AN ISO 9001 & 14001 COMPANY

TENDER DOCUMENT

TENDER No: EPI/WRO/CON/681/0130

FOR

Work for Aluminum partition & False ceiling work at Pkg.-II at HAL, Nasik.

VOLUME – II

ADDITIONAL CONDITIONS OF CONTRACT (ACC), GENERAL CONTRACT CONDITIONS (GCC), TECHNICAL SPECIFICATION, APPROVED MAKES
# ADDITIONAL CONDITIONS OF CONTRACT (ACC)

### 1. GENERAL

a. The Additional Conditions shall be read in conjunction with General Conditions of Contract. Where the provision of these Additional Conditions is at variance with the provision of the General Conditions of Contract, the provisions of these Additional Conditions shall take precedence.

b. Party shall make arrangements for Gate Passes for labour, materials & Equipments and adhere to rules & regulations of HAL.

c. EPI reserves the right to split the work. Even after opening the tender EPI may enter into agreement with more than one party or may enter into agreement for part of the total work included in the Tender. In such an event, the contractor shall not be allowed to revise upward their quoted rates.

### 2. COMMENCEMENT AND COMPLETION OF PROJECT:

The contractual completion period for the entire work shall be 4 months from 10th day of issue of LOI.

### 3. TAXES AND DUTIES

In addition to GCC clause no 13, the relevant and required documents in respect of VAT assessment/ service tax assessment for EPI for availing exemption/deductions by EPI are to be submitted along with each RA bill failing which the VAT Tax levied/suffered by EPI is to be borne by the contractor and will be recovered from the forthcoming bills. The bills are to be submitted in the format required under the respective tax acts indicating input Tax.

### 4. VARIATION IN QUANTITY

The quantities of various items as entered in the “BILL OF QUANTITITIES” are indicative only and may vary depending upon the actual requirement. The Contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items specified in the Bill of Quantities. The quantities are likely to be reduced/increased/deleted in any extend.

### 5. FURNISHED OFFICE ACCOMMODATION & MOBILITY AND COMMUNICATION TO BE PROVIDED BY THE CONTRACTOR TO EPI

“DELETED”
6 **PAYMENT**

GCC Cl. No 37.4 revised as under.

All payment shall be released by NEFT/RTGS, All other terms &conditions remains same.

7 **BAR CHART**

The Contractor shall also furnish within 10 days from the date of letter of Intent, a MSP Bar Chart for completion of work within stipulated time. This will be duly got approved from EPI. This approved MSP Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.

8 **DEFECT LIABILITY PERIOD**

The Contractor shall be responsible for the rectification of defects in the works for a period of eighteen (18) months from the date of taking over of the works by the Owner/Client. Any defects discovered and brought to the notice of the Contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the Contractor fails to carry out these rectifications, the same may without prejudice to any other right or remedy available, be got rectified by EPI at the cost and expense of the Contractor.

9 **WORKS TO BE OPEN TO INSPECTION**

All works executed or under the course of execution in pursuance of this contract shall at all times be open to inspection and supervision of EPI. The work during its progress or after its completion may also be inspected, by Chief Technical Examiner of Government of India (CTE) and/or an inspecting authority of State Government of State in which work is executed and/or by third party checks by Owner/Clients. The compliance of observations/improvements as suggested by the inspecting officers of EPI/CTE/State authorities/Owners shall be obligatory on the part of the Contractor at the cost of Contractor.

Any recovery, penalty imposed by CTE due to non-performance, no compliance of agreed condition the same shall be recovered from RA Bill of contractor.

10 **MATERIALS PROCURED WITH THE ASSISTANCE OF EPI**

If any material for the execution of this contract is procured with the assistance of EPI either by issue from its stores or purchase made under orders or permits or licences obtained by EPI, the Contractor shall hold and use the said materials economically and solely for the purpose of this contract and shall not dispose them without the written permission of Engineer-In-Charge. The Contractor, if required by EPI, shall return all such surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination on whatsoever reason, on being paid or credited such price as EPI shall determine having due regard to
the conditions of materials.

**Material procured with assist for all the material deemed to be in scope of contractor shall be arranged by him, however any such material procure with assist of EPI, an handling cost 10% will be levied on actual procure cost.**

### 11 TECHNICAL STAFF FOR WORK

In addition to GCC Clause No 27.0
One number of Engineers & sufficient numbers of supervisor deployed on site as per instruction of EIC
In case the Contractor fails to employ the staff as aforesaid, he shall be liable to pay a reasonable amount not exceeding a sum of Rs. 25,000 (Rupees Twenty Five Thousand only) for each month of default in the case of each Engineer.

### 13 ARBITRATION

General Conditions of Contract (GCC) Sub Clause no.76.1 and 76.3 of Arbitration Clause no.76.0 are amended as given below. Sub Clause no.76.2 will remain the same.

**76.0 ARBITRATION**

76.1 Before resorting to arbitration as per the clause given below, the parties if they so agree may explore the possibility of conciliation as per the provisions of Part III of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015.

When such conciliation has failed, the parties shall adopt the following procedure for arbitration:

i) Except where otherwise provided for in the contract, any disputes and differences relating to the meaning of the Specifications, Design, Drawing and Instructions herein before mentioned and as to the quality of workmanship or materials used in the work or as to any other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the Contract, Designs, Drawings, Specifications, Estimates, Instructions, or these conditions or otherwise concerning the works of the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the Sole Arbitrator appointed by the Chairman & Managing Director (CMD) of Engineering Projects (India) Limited (EPI) or any other person discharging the functions of CMD of EPI. The person approached for appointment as Arbitrator shall disclose in writing circumstances, in terms of Sub-Section (1) of Section (12) of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015 as follows:

a) such as the existence either direct or indirect, of any past or present relationship with or interest in any of the parties or in relation to the subject-matter in dispute, whether
financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to his independence or impartiality; and

b) which are likely to affect his ability to devote sufficient time to the arbitration and in particular his ability to complete the entire arbitration within a period of twelve months. The Arbitrator shall be appointed within 30 days of the receipt of letter of invocation of arbitration duly satisfying the requirements of this clause.

ii) if the arbitrator so appointed resigns or is unable or unwilling to act due to any reason whatsoever, or dies, the Chairman & Managing Director aforesaid or in his absence the person discharging the duties of the CMD of EPI may appoint a new arbitrator in accordance with these terms and conditions of the contract, to act in his place and the new arbitrator so appointed may proceed from the stage at which it was left by his predecessor.

iii) It is a term of the contract that the party invoking the arbitration shall specify the dispute/differences or questions to be referred to the Arbitrator under this clause together with the amounts claimed in respect of each dispute.

iv) The Arbitrator may proceed with the arbitration ex-parte, if either party, in spite of a notice from the arbitrator, fails to take part in the proceedings.

v) The work under the contract shall continue as directed by the Engineer-In-Charge, during the arbitration proceedings.

vi) Unless otherwise agreed, the venue of arbitration proceedings shall be at the venue given in the ‘Memorandum’ to the ‘Form of Tender”.

vii) The award of the Arbitrator shall be final, conclusive and binding on both the parties.

viii) Subject to the aforesaid, the provisions of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015 or any statutory modifications or re-enactment thereof and the Rules made there under and for the time being in force shall apply to the arbitration proceedings and Arbitrator shall publish his Award accordingly.

