the wall or ceiling. Saddles shall be at intervals of not more than 500 mm. Fixing screw shall be with round or cheese head and or rust proof materials. Exposed conduits shall be neatly run parallel or at right angels to the walls of the building. Unseemly conduit bends and offsets shall be avoided by using fabricated mild steel junction / boxes through boxes

for better appearance. No cross-over conduits shall be allowed unless it is necessary entire conduit installation shall be clean and neat in appearance.

Conduits embedded into the walls shall be fixed by means of staples at not more than 500 mm intervals. Chase in the wall shall be neatly and refilled after laying the conduit and brought to the finish of the wall.

Conduits buried in concrete structure shall be position and securely fastened to the reinforcement and got approved by the Engineer - in - charger, prior to the time concrete is poured. Proper care shall be taken to ensure that the conduits are neither dislocated nor choked at the time of pouring the concrete. Separate fish wires shall be drawn in all conduits before they are embedded. Where conduits passes through expansion joints in the building, adequate fittings shall be used to take care of any relative movement.

Inspection boxes shall be provided for periodical inspection to facilitate drawl removal of wires. Such inspection boxes shall be flush with the wall or ceiling in the case of concealed conduits. Inspection boxes shall be spaced at not than 12 meters apart or to 90 degree bends or equal. All junction and switch boxes shall be covered with 6mm clear Perspex plate or other material directed by consultant truly cut and fixed using cadmium plated brass screws. These junction boxes shall from part of point wiring or conduit wiring as the case may be including the cost of removing the Perspex cover for painting and refixing. No Separate charges shall be allowed except where specially mentioned.

Conduits shall be free from sharp edges and burrs and the threading free from grease or oil. Threading system of conduits must be completely installed and rendered electrically continuous before the conductors are pulled in. Conduits should be terminated in junction boxes of not less than 32 mm depth.

A bare earth wire of not less than 2.5 sq.mm section copper shall be run with each conduit. Where more conduits are urn. the earth wires shall be provided shall be provided as following, interconnection all the conduits on both sides of a threaded joint with copper earth clamps.

Upto 4 Nos. conduits 2 Nos. earth wires min. Sq.mm., copper

Upto 8 Nos. conduits 3 Nos. earth wires min. Sq.mm., copper

Upto 12 Nos. conduits 4 Nos. earth wires min. Sq.mm., copper

Where an insulated earth wire is specified in the schedule of work, the conductor shall be 2.5 sq.mm or specified in BOQ stranded copper PVC insulated pulled along with the phase conductors. The insulated earth wire shall be pulled in each conduit. The schedule of work defines where insulated earth wire or bare earth wire is to be used.

LIGHTING AND POWER WIRING:

All final branch circuit for lighting and appliances shall be single conductor cable run inside conduits. Conduits shall be properly threaded and screwed into bends, junction boxes.

Branch circuit conductor sizes shall be as shown in schedule of quantities and / or drawings.

Not more than 4 final branch circuits shall be carried in one conduit. Wires of the same phase shall be drawn in one conduit except in the case of 2 Ph / 3 Ph circuits. Each lighting branch circuit shall have not more than ten outlets or 800 watts whichever is lower.

Flexible cords for connection to appliances fans and pendants shall be 650 / 1100V grade (three or four core with insulated neutral wire of same size) with tinned stranded copper wires, insulated, twisted and sheathed with strengthening cord.

Looping system of wiring shall be used. Wires shall not be jointed. No such joints shall be made unless the length of sub circuit, sub - main is more than the length of the standard coil. Where joints are unavoidable, these shall be made through approved mechanical connectors.

Control switches shall be connected in the phase conductor only and shall be "ON" when knob in down. Switches shall be fixed in 3 mm thick sheet boxes with cover plates as specified.

Power wiring shall be distinctly separate from lighting wiring. Conduits not less than 25 mm and wires not less than 2.5 sq.mm copper shall be used for power wiring.

Every conductor shall be provided with identification ferrules matching the drawings.

CELLING ROSES:

These shall be of bakelite and of approved make and colour and shall not contain fuse terminals. These shall be provided with brass ceiling plate and M.T. Brass screws and washers with cord grip for termination of wires.

- a. Plate type, moulded design - switches on white Urea Powder pressed cover plates. These shall be of single pole, double pole, two ways, one way or otherwise as called for in the Schedule. These shall be manufactured as per relevant IS Codes and shall comply with Indian Electricity Rules. The minimum rating shall be 5 A at 250 V AC.

SOCKET OUTLETS WITH PLUGS:

These shall be white Urea Powder pressed sockets in 2 pin and earth design of best quality, suitable for single phase, 250 volts supply. The earth pin shall be effectively connected to the nearest earth connections in distribution board / switch board with not less than 3 mm² (No. 14 SWG) copper wire. The socket outlets shall be in Plano type flush mounting or on plate designs as called for in the schedule:

INTERLOCKED METAL CLAD SWITCH FUSE UNITS:

The Metal Clad switch fuse unit shall be of the heavy duty type, quick make and break action, of any approved pattern and capable of carrying continuously the current specified. All the switch fuse units shall have "U" type contacts on fuse carriers and the switch fuse units of capacities 30 amps and above shall be provided with spring type contacts on the fuse bases. Unless otherwise specifically brought out in the schedule the metal cases shall be of cast iron and shall be provided with knock - outs for incoming and outgoing pipes or cables and earthing terminals. The cover of the switch shall be interlocked with the switch handle so that the cover cannot be opened unless the switch is "OFF" and the switch cannot be made on unless the cover is fixed.

MODE OF MEASUREMENT:

Wiring in suites and rooms shall be measured as per BOQ points. Other wiring shall be measured and paid on the basis of points and definition of points wiring shall be as mentioned in the schedule of work and shall include all junction boxes of 16 SWG, MS box to house switches, sockets, fan regulators with cadmium plated brass screws, to accommodate plate switches connector earth wire fixing accessories, connection to all light fixtures, fans etc. Sub mains / circuit wiring from LDB to main switchboard of individual room / cabin / areas will be paid separately.

TESTING :

The entire installation shall be tested for:

- a. Insulation resistance.
 - b. Earth continuity.
- Polarity of Single pole switches.

ERECTION OF CONDUITS

- a) The conduit shall be properly and tightly screwed between the various lengths and into the boxes through which it runs and terminals so that the wiring is continuously, and effectively protected through out its entire length. No part of the conduit shall be under mechanical stress and the whole conduit system shall be electrically and mechanically continuous through out.
- b) Corners shall be turned by means of easy bends or sets made without altering the section or opening the same. The radius of every conduit bends shall be such as to allow compliance with regulation B-32 of I.E.E. regulations for bends. in cable; and in addition the inner radius of the bend shall not be less 2.5 times the out side diameter of the conduit.
- c) Where conduits are connected by means of a socket, the ends of the conduit shall be put together in the centre of the socket, and in the case of running joints no exposed shall be visible after erection.

FIXING OF BOXES

- (a) All boxes, except those for external works, shall be securely fixed by means of counter sunk screws, minimum size 40mm No.8 using approved type rawl plugs.
- (b) At least one screw shall be used for fixing standard circular boxes and adaptable boxes up to 100mm size. A minimum of four fixing screws shall be used for larger boxes.
- (c) In all cases, the fixing holes shall be suitable for counter sunk screws, so that the screws heads do not project into the boxes and all screws driver burrs shall be removed before cables are drawn in.
- (d) For external work and other particularly damp situations, galvanised cast iron, weatherproof boxes with external fixing lugs shall be used.
- (e) In addition to the external fixing, the boxes shall be supported by saddles spaced not more than 150mm on each side of the box Fixing holes shall not be drilled in the box.

EARTHING

- (a) Cypriot 14 swg minimum copper bare earth wire or insulated wire as specified is to be drawn in each conduit for earthing the general light and power outlet up to 230 volts and 2 for 415 volts. Earth conductor size shall be in accordance with I.E. Rules table D-2.
- (b) The earth conductor shall be terminated by means of drilling two holes in the conduit box, the earth wire shall pass through one hole to the outside of the box and shall be connected by means of a rose Courtney type washer to a 3/8", 2" BA round headed brass screws which shall be bolted into the second hole. Two washers and two nuts shall be used with each screw.
- (c) A similar arrangement to the above shall be used at the termination to the equipment or by any other approved manner, meeting with the approval of the Engineer.

INSTALLATION OF SWITCHES, SOCKETS & ACCESSORIES

All the switches shall be wired on phases connections shall be made only after testing the wires for continuity, cross phase etc. with the help of a switches, sockets, fan, regulator etc. shall be housed in proper sheet steel enclosure with PVC/Perspex sheet. Regulators shall be fixed on adjustable MS flat straps inside the enclosure. The arrangement of switches and sockets shall be neat and systematic covers for enclosures accommodating switches, sockets, etc.(point control boxes) shall be of 5mm thick. fine finished PVC/PERSPEX material/hylam are fixed to the enclosure in plumb with counter sunk head, chromium plated brass screws. outlets shall be terminated into a ceiling rose for fan points and into autoway wall plug sockets, the conductors may be terminated directly into the switches and sockets. The outlets, point control boxes etc. shall be set out as shown on the drawings. Before fixing these, the contractor shall obtain clearance from the Engineer/Architect with regard to their proper locations. The enclosures of sockets/and 3rd pin of the sockets shall be connected to the ground through a proper size earth continuity wires as laid out in standard specifications no. MV-150.

POSITION OF POINTS, DISTRIBUTION BOARDS & SWITCHBOARDS

- a) The recommended position of the light point, control switches, distribution boards as approved on the drawings shall be adhered to as far as practicable. In case of location changes due to Architectural requirements, no extra payments will be made on this account.

b) Before commencement of work, the exact final position of all points, switch boxes and the distribution boards shall be ascertained by the Bidder from the EIC.

SAMPLES

The contractor shall submit 2 sets of samples of accessories and apparatus, he proposes to use in the installations, at site for approval as required. This specification shall not be departed from without any written instructions from the Owner.

MANUFACTURER'S INSTRUCTIONS.

Where manufacturers have furnished specific instructions relating to the material/equipment to be used in this job, covering points, not specifically mentioned in these documents, manufacturer's instructions shall be followed.

MATERIALS AND EQUIPMENTS

All the materials and equipments shall be of approved make and design, Unless otherwise called for, only the best quality materials and equipment shall be used.

PRICES

Prices shall remain firm and free from variations due to rise in the cost of materials/labour during the stipulated period of execution and during extended period of Completion of project.

GENERAL SPECIFICATION FOR SANITARY

SECTION

It is not the intention to specify completely herein all aspects of design and constructional features of equipment's and details of the work to be carried out, nevertheless, the equipment and work shall confirm in all respects to high standards of Engineering, Design and workmanship and shall be capable of performing in continuous commercial operation in a manner acceptable to the owner who will interpret the meaning of the specifications and drawings and shall have right to reject or accept any work or material which in his assessment is not complete to meet the requirements of this specifications and / or applicable code and standards mentioned elsewhere in this specifications.

MATERIAL AND WORKMANSHIP

1. The rater for laying and fixing of the pipelines, valves and other specials etc. of concealed type should include additional cuttings, threading of pipes etc. & chiseling, making holes the wall, floor, RCC wherever required and making the good the same. If required and no claim on this account will be entertained.
2. If any road is required to be cut for laying water supply or drainage line that will be done by the contractor at no extra cost and road should be restored to its original conditions after laying and testing of pipelines, all at no extra cost.
3. G. I. pipe fittings (Heavy) shall be either major brand with ISI mark as approved by engineer - in-charge.
4. The G. I. pipe wherever required to be used shall be of "C" class (Heavy) quality. The pipes shall be either TATA, ZENITH, JINDAL make approved by Engineer-in-charge.
5. CI soil waste and vent pipes with ISI marks of established brand shall be used for work Pipes should confirm to IS 3980.

6. The W. C. seat, wash hand basin, Urinal etc. shall be as per approved CT no. and shall be of Cera, Hindustan sanitary, Parryware make and first quality and with ISI mark if available.
7. The contractor has to dump the excavated/ debries etc stuff out side the premises or as directed by Engineer-in-charge.
8. The PVC flushing cistem of 10 litre capacity shall preferably of champion or established brand with ISI mark as approved by Engineer-in-charge.
9. The hold fasts for doors and windows shall be provided as per IS 7196-1974.
10. Nahani trap should be of standard brand confirming to ISI with proper water seal and same shall be got approved by the Engineer-in-charge.
11. Gun metal wheel valve shall be of approved brand and weight as per relevant IS with ISI mark and as per IS 770/1584.
12. Gully trap shall be confirming to IS 651 and shall have to be got approved by the Engineer-in-charge.
13. The fittings viz sluice valves etc. should be cleaned and to be painted with two coats of anti-corrosive paint etc. to the entire satisfaction of the Engineer- in-charge before installing the same in position at no extra cost.
14. All the sluice valves required for the work shall with stand a pressure of 20 kg / cm and shall be strictly in accordance with the IS specifications and must have the ISI certificate stamp mark on the body of the sluice valve. The valves without ISI mark/stamp make will not be acceptable.
15. The contractor shall have to make necessary and adequate pumping arrangements mechanically for dewatering the subsoil water at all stages of construction at no extra cost.

LIST OF INDIAN STANDARDS REFERRED TO

1. I.S. No. 1200 - Latest measurement of building and civil engineering work.
2. I.S. No. 287 - 1973.

Recommendation for maximum permissible moisture content of Tiber used for different

purposes in different climatic zones.