76.3 JURISDICTION:
The courts in Delhi alone will have jurisdiction to deal with matters arising from the contract.
ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

INSTRUCTIONS TO TENDERERS
AND
GENERAL CONDITIONS OF CONTRACT
DECEMBER, 2007

VOLUME-I

Issued to : M/s. ________________________________

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ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

INDEX
## INDEX

### VOLUME - I

<table>
<thead>
<tr>
<th>S.No.</th>
<th>DESCRIPTION</th>
<th>CLAUSE No.</th>
<th>PAGE No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INSTRUCTIONS TO TENDERERS</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>LETTER OF UNDERTAKING</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>FORM OF TENDER</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>GENERAL CONDITIONS OF CONTRACT</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>4.1</td>
<td>General</td>
<td>1.0</td>
<td>12</td>
</tr>
<tr>
<td>4.2</td>
<td>Site Visit and Collecting Local Information</td>
<td>2.0</td>
<td>13</td>
</tr>
<tr>
<td>4.3</td>
<td>Scope of Work</td>
<td>3.0</td>
<td>16</td>
</tr>
<tr>
<td>4.4</td>
<td>Validity of Tender</td>
<td>4.0</td>
<td>16</td>
</tr>
<tr>
<td>4.5</td>
<td>Acceptance of Tender</td>
<td>5.0</td>
<td>16</td>
</tr>
<tr>
<td>4.6</td>
<td>Set of Tender Documents</td>
<td>6.0</td>
<td>17</td>
</tr>
<tr>
<td>4.7</td>
<td>Earnest Money Deposit</td>
<td>7.0</td>
<td>17</td>
</tr>
<tr>
<td>4.8</td>
<td>Mobilization Advance</td>
<td>8.0</td>
<td>18</td>
</tr>
<tr>
<td>4.9</td>
<td>Security Deposit cum Performance Guarantee</td>
<td>9.0</td>
<td>19</td>
</tr>
<tr>
<td>4.10</td>
<td>Retention Money</td>
<td>10.0</td>
<td>21</td>
</tr>
<tr>
<td>4.11</td>
<td>Mobilization of Men, Materials &amp; Machinery</td>
<td>11.0</td>
<td>21</td>
</tr>
<tr>
<td>4.12</td>
<td>Income Tax Deduction</td>
<td>12.0</td>
<td>22</td>
</tr>
<tr>
<td>4.13</td>
<td>Taxes and Duties</td>
<td>13.0</td>
<td>23</td>
</tr>
<tr>
<td>4.14</td>
<td>Royalty on Materials</td>
<td>14.0</td>
<td>24</td>
</tr>
<tr>
<td>4.15</td>
<td>Rates to be firm</td>
<td>15.0</td>
<td>24</td>
</tr>
<tr>
<td>4.16</td>
<td>Escalation / Price Variation</td>
<td>16.0</td>
<td>25</td>
</tr>
<tr>
<td>4.17</td>
<td>Insurance of Works</td>
<td>17.0</td>
<td>25</td>
</tr>
<tr>
<td>4.18</td>
<td>Insurance under Workmen’s Compensation Act</td>
<td>18.0</td>
<td>26</td>
</tr>
<tr>
<td>4.19</td>
<td>Third Party Insurance</td>
<td>19.0</td>
<td>26</td>
</tr>
<tr>
<td>4.20</td>
<td>Indemnity against Patent Rights</td>
<td>20.0</td>
<td>26</td>
</tr>
<tr>
<td>4.21</td>
<td>Labour Laws to be complied with by the Contractor</td>
<td>21.0</td>
<td>26</td>
</tr>
<tr>
<td>S.No.</td>
<td>DESCRIPTION</td>
<td>CLAUSE No.</td>
<td>PAGE No.</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>4.22</td>
<td>Labour Safety Provision</td>
<td>22.0</td>
<td>27</td>
</tr>
<tr>
<td>4.23</td>
<td>Observance of Labour Laws</td>
<td>23.0</td>
<td>27</td>
</tr>
<tr>
<td>4.24</td>
<td>Law Governing the Contract</td>
<td>24.0</td>
<td>27</td>
</tr>
<tr>
<td>4.25</td>
<td>Laws, Bye-Laws relating to the work</td>
<td>25.0</td>
<td>27</td>
</tr>
<tr>
<td>4.26</td>
<td>Employment of Personnel</td>
<td>26.0</td>
<td>28</td>
</tr>
<tr>
<td>4.27</td>
<td>Technical Staff for work</td>
<td>27.0</td>
<td>28</td>
</tr>
<tr>
<td>4.28</td>
<td>Land for Labour Huts / Site Office &amp; Storage Accommodation</td>
<td>28.0</td>
<td>29</td>
</tr>
<tr>
<td>4.29</td>
<td>Watch &amp; Ward and Lighting</td>
<td>29.0</td>
<td>30</td>
</tr>
<tr>
<td>4.30</td>
<td>Health and Sanitary Arrangements</td>
<td>30.0</td>
<td>30</td>
</tr>
<tr>
<td>4.31</td>
<td>Workmen's Compensation Act.</td>
<td>31.0</td>
<td>30</td>
</tr>
<tr>
<td>4.32</td>
<td>Minimum Wages Act.</td>
<td>32.0</td>
<td>30</td>
</tr>
<tr>
<td>4.33</td>
<td>Labour Records</td>
<td>33.0</td>
<td>30</td>
</tr>
<tr>
<td>4.34</td>
<td>Release of Security Deposit after Labour Clearance</td>
<td>34.0</td>
<td>31</td>
</tr>
<tr>
<td>4.35</td>
<td>Secured Advance against Non-Perishable Materials</td>
<td>35.0</td>
<td>31</td>
</tr>
<tr>
<td>4.36</td>
<td>Measurements of works</td>
<td>36.0</td>
<td>31</td>
</tr>
<tr>
<td>4.37</td>
<td>Payments</td>
<td>37.0</td>
<td>32</td>
</tr>
<tr>
<td>4.38</td>
<td>Work on Sunday, Holidays and During Night</td>
<td>38.0</td>
<td>33</td>
</tr>
<tr>
<td>4.39</td>
<td>No Idle Charges towards labour or P&amp;M etc.</td>
<td>39.0</td>
<td>33</td>
</tr>
<tr>
<td>4.40</td>
<td>Work to be executed in accordance with Specifications, Drawings, Orders etc.</td>
<td>40.0</td>
<td>33</td>
</tr>
<tr>
<td>4.41</td>
<td>Direction for works</td>
<td>41.0</td>
<td>34</td>
</tr>
<tr>
<td>4.42</td>
<td>Order of Precedence of Documents</td>
<td>42.0</td>
<td>34</td>
</tr>
<tr>
<td>4.43</td>
<td>Time Schedule and Progress</td>
<td>43.0</td>
<td>35</td>
</tr>
<tr>
<td>4.44</td>
<td>Water and Electricity</td>
<td>44.0</td>
<td>36</td>
</tr>
<tr>
<td>4.45</td>
<td>Materials to be provided by the Contractor</td>
<td>45.0</td>
<td>36</td>
</tr>
<tr>
<td>4.46</td>
<td>Schedule of Quantities / Bill of Quantities</td>
<td>46.0</td>
<td>37</td>
</tr>
<tr>
<td>4.47</td>
<td>Anti-termite Treatment and Waterproof Treatment</td>
<td>47.0</td>
<td>38</td>
</tr>
<tr>
<td>S.No.</td>
<td>DESCRIPTION</td>
<td>CLAUSE No.</td>