3. I. S. No. 1141 - 1973 code of practice for seasoning of timber.
4. I. S. No. 6534 - 1971 guiding principles for grading and inspection of timber.
5. I. S. No. 1200 (Part XXI) 1973
Method of measurement of building and civil engineering works. Part XXI wood work and joinery.
6. I.S. No. 3845 - 1966. code of practice for joints used in wooden furniture.
7. I. S. No. 4000 - 1967. Wooden flush doors. Type to method of test for.
8. I. S. No. 4970 - 1973. Key for identification of commercial timbers.
9. I. S. No. 3364 (Part II) - 1975, Method of measurement and evaluation of defects in timber, part II converted timber.
10. I. S. No. 1708 - 1969. Method of testing small clear specimens of timber.
11. I. S. No. 6342 - 1971. Rose wood logs for production of sliced veneers.
12. I. S. No. 5248 - 1969. Teak logs for production of sliced veneers.
13. I. S. No. 2202 (Part I) 1973. Specification for wooden flush door shutters (solid core type part I plywood)
14. I. S. No. 2338 (Part I) - 1967. Code of practice for finishing of wood and wood based materials part I operations and workmanship.
15. I. S. No. 7630 - 1975. Methods of sampling of plywood.
16. I. S. No. 303 - 1975. Specification for plywood for general purposes.
17. I. S.No. 3129 - 1965. Specification for article board for insulation purposes.
18. I. S. No. 3513 - 1966. (part I. S. No. & part IV). High and medium density wood based laminates part I. S. No. general purposes. Part IV sampling test.
19. I. S. No. 1659 - 1979 block boards.
20. I. S. No. 7316 -1974. Decorative plywood using plurality of veneers for decorative faces.
21. I. S. No. 3478 - 1966. High density wood particle boards.
22. I. S. No. 1734 (part I to XX). Plywood method of test for
Part I .General
Part II .Plywood
Part III .Battens
23. I. S. No. 1328 - 1970. Veneer decorative plywood.
24. I. S. No. 710 - Marine ply.

25. I. S. No. 3087 -1965. Wood particle boards (Medium density)
26. I. S. No. 848 -1974. Specification for synthetic resin adhesives for plywood (Phenolic & Aminoplastic)
27. I. S. No. 2046 - 1969. Specification for decorative laminate.
28. I. S. No. 8273 - 1976. Fibrous gypsum plaster boards.
29. I. S. No. 2095 - 1964. Gypsum plaster boards.
30. I. S. No. 2542 (part I) - 1978. gypsum plaster concrete and products, methods of test for part I - plaster and concrete.
31. I. S. No. 8272 - 1976. gypsum plaster for use in the manufacture of fibrous plaster boards.
32. I. S. No. 2441 - 1963. Fixing coiling coverings code of practice for.
33. I. S. No. 2835 - 1977. Specification for flat transparent sheet glass.
34. I. S. No. 2395 (Part I) - 1966
2395 (Part II) - 1967
Painting to concretes, masonry, plaster surfaces code of practice for part - I operation and workmanship part II schedule.
35. I. S. No. 3548 - 1966. Glazing in building code of practice for.
36. I. S. No. 6278 - 1971. White washing and colour washing, code for practice for.
37. I. S. No. 137 - 1965. Specification for ready mixed paint brushing, matt or egg shall flat finishing, interior to Indian standards colours as required.
38. I. S. No. 133 - 1975. Specification for ready mixed paint brushing, wooden coating, interior to Indian standard colours.
39. I. S. No. 129 - 1950. Specification for enamel interior (a) under coating (b) finishing
40. I. S. No. 120 - 1950. Specification for ready mixed paint brushing gray filler for enamel for use over primer.
41. I. S. No. 129 - 1950. Specification for ready mixed paint brushing, finishing, interior, oil gloss, for general purposes to Indian standard colours.
42. I. S. No. 533 - 1973. Specification for gum sprit of turpentine (oil of turpentine)
43. I. S. No. 101 - 1964. Methods of test for ready mixed paints and enamel.
44. I. S. No. 75 - 1973. Specification for linseed oil, and refined.

45. I. S. No. 77 - 1976. Specification for linseed oil, boiled for paint.
46. I. S. No. 124 (part I) - 1976. Specification for ready mixed paint brushing, finishing, semi glosses, for general purpose.
47. I. S. No. 5884 - Specification for woolen carpets.
48. I. S. No. 104 - 1979. Specification for ready mixed paint brushing, finishing, zinc chrome primer.
49. I. S. No. 5391 - 1969. Adjustable metal chairs for use of typist and operators in telephone exchanges.
50. I. S. No. 8756 - 1978. Ball catches for use in wooden almirahs.
51. I. S. No. 3499 - 1976 (part II) chairs for office purposes metal revolving and tilt in.
52. I. S. No. 5416 - 1969. General purpose wooden chairs methods of test for.
53. I.S. No. 6185 - 1971. High chairs specification and safety requirements for.
54. I. S. No. 4116 - 1976. Joints used in wooden furniture code of practice for.
55. I. S. No. 3845 - 1966. Joints used in wooden furniture code of practice for.
56. I. S. No. 7070 - 1973. Shelving racks wooden (adjustable and non - adjustable type).
57. I. S. No. 4414 - 1977. Table tops (wooden)
58. I. S. No. 5967 - 1969. Tables, wooden, methods of test for.
59. I. S. No. 3564 - 1975. Door closers (hydraulically regulated)
60. I. S. No. 799 - 1979. Drawer locks, cupboards and box locks.
61. I. S. No. 7981 - (part I) - 1975. glossary of terms relating to builders hardware - part I locks.
62. I. S. No. 204 - (part I II) 1978. Tower bolts ferrous metals and nonferrous metals.

NB : The various items to be used in the interior decoration work shall be of BRANDED manufactures of market leaders above clause is only for specifying ISI standards.

Technical specification

Type :A –Resort

1. SITE PREPARATION:

A. Setting out Location

All the components including cottages, restaurants, conservation /buffer and development zones will need to be marked on site taking the restaurant as reference point on eastern coast of beel. The setting out will need to be checked and approved by the architect.

B. Cleaning Site/s

All the marked locations will need to be cleaned of unwanted bushes/stones/twigs/dead logs

C. Ramming/Leveling

Only the location points with diameter 900 mm for point foundation will be leveled and rammed for excavation.

D. Trees

NO existing trees of diameter (> 100 mm) will be pruned/ cut/relocated from existing location. If any conflict arises with placement of built components, the built components will be relocated and shifted after discussion with architects.

2.EXCAVATION & FOUNDATION

A. Excavation

1. All the points of foundation will be set as per drawing.
2. Earth will be dug at foundation points to a depth of 500 mm and Earth will be densified and leveled to a depth of 350 mm.
3. The excavation depth will be 500 mm from the leveled ground. After ramming the foundation base, 100 mm deep small crushed stone bed will be laid. Base should be compacted and leveled throughout the excavated area.

B. Point Foundation

1. A concrete base of dia 500 mm x 400 mm will be set in the foundation with a metal cap 12mm thick of dia 400 mm.
2. The Earth will be filled and levelled after secured fixing of steel pipes to the metal plates.

3.STRUCTURE

The structure of the cottage is divided into two parts; Sub-Structure and Super-Structure

A. Sub Structure

1. The Sub Structure of the cottage will take care of load transfers from the deck to the ground. The finished surface of the deck is raised at a height of 1200mm from ground level.
2. The pipes will have to be cut in a workshop off site (not on the island) and assembled at site to fix it to point foundation at angle (refer to the drawings) Calculations for structural details to be done by structural engineering consultants.
3. The pipes will be bolt-joined (and not weld) to a metal plate connector fixed on the concrete foundation as per structural drawings. The structural grid will be of 1600mm x 1600mm at a height of 850 mm(refer to the drawings) Calculations for structural details to be done by structural engineering consultants.
4. The steel grid will be cross braced at the under surface of deck for structural stability. Calculations for structural details to be done by structural engineering consultants.

B. Super Structure

COLUMN

1. The columns are made up of a composite system of MS Steel and Sal Wood as shown in the plan.
2. The cross shaped metal section (200 mm x 200 mm) will have 4 blocks of Sal wood (100mm x100mm) on all four quadrants of metal section.
3. The columns will be bolted to the structural system below the deck through a metal plate connector (as per structural specification and drawings).

RING BEAM

The columns will be tied at a height of 2800mm with a wooden lintel beam. The section will be sal wood section of size is 150 x 150 mm, cut at an angle according to the slope of the roof underside.

4. FLOORING

A. Structure

1. The deck will be laid out on MS L-Section 75mm x35 mm laid at the edge of the building grid with finish surface at height of 1200mm from ground level. Calculations for structural details to be done by structural engineering consultants. There will be secondary MS T-sections 100mm x35mm placed at distance of 700 mm c-c on the grid.
2. The primary layer in the flooring of deck will consist of durable wooden planks (hardwood), size 300mmx700mmx- 38mm. Alternate solutions are welcome for discussion with architects from team of

contractors/consultants.

B. Finish

DECK

1. All the open areas on the deck have teak wood flooring (or similar quality).
2. The size of the planks will be 300 mm x 700 mm x 38 mm with 5mm with grooves on exposed surface at a regular distance of 8mm.(refer to pictures in material palette)
3. Teak wood (same as flooring) skirting , 400mm high and 38 mm thick will be fixed to the external surface of the walls at edges of the deck.

A.Bathrooms

The base layer for all the flooring in covered areas will be of 38 mm wooden planks (with no grooves). 12mm thk indus- trial rubber mats (1200 mm wide) will be stretched over the planks. 50mm Limecrete bed. The base layer will be. All the wet and dry areas on the floor in bathroom will be finished with small ceramic tiles 50mmx50mmx10mm set in lime mortar bed of 50 mm thickness, prepared for finishes with termite treatment and waterproofing, as per drawings from architects. Bathroom Counters to be made of 50mm thk self supporting limecrete slab with beetle nuts embedded in 15mm thk raisin.

B. Bedrooms

The base layer for all the flooring in covered areas will be of 38 mm wooden planks (with no grooves). 12mm thk indus- trial rubber mats (1200 mm wide) will be stretched over the planks. All the floor surfaces in the bedroom finished with terra cotta) clay tiles , size 150mm x 150mm x 20 mm set in lime mortar as per pattern indicated in drawings from architects).A 150mm x 20 mm terracotta skirting will be fixed to the wall at floor edges.

C. External open bathroom

Floor to be finished with small size driver pebbles (dia 10mm to 50 mm), on top of a bed of large stones laid on rammed earth.

6. STAIRCASE and RAMP

1. The finish for the staircase to be done with same specifications of wooden planks for deck. Size of planks to be kept equal to the size of the tread and riser.
2. Anti skid grooves to be provided on exposed surface of the treads.
3. 20 mm dia semi circular timber nosing to be nailed to the tread as per detail.
4. The ramp to be laid out at a slope of 1:20 as per the drawing. First 5000 mm of ramp to follow the same specification of finishing of the deck. The ramp will merge with the green mound climbing up to the cottage as shown in the drawing.
5. Stainless steel balustrades to be manufactured and installed on staircase, ramp and the deck as per the design and layout with an offset of 75 mm from outer edge.
6. Teakwood handrail section, size 100 X 35 mm, to be manufactured and installed on staircase, ramp and the deck as per the design and layout
7. Stainless steel balustrades to be manufactured and installed on staircase, ramp and the deck as per the design and layout with an offset of 75 mm from outer edge.

7. WALLS

Ekra Walls The wall composed of salwood framework; bamboo slits with reed net and finished with lime plaster.

1. The primary framework will be made of 150mm x 75 mm Sal wood frame placed at a distance of 600mm c-c vertically. Secondary Sal wood frames of size 75mm x 75 mm to be placed in main frame, flushed to the internal edge of the vertical joists, as per pattern indicated in drawings.
2. Metal Cable cross-bracings to be provided for the outer frame of the wall and near the edge of door/windows as indicated in the drawings.
3. The wooden framework will have an infill of bamboo slits and reed. 2 layers of ekra framework will be made, internal and external, both at the inner and outer edge of the horizontal secondary salwood framework. In each, bamboo slits will be arranged parallel to each other in the frame, fixed in 6 mm d 50 mm deep grooves, at a distance of 20 mm c-c.
4. 10 mm dia reed sticks will be crisscrossed in and out along the bamboo slits. Please refer to detail drawings for arrangement and pattern of reed.
5. The internal wall is finished with 12mm thk lime plaster mixed with natural seed oil. Plaster to be flushed throughout the wall.
6. The external wall to be finished with 3mm rough lime plaster light wash mixed with natural pigments and natural seed oil.
7. all framework to be bolted to the deck at the base, columns at the sides, and lintel beams on top.
8. The wall section should not be 100 % solid leaving scope for air flow from outside to avoid humid conditions in the rooms.
9. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.

Internal walls

Internal walls of bathrooms to be made 100 mm thick sandwich plywood partitions. The wooden partitions will be fixed to MS box sections 70mm x 70 mm framed as per drawing.

External bathroom wall

Wall to be made of baked bricks arranged in a jaali pattern.

9. DOORS

1. Framework: All the frames for doors to be manufactured of sal wood as per size and details in door schedule.
2. Shutters: As per Door Schedule
3. The timber frames to be finished with 2 coats of melamine polish/anti termite treatment before and after fixing the timber doors.