<td>PAGE No.</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>4.48</td>
<td>India Standards</td>
<td>48.0</td>
<td>39</td>
</tr>
<tr>
<td>4.49</td>
<td>Centering and Shuttering</td>
<td>49.0</td>
<td>38</td>
</tr>
<tr>
<td>4.50</td>
<td>Proprietary Materials</td>
<td>50.0</td>
<td>39</td>
</tr>
<tr>
<td>4.51</td>
<td>Records of consumption of Cement and Steel</td>
<td>51.0</td>
<td>40</td>
</tr>
<tr>
<td>4.52</td>
<td>Materials and Samples</td>
<td>52.0</td>
<td>40</td>
</tr>
<tr>
<td>4.53</td>
<td>Tests and Inspection</td>
<td>53.0</td>
<td>42</td>
</tr>
<tr>
<td>4.54</td>
<td>Borrow Areas</td>
<td>54.0</td>
<td>42</td>
</tr>
<tr>
<td>4.55</td>
<td>Bitumen Work</td>
<td>55.0</td>
<td>43</td>
</tr>
<tr>
<td>4.56</td>
<td>Care of Works</td>
<td>56.0</td>
<td>43</td>
</tr>
<tr>
<td>4.57</td>
<td>Work in Monsoon and Dewatering</td>
<td>57.0</td>
<td>43</td>
</tr>
<tr>
<td>4.58</td>
<td>No Compensation for Cancellation / Reduction of Works</td>
<td>58.0</td>
<td>43</td>
</tr>
<tr>
<td>4.59</td>
<td>Restriction of Sub-letting</td>
<td>59.0</td>
<td>44</td>
</tr>
<tr>
<td>4.60</td>
<td>Prohibition of Un-authorized Construction &amp; Occupation</td>
<td>60.0</td>
<td>44</td>
</tr>
<tr>
<td>4.61</td>
<td>Co-ordination with other Agencies</td>
<td>61.0</td>
<td>44</td>
</tr>
<tr>
<td>4.62</td>
<td>Setting out of the works</td>
<td>62.0</td>
<td>44</td>
</tr>
<tr>
<td>4.63</td>
<td>Notice Before Covering up the work</td>
<td>63.0</td>
<td>45</td>
</tr>
<tr>
<td>4.64</td>
<td>Site Clearance</td>
<td>64.0</td>
<td>45</td>
</tr>
<tr>
<td>4.65</td>
<td>Valuable Articles found at site</td>
<td>65.0</td>
<td>45</td>
</tr>
<tr>
<td>4.66</td>
<td>Materials obtained from Dismantlement to be Owners property</td>
<td>66.0</td>
<td>45</td>
</tr>
<tr>
<td>4.67</td>
<td>Set Off of Contractor's Liabilities</td>
<td>67.0</td>
<td>45</td>
</tr>
<tr>
<td>4.68</td>
<td>Materials procured with the Assistance of EPI</td>
<td>68.0</td>
<td>46</td>
</tr>
<tr>
<td>4.69</td>
<td>Alteration in Specification, Design and Drawing</td>
<td>69.0</td>
<td>46</td>
</tr>
<tr>
<td>4.70</td>
<td>Action and Compensation payable in case of Bad work</td>
<td>70.0</td>
<td>49</td>
</tr>
<tr>
<td>4.71</td>
<td>Possession prior to Completion</td>
<td>71.0</td>
<td>50</td>
</tr>
<tr>
<td>4.72</td>
<td>Compensation for Delay and Remedies</td>
<td>72.0</td>
<td>50</td>
</tr>
<tr>
<td>4.73</td>
<td>Withholding and Lien of payments</td>
<td>73.0</td>
<td>56</td>
</tr>
<tr>
<td>S.No.</td>
<td>DESCRIPTION</td>
<td>CLAUSE No.</td>
<td>PAGE No.</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>4.74</td>
<td>Defect Liability Period</td>
<td>74.0</td>
<td>58</td>
</tr>
<tr>
<td>4.75</td>
<td>Force Majeure</td>
<td>75.0</td>
<td>58</td>
</tr>
<tr>
<td>4.76</td>
<td>Arbitration and Jurisdiction</td>
<td>76.0</td>
<td>58</td>
</tr>
<tr>
<td>4.77</td>
<td>Suspension of Works</td>
<td>77.0</td>
<td>60</td>
</tr>
<tr>
<td>4.78</td>
<td>Termination of Contract on Death of Contractor</td>
<td>78.0</td>
<td>60</td>
</tr>
<tr>
<td>4.79</td>
<td>Clarification after Tender Submission</td>
<td>79.0</td>
<td>61</td>
</tr>
<tr>
<td>4.80</td>
<td>Addenda / Corrigenda</td>
<td>80.0</td>
<td>61</td>
</tr>
<tr>
<td>4.81</td>
<td>Quality Assurance Programme</td>
<td>81.0</td>
<td>61</td>
</tr>
<tr>
<td>4.82</td>
<td>Approval of Temporary / Enabling Works</td>
<td>82.0</td>
<td>62</td>
</tr>
<tr>
<td>4.83</td>
<td>Contract Co-ordination Procedures, Coordination Meeting and Progress Reporting</td>
<td>83.0</td>
<td>62</td>
</tr>
<tr>
<td>4.84</td>
<td>Contract Agreement</td>
<td>84.0</td>
<td>62</td>
</tr>
<tr>
<td>4.85</td>
<td>Manner of Execution of Agreement</td>
<td>85.0</td>
<td>63</td>
</tr>
<tr>
<td>4.86</td>
<td>Purchase Preference to CPSEs</td>
<td>86.0</td>
<td>63</td>
</tr>
<tr>
<td>4.87</td>
<td>Change of Firms's constitution</td>
<td>87.0</td>
<td>63</td>
</tr>
<tr>
<td>4.88</td>
<td>Compliance with ISO Procedures</td>
<td>88.0</td>
<td>64</td>
</tr>
<tr>
<td>5</td>
<td>LABOUR SAFETY PROVISIONS</td>
<td>-</td>
<td>65</td>
</tr>
<tr>
<td>6</td>
<td>MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENT FOR WORKERS.</td>
<td>-</td>
<td>70</td>
</tr>
<tr>
<td>7</td>
<td>CONTRACTOR'S LABOUR REGULATION</td>
<td>-</td>
<td>77</td>
</tr>
<tr>
<td>8</td>
<td>PRESCRIBED PROFORMAS</td>
<td>-</td>
<td>83</td>
</tr>
<tr>
<td>(a)</td>
<td>Application For Extension Of Time I,II,III</td>
<td>-</td>
<td>96</td>
</tr>
<tr>
<td>(b)</td>
<td>Earnest Money Deposit Bank Guarantee</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>(c)</td>
<td>Security Deposit Cum Performance Bank Guarantee</td>
<td>-</td>
<td>101</td>
</tr>
<tr>
<td>(d)</td>
<td>Advance Bank Guarantee</td>
<td>-</td>
<td>104</td>
</tr>
<tr>
<td>(e)</td>
<td>Performance Bank Guarantee</td>
<td>-</td>
<td>107</td>
</tr>
<tr>
<td>(f)</td>
<td>Proforma For Indemnity Bond For Secured Advance</td>
<td>-</td>
<td>110</td>
</tr>
<tr>
<td>(g)</td>
<td>Guarantee Bonds For Anti-Termite And Waterproofing Treatment</td>
<td>-</td>
<td>113</td>
</tr>
<tr>
<td>(h)</td>
<td>Agreement Form</td>
<td></td>
<td>116</td>
</tr>
<tr>
<td>-----</td>
<td>---------------</td>
<td>---</td>
<td>-----</td>
</tr>
<tr>
<td>9</td>
<td>QUALITY CONTROL FORMATS AND CHECKLISTS</td>
<td></td>
<td>119</td>
</tr>
</tbody>
</table>
ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