8. WINDOWS

1. Framework: All the frames for windows to be manufactured in Sal timber sections 85 mm x 85 mm as per detail in window schedule. The frame will be bolted to the main wall framework. Details to be followed as specified in the drawings from the architects. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.
2. Shutters for folding window: The teak wood shutters to be manufactured and fixed to timber framework fixed with single glazing (5mm thick) as per detail. The glass will be sealed to shutters with white silicon. The timber channels will allow sliding and folding of 500 mm wide shutters (folding outside)
3. Other Shutters: As per window schedule
4. Ventilators: All ventilators (opening outwards) will be fixed with 5 mm thick translucent glass in wooden frame bolted to the main wall framework, as per window schedule.
5. The timber frames to be finished with 2 coats of melamine polish/anti termite treatment before and after fixing the shutters.
6. Window cills to be made as teak wood seatings 600mm wide, 50mm thk (length as specified in drawings) supported by triangular timber joists 50mm thk. Size and detail of joists as specified in drawings.

10. ROOF

A. Structure

1. The Primary Beam structure of roof to be laid out in Sal wood beams (300mm deep x 150mm wide) as per the drawing. Each beam will be clamped to a MS T-section (6 mm thick) and size 150mmx 75 mm as per the structural drawings. The beams will rest on the lintel beam on edges.
2. Secondary beam of the roof to be out in Sal wood beams (50mm deep x 80mm wide) as per the drawing. Each beam will be clamped to a MS L-section (6 mm thick) and size 50mmx 75 mm as per the structural drawings.
3. The next layer will be 20 mm Sal wood planks (1200mmx600 mm) fixed to the primary beams and secondary beam structure.
4. Next will be two coats of specified waterproofing.
5. Final finish of Natural color terracotta tile Size 200mmx400mm to be fixed with wooden hooks as per details.

B. Finish

1. Clay tiles in natural colour, size 200mm x 400mm, will be pro- cured and laid as per detail on top of wooden rafters. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.
2. No gaps to be left while laying clay tiles and a minimum over- lap of 20 mm to be considered while laying tiles.

C. False Ceiling

1. Bedroom: Rice paper, with natural leaf pattern, as shown in material palette, will be fixed onto a timber grid, with members 50mmx50mm in size. The grid size for wooden frame will be 600mmx600mm with setbacks from eaves as per drawings from the architects. Light fixtures will be fixed 300 mm above the paper, at strategic points as per drawings.
2. Bathroom: The false ceiling will be installed at a clear height of 3200 mm from ffl. Mineral fiber boards finished with PoP will be hung on an aluminum frame via nylon cables.

D. Gutters

Zinc Gutters size 300mmx150 mm to be clamped to the roof edges as specified in the drawings.

E. Insulation

Nail the layer of 30 mm thick glass wool insulation under side of the plywood sheeting. Finish by covering the from the architects. Light fixtures will be fixed 300 mm above the paper, at strategic points as per drawings.

2. Bathroom: The false ceiling will be installed at a clear height of 3200 mm from ffl. Mineral fiber boards finished with PoP will be hung on an aluminum frame via nylon cables.

D. Gutters

Zinc Gutters size 300mmx150 mm to be clamped to the roof edges as specified in the drawings.

E. Insulation

Nail the layer of 30 mm thick glass wool insulation under side of the plywood sheeting. Finish by covering the

TYPE B

1. ACCESS TO SITE

Brahmaputra River front

(Destination Development of Brahmaputra River front and cruise vessel on Brahmaputra, Assam) Beautification of riverfront Brahmaputra at Guwahati (civil, sanitary, water supply & electrification Work)

Procuring Materials

All the materials specified in the Bill of Quantities will be procured by the contractors as per agreement and transported to site via existing bridge and dyke along the beel. NO new road/ bridge to be constructed for access/transportation of labour and material to the site of development. All the materials and construction site will be required to be secured and protected from any natural/man made disaster on site.

2. SITE PREPARATION

A. Setting Out Location for Phase 1

All the components including cottages, restaurants, conservation/buffer and development zones will need to be marked on site taking the restaurant as reference point on eastern coast of beel. The setting out will need to be checked and approved by the architect.

B. Cleaning Site/s

All the marked locations will need to be cleaned of unwanted bushes/stones/twigs/dead logs

C. Ramming/Leveling

Only the location points with diameter 900 mm for point foundation will be leveled and rammed for excavation.

D. Trees

No existing trees of diameter (> 100 mm) will be pruned/ cut/relocated from existing location. If any conflict arises with placement of built components, the built components will be relocated and shifted after discussion with architects.

3.EXCAVATION & FOUNDATION

A. Excavation

1. All the points of foundation will be set as per drawing.
2. Earth will be dug at foundation points to a depth of 500 mm and Earth will be densified and leveled to a depth of 350 mm.
3. The excavation depth will be 500 mm from the leveled ground. After ramming the foundation base, 100 mm deep small crushed stone bed will be laid. Base should be compacted and leveled throughout the excavated area.

B. Point Foundation

1. A concrete base of dia 500 mm x 400 mm will be set in the foundation with a metal cap 12mm thick of dia 400 mm.
2. The Earth will be filled and leveled after secured fixing of steel pipes to the metal plates.

4.STRUCTURE

The structure of the cottage is divided into two parts; Sub-Structure and Super-Structure

A. Sub Structure

1. The Sub Structure of the cottage will take care of load transfers from the deck to the ground. The finished surface of the deck is raised at a height of 1200mm from ground level.
3. The pipes will have to be cut in a workshop off site (not on the island) and assembled at site to fix it to point foundation at angle (refer to the drawings) Calculations for structural details to be done by structural engineering consultants.

B. Super Structure

COLUMNS

1. The columns are made up of a composite system of MS Steel and Sal Wood as shown in the plan .
2. The cross shaped metal section (200 mm x 200 mm) will have 4 blocks of Sal wood (100mm x100mm) on all four quadrants of metal section.
3. The columns will be bolted to the structural system below the deck through a metal plate connector (as per structural specification and drawings).

RING BEAM

The columns will be tied at a height of 2800mm with a wooden lintel beam. The section will be sal wood section of size size is 150 x 150 mm, cut at an angle according to the slope of the roof underside.

5. FLOORING

A. Structure

1. The deck will be laid out on MS L-Section 75mm x35 mm laid at the edge of the building grid with finish surface at height of 1200mm from ground level. Calculations for structural details to be done by structural engineering consultants. There will be secondary MS T-sections 100mm x35mm placed at distance of 700 mm c-c on the grid.
2. The primary layer in the flooring of deck will consist of durable wooden planks (hardwood), size 300mmx700mmx-38mm. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.

B. Finish

DECK

1. All the open areas on the deck have teak wood flooring.(or similar quality).
2. The size of the planks will be 300 mm x 700 mm x 38 mm with 5mm with grooves on exposed surface at a regular distance of 8mm.(refer to pictures in material palette)
3. Teak wood (same as flooring) skirting, 400mm high and 38 mm thick will be fixed to the external surface of the walls at edges of the deck.