INSTRUCTIONS TO TENDERERS
1.0 MODE OF SUBMISSION

The Tender is to be submitted in two separate sealed covers marked as under:

**ENVELOPE-1 :-**

This ENVELOPE shall contain the following:

i) Earnest Money Deposit as per clause 2.0 of ‘Instructions to Tenderers’ (ITT).
ii) Letter of Undertaking for un-conditional acceptance of the tender conditions as per proforma given in ITT.
iii) Pre-Qualification Documents and Credentials as per clause 19.0 of ITT.
iv) Volume-I (ITT, General Conditions of Contract), Volume-II (Notice Inviting Tender, Additional Conditions of Contract, Specifications, Drawings) and Corrigendum/Addendum, if any, duly filled in, signed and stamped on each page by tenderer. Cutting or over-writing, if any, shall be signed and stamped by the person signing the Tender. All pro-forma forming part of Tender Documents shall be filled in, signed and stamped by the tenderer.
v) Copy of power of attorney / partnership deed, duly attested by Notary Public authorizing the person who signs the Tender.
vi) Any other information as required to be submitted along-with the Tender.

This envelope shall be marked as:

**ENVELOPE-1 “TECHNO-COMMERCIAL BID” FOR (Name of work as mentioned in “Notice Inviting Tender”)**

NIT No. :  
DUE ON :  
FROM : (Name of the Contractor)

**ENVELOPE – 2 :-**

This ENVELOPE shall contain only the Volume-III comprising of PRICE-BID.

This envelope shall be marked as:

**ENVELOPE-2 : ‘PRICE-BID’ FOR (Name of Work as mentioned in “Notice Inviting Tender”)**

NIT No. :  
DUE ON :  
FROM : (Name of the Contractor)
Both the envelopes / packets shall be individually sealed and kept in an outer envelope marked as:

TENDER FOR (Name of Work as mentioned in “Notice Inviting Tender”)  
NIT No. : __________________________________  
DUE ON : __________________________________  
FROM : (Name of the Contractor)

The outer envelope shall be duly sealed and shall be delivered at place of submission of Tender by the date and time fixed for receipt of Tender as mentioned in “Notice Inviting Tender”. The Tenders received after the date and time of Tender receipt shall not be considered and shall be returned to the tenderer unopened. EPI shall not be responsible for any postal or other delays, whatsoever and tenderer should take care to ensure the submission of Tender at place of receipt of Tender by due date and time fixed for Tender receipt. All the envelopes shall be addressed to the authority who has invited the Tender as mentioned in “Notice Inviting Tender”.

1.1 First the Envelope-1 of the tenderer shall be opened. Tenderers who unconditionally accept the tender conditions, deposit the required Earnest Money and whose Techno-Commercial Bid along with PQ Documents is found suitable shall be considered for the opening of their Price Bid and Envelope-2 of such tenderers shall only be opened. The Tenders not accompanied by requisite Earnest Money and / or not conveying un-conditional acceptance of tender conditions or whose Techno-Commercial Bid and PQ Documents are not found suitable, shall be rejected and such tenderer shall not be allowed to attend Price Bid opening i.e. opening of Envelope-2.

1.2 Once the tenderer has given an unconditional acceptance to the tender conditions in its entirety, he is not permitted to put any remark(s) / condition(s) (except unconditional rebate on price, if any) in / along with the ‘Price-Bid’ / Tender.

1.3 In case the condition 1.2 mentioned above is found violated at any time after opening of Tender, the Tender shall be summarily rejected and EPI shall, without prejudice to any other right or remedy, be at liberty to forfeit the full said Earnest Money absolutely.

2.0 EARNEST MONEY DEPOSIT

Earnest Money Deposit of amount as mentioned in “NIT/ITT/Memorandum” to “Form of Tender” required to be submitted alongwith the Tender shall be in the form of Demand Draft payable at place as mentioned in “NIT/ITT” in favour of EPI Limited from any Nationalized / Scheduled Bank or in the form of Bank Guarantee from any Nationalized / Scheduled Bank in enclosed format. The EMD Bank Guarantee shall be valid for a minimum period of 150 (One Hundred Fifty) days from last day of submission of Tender. The EMD shall be governed by Clause 7.0 of General Conditions of Contract.

3.0 EPI reserves the right to reject any or all the Tenders in part or full without assigning any reason whatsoever thereof. EPI does not bind themselves to
accept the lowest Tender. EPI reserves the right to award the work to a single party or to split the work amongst two or more parties as deemed necessary without assigning any reason thereof. The Contractor is bound to accept the portion of work as offered by EPI after split up at the quoted / negotiated rates.

4.1 FOR ITEM RATE TENDERS

4.1.1 The tenderers should quote the rates for items tendered by them in figures as well as in words and the amounts in figures only. The amount for each item should be worked out and the requisite totals and page totals given.

4.1.2 All corrections/cuttings should be signed by the tenderer. Each page of the Tender should be signed by the tenderer. In the event of discrepancy between rate in figures and words the rate quoted in words shall be treated as correct. In case there is discrepancy between rate and amount worked out, the rate quoted shall be taken as correct and not the amount.

4.1.3 Price shall be entered against each item in Bill of Quantities where quantities or LS (lump-sum) has been mentioned. The cost of item against which the Contractor has failed to enter a rate or price shall be deemed to be covered by rates and prices of other items in the Bill of Quantities and no payment shall be made for the quantities executed for items against which rate has not been quoted by Contractor. No rate is to be quoted against items for which no quantity is given. However, the Contractor has to quote rate against “LS” items.

4.2 FOR PERCENTAGE RATE TENDERS

4.2.1 In case of Percentage Rate Tenders, tenderer shall fill up in the Schedule / Bill of Quantities, percentage Below/Above/Par (in figures as well as in words) to total estimated cost given in Schedule / Bill of Quantities, he will be willing to execute the work. The tenderer should quote a unique single percentage plus / minus over the total estimated amount given in Schedule / Bill of Quantities. In case more than one schedule is given, stipulating quoting of separate percentages (plus or minus) over the estimated amount of each schedule, the tenderer can quote separate percentages for each such schedule. Under no circumstances, tenderer is allowed to quote separate percentages for individual items, trades or group of items. In case tenderer quotes separate percentages for individual items, trades or group of items instead of to the total amount of schedule(s), the Tender shall be rejected and earnest money of the tenderer shall be forfeited in totality.

4.2.2 In case of Percentage Rate Tenders, the tenderer shall also work out the total amount of his offer after adding percentage (plus or minus) over the total schedule amount and the same should be written in figures as well as in words in such a way that no interpolation is possible.

4.2.3 In case of Percentage Rate Tenders, only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the tenderer in Percentage Rate Tender shall be accurately filled in figures and words. All corrections/cuttings should be signed by the tenderer. Each page of the Tender should be signed by the tenderer. In the event of discrepancy between percentage rate in figures and words, the percentage rate
quoted in words shall be treated as correct. In case there is discrepancy between percentage rate and amount worked out the percentage rate quoted shall be taken as correct and not the amount. For any other discrepancy, the decision of Tender Scrutiny Committee of EPI shall be final & binding on the tenderer including rejection of Tender and forfeiture of EMD.

5.0 The Tenders shall be strictly as per the conditions of contract. Tenders with any additional condition(s)/modification(s) shall be rejected.

6.0 The witnesses to the Tender / Contract Agreement shall be other than the tenderer / tenderers competing for this work and must indicate full name, address, status/occupation with dated signatures.

7.0 The acceptance of Tender will rest with EPI. Tenders in which any of the prescribed conditions are not fulfilled or found incomplete in any respect are liable to be rejected.

8.0 Canvassing whether directly or indirectly in connection with Tenders is strictly prohibited and the Tenders submitted by the Contractors who resort to canvassing will be liable to rejection.

9.0 On acceptance of Tender, the name of the accredited representative(s) of the Contractor who would be responsible for taking instructions from Engineer-In-Charge or its authorised representative shall be intimated by the Contractor with in 07 days of issue date of telegram / letter / telex / fax of Intent by EPI.

10.0 The tenderer shall not be permitted to Tender for works if his near relative is posted as an Assistant Manager or any higher ranks in the concerned Regional Office of EPI. The Contractor shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any of the officers in EPI. Any breach of this condition by the tenderer would render him liable to the withdrawal of the work awarded to him and forfeiture of Earnest Money and Security Deposit. This may also debar the Contractor from tendering for future works under EPI.

11.0 No employee of EPI of the rank of Assistant Manager and above is allowed to work as a Contractor or as an employee of a Contractor having interest in EPI for a period of two years after his retirement/relief from the service of EPI, without the prior permission of EPI in writing. This contract is liable to be cancelled if either the Contractor or any of his employee is found at any time to be such a person who had not obtained the permission of EPI as aforesaid before submission of the Tender or engagement in the Contractor’s service.

12.0 The time of completion of the entire work, as contained in contract shall be as mentioned in “Memorandum” to “Form of Tender”, which shall be reckoned from the 10th day from issue of the Letter / Telex / Telegram / Fax of Intent by the EPI.

13.0 The Tender award, execution and completion of work shall be governed by Tender Documents consisting of (but not limited to) Letter of Intent / Letter of work Order, Bill of Quantities, Additional Conditions of Contract, General Conditions of Contract, Specifications, Drawings, etc. The tenderers shall be
deemed to have gone through the various conditions and clauses of the Tender and visited the Site and satisfied itself with Site conditions including sub-soil water conditions, topography of the land, drainage and accessibility etc. or any other condition which in the opinion of Contractor will affect his price / rates before quoting their rates. No claim whatsoever against the foregoing shall be entertained by EPI.

14.0 The Drawings given with the Tender Documents are TENDER DRAWINGS and are indicative only.

15.0 Transfer of bid documents purchased by one intending bidder to another is not permissible.

16.0 Tenders must be duly signed with date and sealed. An attested copy of power of attorney/affidavit/Board Resolution executed as under shall accompany the ‘Tender Documents’.
   a) In case of Sole Proprietorship, an affidavit of Sole Proprietorship and if the Tender is signed by any other person Power of Attorney by the Sole Proprietor in favour of signatory.
   b) In case of Partnership firm, if Tender is not signed by all the partners, Power of Attorney in favour of the Partner/person signing the tender/documents by all the partners authorizing him to sign the tender/documents.
   c) In case of Company, copy of the Board Resolution authorizing the signatory to sign on behalf of the Company.

17.0 Tenders with following discrepancies are liable for rejection:
   a) Tenders with over-written or erased rates, percentages, amounts or rates, percentages not written in both figures and words.
   b) Tender that is incomplete, ambiguous, and not accompanied by the documents asked for or submitted without EMD or with inadequate EMD.
   c) Tender received after specified date/time whether due to postal or other delays.
   d) Tender in respect of which canvassing in any form is resorted to by the tenderer whatsoever.
   e) If the tenderer deliberately gives wrong information in his tender or resorts to unfair methods in creating circumstances for the acceptance of his tender, EPI reserves the right to reject such tender at any stage.

18.0 Submission of a tender by the tenderer implies that he has read the complete contract documents and has made himself aware of the scope, terms & conditions and specifications of the work to be done and of conditions at which stores, tools, plant, etc. will be issued to him by EPI (if any), local conditions and
political situations and other factors having bearing on the execution of the works. No claim of Contractor whatsoever, within the purview of this clause, shall be entertained at any stage of the project.