A. Bathrooms

The base layer for all the flooring in covered areas will be of 38 mm wooden planks (with no grooves). 12mm tyke industrial rubber mats (1200 mm wide) will be stretched over the planks. 50 mm Limecrete bed. The base layer will be.

All the wet and dry areas on the floor in bathroom will be finished with small ceramic tiles 50mmx50mmx10mm set in lime mortar bed of 50 mm thickness, prepared for finishes with termite treatment and waterproofing, as per drawings from architects.

Bathroom Counters to be made of 50mm thk self supporting limecrete slab with beetel nuts embedded in 15mm thk raisin.

B. Bedrooms

The base layer for all the flooring in covered areas will be of 38 mm wooden planks (with no grooves). 12mm thk indus- trial rubber mats (1200 mm wide) will be stretched over the planks.

All the floor surfaces in the bedroom finished with terra cotta) clay tiles , size 150mm x 150mm x 20 mm set in lime mortar as per pattern indicated in drawings from architects). A 150mm x 20 mm terracotta skirting will be fixed to the wall at floor edges.

C. External open bathroom

Floor to be finished with small sizedriver pebbles (dia 10mm to 50 mm), on top of a bed of large stones laid on rammed earth.

D. Sitting Room

The base layer for all the flooring in covered areas will be of 38 mm wooden planks (with no grooves). 12mm thk industrial rubber mats (1200 mm wide) will be stretched over the planks.

All the floor surfaces in the sitting room finished with limecrete as per detail. A 150mm x 20 mm terracotta skirting will be fixed to the wall at floor edges.

6. STAIRCASE and RAMP

1. The finish for the staircase to be done with same specifications of wooden planks for deck. Size of planks to be kept equal to the size of the tread and riser.
2. Anti skid grooves to be provided on exposed surface of the treads.
3. 20 mm dia semi circular timber nosing to be nailed to the tread as per detail.
4. The ramp to be laid out at a slope of 1:20 as per the drawing.
First 5000 mm of ramp to follow the same specification of finishing of the deck. The ramp will merge with the green mound climbing up to the cottage as shown in the drawing.
5. Stainless steel balustrades to be manufactured and installed on staircase, ramp and the deck as per the design and layout with an offset of 75 mm from outer edge.
6. Teakwood handrail section, size 100 X 35 mm, to be manufactured and installed on staircase, ramp and the deck as per the design and layout
7. Stainless steel balustrades to be manufactured and installed on staircase, ramp and the deck as per the design and layout with an offset of 75 mm from outer edge.

7. WALLS

Ekra Walls

The wall composed of salwood frame work, bamboo slits with reed net and finished with lime plaster.

1. The Primary frame work would be made of 150mmX75mm Sal frame placed at a distance of 600mm c-c vertically secondary Sal wood frames of size 75mm x 75 mm to be placed in main frame, flushed to the internal edge of the vertical joists, as per pattern indicated in drawings.
2. Metal Cable cross-bracings to be provided for the outer frame of the wall and near the edge of door/windows as indicated in the drawings.
3. The wooden framework will have an infill of bamboo slits and reed. 2 layers of ekra framework will be made, internal and external, both at the inner and outer edge of the horizontal secondary salwood framework. In each, bamboo slits will be arranged parallel to each other in the frame, fixed in 6 mm dia, 50 mm deep grooves, at a distance of 20 mm c-c.
4. 10 mm dia reed sticks will be crisscrossed in and out along the bamboo slits. Please refer to detail drawings for arrangement and pattern of reed.
5. The internal wall be finished with 12mm thk lime plaster mixed with natural seed oil. Plaster to be flushed throughout the wall.
6. The external wall to be finished with 3mm rough lime plaster light wash mixed with natural pigments and natural seed oil.
7. Wall framework to be bolted to the deck at the base, columns at the sides, and lintel beams on top.
8. The wall section should not be 100 % solid leaving scope for air flow from outside to avoid humid conditions in the rooms.
9. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.

Internal walls

Internal walls of bathrooms to be made 100 mm thick sandwich plywood partitions. The wooden partitions will be fixed to MS box sections 70mm x 70 mm

framed as per drawing.

External bathroom wall

To be made of baked bricks arranged in a jaali pattern.

8. WINDOWS

1. Framework: All the frames for windows to be manufactured in Sal timber sections 85 mm x 85 mm as per detail in window schedule. The frame will be bolted to the main wall framework. Details to be followed as specified in the drawings from the architects. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.
2. Shutters for folding window: The teak wood shutters to be manufactured and fixed to timber framework fixed with single glazing (5mm thick) as per detail. The glass will be sealed to shutters with white silicon. The timber channels will allow sliding and folding of 500 mm wide shutters(folding outside)
3. Other Shutters: As per window schedule
4. Ventilators: All ventilators (opening outwards) will be fixed with 5 mm thick translucent glass in wooden frame bolted to the main wall framework, as per window schedule.
5. The timber frames to be finished with 2 coats of melamine polish/anti termite treatment before and after fixing the shutters.
6. Window cills to be made as teak wood seatings 600mm wide, 50mm thk (length as specified in drawings) supported by triangular timber joists 50mm thk. Size and detail of joists as specified in drawings.

9. DOORS

1. Framework: All the frames for doors to be manufactured of sal wood as per size and details in door schedule.
2. Shutters: As per Door Schedule
3. The timber frames to be finished with 2 coats of melamine polish/anti termite treatment before and after fixing the timber doors.

10. ROOF

A. Structure

1. The Primary Beam structure of roof to be laid out in Sal wood beams (300mm deep x 150mm wide) as per the drawing. Each beam will be clamped to a MS T-section (6 mm thick) and size 150mmx 75 mm as per the structural drawings. The beams will rest on the lintel beam on edges.
2. Secondary beam of the roof to be out in Sal wood beams (50mm deep x 80mm wide) as per the drawing. Each beam will be clamped to a MS L-section (6 mm thick) and size 50mmx 5 mm as per the structural drawings.
3. The next layer will be 20 mm Sal wood planks (1200mmx600 mm) fixed to the primary beams and secondary beam structure.
4. Next will be two coats of specified waterproofing.
5. Final finish of Natural color terracotta tile Size 200mmx400mm to be fixed with wooden hooks as per details

B. Finish

1. Clay tiles in natural colour, size 200mm x 400mm, will be procured and laid as per detail on top of wooden rafters. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.