19.0 Tenderer shall submit the following documents along with their Tenders in the first envelope (Techno-Commercial Bid):

- a) List of works executed during the last 5 years indicating name of the Client, value, date of start and completion.
- b) List of works under execution indicating name of the Client, Total Contract Value, Value of balance work in hand, date of start and completion.
- c) Details of similar works executed.
- d) Audited balance sheets and profit and loss accounts alongwith schedules for the last 3 years.
- e) Copy of latest income-tax returns filed along with PAN.
- f) Details of manpower available.
- g) Details of equipments, tools and plant available.
- h) Credentials and completion certificates.
- i) Registration Certificate/Memorandum and Articles of Association/Partnership Deed/Affidavit.
- j) Copy of Provident Fund Number allotted by PF authorities.
- k) Copy of letters of registration with various authorities like CPWD, State PWD, MES and Public Sector Undertakings, etc.
- l) Latest Solvency certificate from Nationalised/Scheduled Bank.
- m) Latest Sales Tax Registration and Clearance Certificate.
- n) Any other document as stipulated above and in “Tender Documents’

20. Purchase Preference may be granted to the Central Public Sector Enterprises as per the applicable guidelines in force in this regard issued by the Government of India.
LETTER OF UNDERTAKING

(TO BE ENCLOSED IN ENVELOPE-1 ALONGWITH EMD)

ENGINEERING PROJECTS (INDIA) LIMITED
(Address of submission as mentioned in “Notice Inviting Tender”)

REF. : TENDER FOR (Name of Work as mentioned in “Notice Inviting Tender”)
NIT No. : _________________________________

Sir,

UNDERTAKING FOR ACCEPTANCE OF TENDER CONDITIONS

1. The Tender Documents for the work as mentioned in “Memorandum” to “Form of Tender” have been issued to me / us by ENGINEERING PROJECTS (INDIA) LIMITED and I / We hereby unconditionally accept the tender conditions and Tender Documents in its entirety for the above work.

2. The contents of clause 1.2 and 1.3 of the Tender Documents (Instructions to Tenderers) have been noted wherein it is clarified that after unconditionally accepting the tender conditions in its entirety, it is not permissible to put any remark(s) / condition(s) (except unconditional rebate on price, if any) in the ‘Price-Bid’ enclosed in “Envelope-2” and the same has been followed in the present case. In case this provision of the Tender is found violated at any time after opening “Envelope-2”, I / We agree that my/our tender shall be summarily rejected and EPI shall, without prejudice to any other right or remedy be at liberty to forfeit the full said Earnest Money absolutely.

3. The required Earnest Money for this work is enclosed herewith.

Yours faithfully,

(Signature of the Tenderer)

Seal of Tenderer

Dated : ________________
FORM OF TENDER

To,

Engineering Projects (India) Limited
(Address of submission as mentioned in “Notice Inviting Tender”)

REF. : TENDER FOR (Name of Work as mentioned in “Notice Inviting Tender”)

NIT No. : ________________________________

1. I/We hereby tender for execution of work as mentioned in “Memorandum” to this “Form of Tender” as per Tender Documents within the time schedule of completion of work as per separately signed and accepted rates in the Bill of Quantities quoted by me / us for the whole work in accordance with the Notice Inviting Tender, Conditions of Contract, Specifications of materials and workmanship, Bill of Quantities Drawings, Time Schedule for completion of jobs, and other documents and papers, all as detailed in Tender Documents.

2. It is agreed that the time stipulated for jobs and completion of works in all respects and in different stages mentioned in the “Time Schedule for completion of jobs” and signed and accepted by me/us is the essence of the contract. I/We agree that in case of failure on my/our part to strictly observe the time of completion mentioned for jobs and the final completion of works in all respects according to the schedule set out in the said “Time Schedule for completion of jobs” and stipulations contained in the contract, the recovery shall be made from me/us as specified therein. In exceptional circumstances extension of time which shall always be in writing may, however be granted by EPI at its entire discretion for some items, and I/We agree that such extension of time will not be counted for the final completion of work as stipulated in the said “Time schedule of completion of jobs”.

3. I/We agree to pay the Earnest Money, Security Deposit cum Performance Guarantee, Retention Money and accept the terms and conditions as laid down in the “Memorandum” to this “Form of Tender”.

4. Should this Tender be accepted, I/We agree to abide by and fulfill all terms and conditions referred to above and as contained in Tender Documents elsewhere and in default thereof, allow EPI to forfeit and pay EPI, or its successors or its authorized nominees such sums of money as are stipulated in the Tender Documents.

5. I/We hereby pay the earnest money amount as mentioned in the “Memorandum” to this “Form of Tender” in favour of Engineering Projects (India) Limited payable at place as mentioned in the “NIT/ITT”.

Signature of Contractor     EPI

Page 8
6. If I/we fail to commence the work within 10 days of the date of issue of Letter of Intent and / or I/We fail to sign the agreement as per Clause 84 of General Conditions of Contract and/or I/We fail to submit Security Deposit cum Performance Guarantee as per Clause 9.0 & 9.1 of General Conditions of Contract, I/We agree that EPI shall, without prejudice to any other right or remedy, be at liberty to cancel the Letter of Intent and to forfeit the said earnest money as specified above.

7. I/We are also enclosing herewith the Letter of Undertaking on the prescribed pro-forma as referred to in condition of NIT.

Date the __________________________ day of _______________________________

SIGNATURE OF TENDERER

NAME (CAPITAL LETTERS) : _________________________________________

OCCUPATION _________________________________________

ADDRESS _______________________________________

_______________________________________

SEAL OF TENDERER
MEMORANDUM

(ENCLOSURE TO FORM OF TENDER)

REF. : TENDER FOR (Name of Work as mentioned in “Notice Inviting Tender”)

NIT No. : ______________________________

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description</th>
<th>Cl. No.</th>
<th>Values / Description to be applicable for relevant clause(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Name of work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii)</td>
<td>Owner/Client / Employer</td>
<td>NIT</td>
<td>Rs.________ (Rupees____________________ only).</td>
</tr>
<tr>
<td>iii)</td>
<td>Type of Tender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv)</td>
<td>Earnest Money Deposit</td>
<td>NIT</td>
<td>Rs.________ (Rupees____________________ only).</td>
</tr>
<tr>
<td>v)</td>
<td>Estimated Cost</td>
<td>NIT</td>
<td>Total work to be completed in ________________________ ______ % (______ Percent) of Contract Value.</td>
</tr>
<tr>
<td>vi)</td>
<td>Time for completion of work</td>
<td>NIT</td>
<td></td>
</tr>
<tr>
<td>vii)</td>
<td>Mobilization Advance</td>
<td>8.0</td>
<td>____ % (__________) Percent) of Contract Value.</td>
</tr>
<tr>
<td>viii)</td>
<td>Interest Rate on Mobilization Advance</td>
<td>8.0</td>
<td>Simple Interest Rate of <strong><strong>%(</strong></strong>___ percent only) per annum.</td>
</tr>
<tr>
<td>ix)</td>
<td>Number of Instalments for recovery of Mobilisation Advance</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>x)</td>
<td>Schedule of Rates applicable</td>
<td>69.0</td>
<td>Civil Works : ___________________________________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sanitary Works : _________________________________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Electrical Works : _______________________________________</td>
</tr>
<tr>
<td>xi)</td>
<td>Validity of Tender</td>
<td>4.0</td>
<td>90 (Ninety) Days</td>
</tr>
<tr>
<td>xii)</td>
<td>Security Deposit cum Performance Guarantee</td>
<td>9.0</td>
<td>5.00% (Five Percent only) of Contract Value within 10 days from the date of issue of telegram / letter / telex / FAX of Intent of acceptance of Tender.</td>
</tr>
</tbody>
</table>