2. No gaps to be left while laying clay tiles and a minimum overlap of 20 mm to be considered while laying tiles.

C. False Ceiling

1. Bedroom: Rice paper, with natural leaf pattern, as shown in material palette, will be fixed onto a timber grid, with members 50mmx50mm in size. The grid size for wooden frame will be 600mmx600mm with setbacks from eaves as per drawings from the architects. Light fixtures will be fixed 300 mm above the paper, at strategic points as per drawings.
2. Bathroom: The false ceiling will be installed at a clear height of 3200 mm from ffl. Mineral fiber boards finished with PoP will be hung on an aluminum frame via nylon cables.
3. Sitting room: Rice paper, with natural leaf pattern, as shown in material palette, will be fixed onto a timber grid, with members 50mmx50mm in size. The grid size for wooden frame will be 600mmx600mm with setbacks from eaves as per drawings from the architects. Light fixtures will be fixed 300 mm above the paper, at strategic points as per drawings.

D. Gutters

Zinc Gutters size 300mmx150 mm to be clamped to the roof edges as specified in the drawings.

E. Insulation

Nail the layer of 30 mm thick glass wool insulation under side of the plywood sheeting. Finish by covering the insulation with treated bamboo mat in bet

1. ACCESS TO SITE

Island

Merbeel Island, in its current situation is accessible throughout phase 1 via the existing kuchcha road which connects it with the mainland on north western side(refer fig 1). The road bridge will be dismantled and the new bridge will be installed in the future phases as per the vision/master plan.

Procuring Materials

All the materials specified in the Bill of Quantities will be procured by the contractors as per agreement and transported to site via existing bridge and dyke along the beel. NO new road/bridge to be constructed for access/ transportation of labour and material to the site of development. All the materials and construction site will be required to be secured and protected from any natural/manmade disaster on site.

2. SITE PREPARATION

A. Setting Out Location of project.

The setting out will need to be checked and approved by the architect.

B. Cleaning Sites

All the marked locations will need to be cleaned of unwanted bushes/ stones/twigs/dead logs

C. Ramming/Leveling

D. Trees

NO existing trees of diameter (> 100 mm) will be pruned/cut/relocated from existing location. If any conflict arises with placement of built components, the built components will be relocated and shifted after discussion with architects.

3. EXCAVATION & FOUNDATION

Excavation

1. All the points of foundation will be set as per drawing.
2. Earth will be dug at foundation points to a depth of 500 mm and Earth will be densified and leveled to a depth of 350 mm.
3. The excavation depth will be 500 mm from the leveled ground. After ramming the foundation base, 100 mm deep small crushed stone bed will be laid. Base should be compacted and leveled throughout the excavated area.

Point Foundation

1. A concrete base of dia 500 mm x 400 mm will be set in the foundation with a metal cap 12mm thick of dia 400 mm.
2. The Earth will be filled and leveled after secured fixing of steel pipes to the metal plates.

4. STRUCTURE

The structure of the Restaurant Deck is divided into two parts; Sub- Structure and Super-Structure

Sub Structure

1. The Sub Structure of the Restaurant Deck will take care of load transfers from the deck to the ground. The finished surface of the deck is raised at a height of 1200mm from ground level.
2. The pipes will have to be cut in a workshop off site (not on the island) and assembled at site to fix it to point foundation at angle (refer to the drawings) Calculations for structural details to be done by structural engineering consultants.
3. The pipes will be bolt-joined (and not weld) to a metal plate connector fixed on the concrete foundation as per structural drawings. The structural grid will be of according to the structural drawing at a height of 850 mm (refer to the drawings) Calculations for structural details to be done by structural engineering consultants.
4. The steel grid will be cross braced at the under surface of deck for structural stability. Calculations for structural details to be done by structural engineering consultants

Super Structure

COLUMNS

1. The columns are made up of a composite system of MS Steel and Sal Wood as shown in the plan.
2. The cross shaped metal section (200 mm x 200 mm) will have 4 blocks of Sal wood (100mm x 100mm) on all four quadrants of metal section.
3. The columns will be bolted to the structural system below the deck through a metal plate connector (as per structural specification and drawings).

RING BEAM

The columns will be tied at a height of 2800mm with a wooden lintel beam. The section will be sal wood section of size is 150 x 150 mm, cut at an angle according to the slope of the roof underside.

5. FLOORING

A. Structure

1. The deck will be laid out on MS L-Section 75mm x 35 mm laid at the edge of the building grid with finish surface at height of 1200mm from ground level. Calculations for structural details to be done by structural engineering consultants. There will be secondary MS T-sections 100mm x 35mm placed at distance of 700 mm c-c on the grid.
2. The primary layer in the flooring of deck will consist of durable wooden planks (hardwood), size 300mm x 700mm x 38mm. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.

B. Finish

Restaurant Deck

1. All the open areas on the deck have teak wood flooring.(or similar quality).
2. The size of the planks will be 300 mm x 700 mm x 38 mm with 5mm with grooves on exposed surface at a regular distance of 8mm.(refer to pictures in material palette)
3. Teak wood (same as flooring) skirting , 400mm high and 38 mm thick will be fixed to the external surface of the walls at edges of the deck.

Toilet and Kitchen

0.100" to 0.375" Stainless Steel Skid-free Floor Plates will be fixed to the Substructure using clamps.

Bathroom Counters to be made of 50mm thk self supporting limecrete slab with beetel nuts embedded in 15mm thk raisin.

Café, Shop and Guard Room

The base layer for all the flooring in covered areas will be of 38 mm wooden planks (with no grooves). 12mm thk industrial rubber mats (1200 mm wide) will be stretched over the planks.

All the floor surfaces in the bedroom finished with terra cotta) clay tiles , size 150mm x 150mm x 20 mm set in lime mortar as per pattern indicated in drawings from architects).A 150mm x 20 mm terracotta skirting will be fixed to the wall at floor edges.

6. STAIRCASE and RAMP

1. The finish for the staircase to be done with same specifications of wooden planks for deck. Size of planks to be kept equal to the size of the tread and riser.
2. Anti skid grooves to be provided on exposed surface of the treads.
3. 20 mm dia semi circular timber nosing to be nailed to the tread as per detail.
4. The ramp to be laid out at a slope of 1:20 as per the drawing. First 5000 mm of ramp to follow the same specification of finishing of the deck. The ramp will merge with the green mound climbing up to the Restaurant Deck as shown in the drawing.
5. Stainless steel balustrades to be manufactured and installed on stair- case, ramp and the deck as per the design and layout with an offset of 75 mm from outer edge.
6. Teakwood handrail section, size 100 X 35 mm, to be manufactured and installed on staircase, ramp and the deck as per the design and layout
7. Stainless steel balustrades to be manufactured and installed on stair- case, ramp and the deck as per the design and layout with an offset of 75 mm from outer edge.

8. WALLS

Ekra Walls

The wall composed of salwood framework, bamboo slits with reed net and finished with lime plaster.