Signature of Contractor            EPI
xiii) Retention Money 10.0 5.00% (Five percent only) of the contract amount, which shall be deducted in the manner set out in this contract.

xiv) Time allowed for starting the work 43.0 The date of start of contract shall be reckoned 10 days from the date of issue of telegram / letter / telex / FAX of Intent of acceptance of Tender.

xv) Defect Liability Period 74.0 12 (Twelve) Months from the date of taking over of works.

xvi) Arbitration 76 Arbitration shall be as per provisions of Clause no.76 of GCC. The Venue of Arbitration shall be ………………………………

xvii) Jurisdiction 76.3 Courts in -------------------------------

SIGNATURE OF TENDERER

NAME (CAPITAL LETTERS) : _________________________________________

OCCUPATION  _________________________________________

ADDRESS                         _________________________________________

________________________________________________________________________

SEAL OF TENDERER
ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

GENERAL CONDITIONS OF CONTRACT
AND
LABOUR SAFETY PROVISIONS, MODEL RULES
CONTRACTOR’S LABOUR REGULATIONS
& PRESCRIBED PROFORMAS
GENERAL CONDITIONS OF CONTRACT

1.0 GENERAL

The Contract means the documents forming the Tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of EPI and the Contractor, together with the documents referred to therein including these conditions, the Specifications, Designs, Drawings and Instructions issued from time to time by the Engineer-In-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

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

1.2 Engineering Projects (India) Limited, hereinafter called 'EPI' proposes to get the works executed as mentioned in the Contract on behalf of Owner/Client.

1.3 The work will be executed as per Drawings “GOOD FOR CONSTRUCTION” to be released by EPI unless otherwise specified elsewhere in the Tender Documents.

1.4 OTHER DEFINITIONS

a) ENGINEER-IN-CHARGE means the Regional Office In-Charge of EPI himself or an engineer of EPI nominated by the Regional Office In-Charge for supervision and/or project management of the project from time to time.

b) WORKS OR WORK The expression works or work shall unless there be something either in the subject or context repugnant to such construction be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

c) CONTRACTOR The Contractor shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

d) DRAWINGS mean the Drawings referred to in the Bill of Quantities, specifications and any modifications of such Drawings or such other Drawings as may from time to time be approved or furnished by EPI.

e) SITE means the lands and other places on, under, in or through which the works are to be executed or carried out and any other lands or places provided by EPI or used for the purpose of the agreement.

f) APPROVAL means approved in writing including subsequent written confirmation of previous verbal approval.
g) WRITING means any manuscript typed, written or printed statement under or over signature and/or seal as the case may be.

h) MONTH means English Calendar month. ‘Day’ means a Calendar day of 24 Hrs each.

i) CONTRACT VALUE means the sum for which the Tender is accepted as per the Agreement/ Letter of Acceptance/ Letter of Intent.

j) LANGUAGE: All documents and correspondence in respect of this contract shall be in English Language. In case of any discrepancy between the English version and the Hindi version of these documents, the provisions contained in the English version shall be applicable.

k) BILL OF QUANTITIES or SCHEDULE OF QUANTITIES means the priced and completed Bill of Quantities or Schedule of Quantities forming part of the Tender.

l) OWNER/ CLIENT / EMPLOYER means the Government, Organization, Authority, Company, Ministry, Department, Society, Cooperative etc. who has awarded the work/ project to EPI and/ or appointed EPI as Implementing / Executing Agency/ Project Manager and/ or for whom EPI is acting as an agent and on whose behalf EPI is entering into the contract and getting the work executed.

m) IMPLEMENTING/ EXECUTING AGENCY means EPI

n) TENDER means the Contractor's priced offer to EPI for the execution and completion of the work and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Intent or Award letter. The word TENDER is synonymous with Bid and the word TENDER DOCUMENTS with “Bidding Documents” or “offer documents”.

o) The headings in the clauses/ conditions of Tender Documents are for convenience only and shall not be used for interpretation of the clause/ condition.

p) Words imparting the singular meaning only also include the plurals and vice versa where the context requires. Words imparting persons or parties shall include firms and corporations and organizations having legal capacities.

q) APPROVED INSURANCE COMPANY means any Insurance Company registered with ‘Insurance Regulatory & Development Authority’ (IRDA) of India and meeting insurance needs of the projects of EPI.

2.0 SITE VISIT AND COLLECTING LOCAL INFORMATION

Before tendering, the tenderer is advised to visit the Site, its surroundings to assess and satisfy themselves about the local conditions such as the working and other constraints at Site, approach roads to the Site, availability of water & power supply, applicability of taxes, duties and levies etc., nature of ground, soil and sub-soil condition, underground water table level, accommodations they may
require etc., river regime, river water levels, other details of river, streams & any other relevant information required by them to execute the complete scope of work. The tenderer may obtain all necessary information as to risks, weather conditions, contingencies & other circumstances (insurgencies etc.) which may influence or affect their tender prices. Tenderer shall be deemed to have considered Site conditions whether he has inspected it or not and to have satisfied himself in all respects before quoting his rates and no claim or extra charges whatsoever in this regard shall be entertained / payable by EPI at a later date.

2.1 ACCESS BY ROAD

Contractor, if necessary, shall build temporary access roads to the actual Site of construction for the works at his own cost to make the Site accessible. The Contractor shall maintain the same in motorable condition at all times as directed by Engineer-In-Charge at his own cost. The Contractor shall be required to permit the use of any roads so constructed by him for vehicles of EPI or any other agencies/ Contractors who may be engaged on the project Site, free of cost.

Non-availability of access roads or approach to Site, for the use of the Contractor shall in no case condone any delay in the execution of work nor be the cause for any claim for compensation.

2.2 HANDING OVER & CLEARING OF SITE

2.2.1 The Contractor should note that area for construction may be made available in phases as per availability and in conjunction with pace of actual progress of work at Site. The work may be required to be carried out in constrained situations. The work is to be carried out in such a way that the traffic, people movement, if any, is kept operative and nothing extra shall be payable to the Contractor due to this phasing / sequencing of the work. The Contractor is required to arrange the resources to complete the entire project within total stipulated time. Traffic diversion, if required, is to be done and maintained as per specification by the Contractor at his own cost and the Contractor shall not be entitled for any extra payment, whatsoever, in this regard.

2.2.2 Efforts will be made by EPI to handover the Site to the Contractor free of encumbrances. However, in case of any delay in handing over of the Site to the Contractor, EPI shall only consider suitable extension of time for the execution of the work. It should be clearly understood that EPI shall not consider any revision in contract price or any other compensation whatsoever viz. towards idleness of Contractor's labour, equipment etc.