1. The primary framework will be made of 150mm x 75 mm Sal wood frame placed at a distance of 600mm c-c vertically. Secondary Sal wood frames of size 75mm x 75 mm to be placed in main frame, flushed to the internal edge of the vertical joists, as per pattern indicated in drawings.
2. Metal Cable cross-bracings to be provided for the outer frame of the wall and near the edge of door/windows as indicated in the drawings.
3. The wooden framework will have an infill of bamboo slits and reed. 2 layers of ekra framework will be made, internal and external, both at the inner and outer edge of the horizontal secondary salwood framework. In each, bamboo slits will be arranged parallel to each other in the frame, fixed in 6 mm dia, 50

mm deep grooves, at a distance of 20 mm c-c.

4. 10 mm dia reed sticks will be crisscrossed in and out along the bamboo slits. Please refer to detail drawings for arrangement and pattern of reed.
5. The internal wall be finished with 12mm thk lime plaster mixed with natural seed oil. Plaster to be flushed throughout the wall.
6. The external wall to be finished with 3mm rough lime plaster light wash mixed with natural pigments and natural seed oil.
7. Wall framework to be bolted to the deck at the base, columns at the sides, and lintel beams on top.
8. The wall section should not be 100 % solid leaving scope for air flow from outside to avoid humid conditions in the rooms.
9. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.

Café Wall- Timber Slats

1. The primary framework will be made of 100mm x 200 mm Sal wood frame (for placement please refer to drawing). Secondary Sal wood frames of size 100mm x 200 mm to be placed in main frame, flushed to the internal edge of the vertical joists, as per pattern indicated in drawings.
2. Vertical Teakwood Slats 50 mm x 50 mm will be fixed to the frame- work externally at 100 mm c-c upto a height of 750 mm, 200 mm c-c from 750-Roof Beam. (Please refer to drawings)

Internal Toilet and Kitchen walls

1. The internal partition walls will be made of 8 mm thick opaque glass fixed wooden framework by stainless steel clamps. (please refer to drawings)
2. The internal toilet walls will be finished with 8 mm thick Clear glass upto a height of 1500 mm from the finished floor level. The parapet wall upto a height of 900 mm for the concealed cistern will be finished with 8 mm thick sandwiched glass with handmade paper/ textile.
3. The internal walls in the kitchen will be finished with 2 mm thick stainless deco-panels upto a height of 1500 mm. (Please refer to drawings).

9. WINDOWS

1. Framework: All the frames for windows to be manufactured in Sal timber sections 85 mm x 85 mm as per detail in window schedule. The frame will be bolted to the main wall framework. Details to be followed as specified in the drawings from the architects. Alternate solutions are welcome for discussion with architects from team of contractors/consultants.
2. Shutters for folding window: The teak wood shutters to be manufactured and fixed to timber framework fixed with single glazing (5mm thick) as per detail. The glass will be sealed to shutters with white silicon. The timber channels will allow sliding and folding of 500 mm wide shutters (folding outside)
3. Other Shutters: As per window schedule
4. Ventilators: All ventilators (opening outwards) will be fixed with 5 mm thick translucent glass in wooden frame bolted to the main wall frame- work, as per window schedule.
5. The timber frames to be finished with 2 coats of melamine polish/anti termite treatment before and after fixing the shutters.
6. Window cills to be made as teak wood seatings 600mm wide, 50mm thk (length as specified in drawings) supported by triangular timber joists 50mm thk. Size and detail of joists as specified in drawings.

10. DOORS

1. Framework: All the frames for doors to be manufactured of sal wood as per size and details in door schedule.
2. Shutters : As per Door Schedule
3. The timber frames to be finished with 2 coats of melamine polish/anti termite treatment before and after fixing the timber doors.

11. ROOF

A. Structure

1. The Primary Beam structure of roof to be laid out in Sal wood beams (300mm deep x 150mm wide) as per the drawing. Each beam will be clamped to a MS T-section (6 mm thick) and size 150mmx 75 mm as per the structural drawings. The beams will rest on the lintel beam on edges.
2. Secondary beam of the roof to be out in Sal wood beams (50mm deep x 80mm wide) as per the drawing. Each beam will be clamped to a MSL-section (6 mm thick) and size 50mmx 75 mm as per the structural drawings.
3. The next layer will be 20 mm Sal wood planks (1200mm x 600mm) fixed to the primary beams and secondary beam structure.
4. Next will be two coats of specified waterproofing.
5. Final finish of Natural color terracotta tile Size 200mm x 400mm to be fixed with wooden hooks as per details.

B. Finish

1. Clay tiles in natural colour, size 200mm x 400mm, will be procured and laid as per detail on top of wooden rafters. Alternate solutions are welcome for discussion with architects from team of contractors/con- sultants.
2. No gaps to be left while laying clay tiles and a minimum overlap of 20 mm to be considered while laying tiles.

C. False Ceiling

Restaurant and Shop: Rice paper, with natural leaf pattern, as shown in material palette, will be fixed onto a timber grid, with members 50mmx50mm in size. The grid size for wooden frame will be 1000mmx- 1000mm with setbacks from eaves as per drawings from the architects. Light fixtures will be fixed 300 mm above the paper, at strategic points as per drawings.

D. Gutters

Zinc Gutters size 300mmx150 mm to be clamped to the roof edges as specified in the drawings.

E. Insulation

Nail the layer of 30 mm thick glass wool insulation under side of the ply- wood sheeting. Finish by covering the insulation with treated bamboo.

Minutes of the meeting of Tender Committee of Assam State Transport Corporation held onat.....pm in the.....

Annexure -I

Availability of key items of Contractor's Equipment (Requirement) :-

| Item of Equipment | Requirement | | Availability Proposals | | | Remarks (from whom to be purchased) |
|---|-------------|----------|--------------------------------|-------------------|-------------------|--|
| | No. | Capacity | Owned/Leased to be Procured | Nos. /Capacity | Age/Con dition | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <i>Water Tanker</i> | 2 | | | | | |
| <i>Concrete Vibrator</i> | 2 | | | | | |
| <i>Welding Machine</i> | 2 | | | | | |
| <i>Cube Test Machine (Complete kit)</i> | 2 | | | | | |
| <i>Sieve Analysis (Complete kit)</i> | 2 | | | | | |
| <i>Concrete Hammer</i> | 2 | | | | | |
| <i>Concrete Mixer Machine</i> | 2 | | | | | |
| <i>Excavator, Truck & Dumper</i> | 2 | | | | | |
| <i>Lader</i> | 2 | | | | | |
| <i>Others</i> | L/S | | | | | |

Annexure -II

Qualifications and experience of key personnel :-

| Position | Name | Qualification | Year of Experience | Years of Experience in the Proposed position |
|------------------------------|------|---------------|-----------------------|--|
| 1 | 2 | 3 | 4 | 5 |
| Project Manager | 1 | | | |
| Site Engineer | 1 | | | |
| Quality Control Engineer. | 1 | | | |
| Electrical Engineer | 1 | | | |
| Other Staff | | | | |