2.2.3 The Contractor shall be responsible for removal of all over-ground and underground structures (permanent, semi-permanent and temporary) and constructions from the Site. The cost to be incurred in this regard shall be deemed to be included in the quoted rates of Bill of Quantities items and Contractor shall not be entitled for any extra payment whatsoever, in this regard. Old structures on the proposed Site, if required, shall be demolished by the Contractor properly. The useful material obtained from demolition of structures &
services shall be the property of the Owner/EPI and these materials shall be stacked in workmanship like manner at the place specified by the Engineer-in-Charge.

2.2.4 If required, the Contractor has to do site clearance, enabling work, barricading, diversion of Roads, shifting/realignment of existing utility services, drains, nallahs etc. at his own cost as per direction of Engineer-In-Charge and the Contractor shall not be entitled for any extra payment whatsoever in this regard.

2.2.5 Necessary arrangements including its maintenance are to be made by the Contractor for temporary diversion of flow of existing drain and road, as the case may be. The existing drain, road would be demolished, wherever required, with the progress of work under the scope of proposed project. The existing Road and Drain, which are not in the alignment of the said project but are affected and/or need to be demolished during execution for smooth progress of the project, shall be restored to its original status and condition (including black topping) by the Contractor at his own. The cost to be incurred by Contractor in these regards shall be deemed to be included in the quoted rates of the Bill of Quantities items and Contractor shall not be entitled for any extra payment whatsoever, in these regards.

2.2.6 The Contractor shall be responsible to co-ordinate with service provider/concerned authorities for cutting of trees, shifting of utilities and removal of encroachments etc. and making the Site unhindered for completion of work. This shall include initial and frequent follow up meetings/actions/discussions with each involved service provider/concerned authorities. The Contractor shall not be entitled for any additional compensation for delay in cutting of trees, shifting of utilities and removal of encroachments by the service provider/concerned authorities.

2.2.7 The information about the public utilities (whether over ground or underground) like electrical/telephone/water supply lines, OFC Cables, sewer lines, open drains etc. is the responsibility of Contractor who has to ascertain the utilities that are to be affected by the works through the site investigation and collection of information from the concerned utility Owners.

2.2.8 The Contractor shall be responsible to obtain necessary approval from the respective authorities for shifting/re-alignment of existing public utilities. EPI shall only provide necessary letters required for liaisoning by the Contractor in obtaining the approval from the concerned authorities.

2.2.9 Any services affected by the works must be temporarily supported by the Contractor who must also take all measures reasonably required by the various bodies to protect their services and property during the progress of works. It shall be deemed to be the part of the contract and no extra payment shall be made to the Contractor for the same. Shifting/re-alignment of public utilities should be done without disturbing the existing one. New service lines should be laid and connected before dismantling the existing one.

2.2.10 Shifting/re-alignment of existing public utilities shall be done by the Contractor as per technical requirement of respective bodies or as per direction of Engineer-In-Charge. Shifting/re-alignment of public utilities includes all materials, labours,
tools and plants and any other expenses whatsoever for the same. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the Contractor shall not be entitled for any extra payment, whatsoever, in this regard. In case any of these services are shifted by the State Govt/ local authorities themselves for which deposit as per their estimates is to be made to them, the Contractor shall deposit the same and the Contractor shall be paid only at the rates quoted by him in BOQ for quantity specified in the BOQ, if such items are included in the BOQ irrespective of amount paid by him to the State Govt./ local authorities for execution of these works. In case such provision is not made in the BOQ or the quantity exceeds those specified in the BOQ, the same is deemed to be included in the rates quoted by him for other items in BOQ and nothing extra shall be payable to Contractor on this account.

3.0 SCOPE OF WORK

3.1 The scope of work covered in this Tender shall be as per the Bill of Quantities, Specifications, Drawings, Instructions, Orders issued to the Contractor from time to time during the pendency of work. The Drawings for this work, which may be referred for tendering, provide general idea only about the work to be performed under the scope of this contract. These may not be the final drawings and may not indicate the full range of the work under the scope of this contract. The work will be executed according to the Drawings to be released as “GOOD FOR CONSTRUCTION” from time to time by the Engineer-In-Charge of EPI and according to any additions/ modifications/ alterations/deletions made from time to time, as required by any other drawings that would be issued to the Contractor progressively during execution of work. It shall be the responsibility of the Contractor to incorporate the changes that may be in the scope of work, envisaged at the time of tendering and as actually required to be executed.

3.2 The quantities of various items as entered in the “BILL OF QUANTITIES” are indicative only and may vary depending upon the actual requirement. The Contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items specified in the Bill of Quantities. The variation of quantities will be governed as per clause No.69 of GCC.

4.0 VALIDITY OF TENDER

The Tender for the works shall remain open for acceptance for a period of ninety days from the date of opening of Price Bid of Tenders. The earnest money will be forfeited without any prejudice to any right or remedy, in case the Contractor withdraws his Tender during the validity period or in case he changes his offer to his benefits, which are not acceptable to EPI. The validity period may be extended on mutual consent.

5.0 ACCEPTANCE OF TENDER

EPI reserves to itself the authority to reject any or all the Tenders received without assigning any reason. The acceptance of a Tender shall be effective w.e.f. the date on which the telegram/ letter of intent or acceptance of the Tender is put in the communication by EPI. EPI also reserves the right to split the work
among two or more parties at lowest negotiated rate without assigning any reason thereof. The Contractor is bound to accept the portion of work as offered by EPI after split up at the quoted/negotiated rates.

6.0 SET OF TENDER DOCUMENTS:

The following documents will complete a set of Tender Documents.

A) VOLUME I:
   a) Instructions to tenderers
   b) General Conditions of Contract

B) VOLUME II:
   a) Notice Inviting Tenders
   b) Additional Conditions of Contract
   c) Technical Specifications (General, Additional & Technical specifications)
   d) Tender Drawings

C) VOLUME III:
   a) Schedule of Rates/ Bills of quantities (Price-Bid)

7.0 EARNEST MONEY DEPOSIT

Earnest Money Deposit (EMD) of amount as mentioned in “Memorandum” to “Form of Tender” required to be submitted along with the Tender shall be in the form of Demand Draft payable at place as mentioned in “Notice Inviting Tender”/“Instructions to Tenderers” in favour of ‘Engineering Projects (India) Limited’ from any Nationalised bank/Scheduled Bank or in the form of Bank Guarantee from any Nationalised bank/Scheduled Bank as per the enclosed format. The EMD shall be valid for minimum period of 150 days (One hundred fifty Days) from last day of submission of Tender.

7.1 EMD shall accompany the offer and placed in the sealed envelope cover of the offer as detailed in Instructions to Tenderer. Any tender not accompanied with the requisite Earnest Money Deposit alongwith ‘Letter of Undertaking’ shall be rejected and such tenderer(s) will not be allowed to attend the opening of bids.

7.2 The EMD of all unsuccessful tenderers (i.e. except evaluated lowest tenderer) shall be returned within Seven (7) days of the opening of price bids by EPI. Subject to clause 7.6 herein below, EMD of successful tenderer shall be refunded after submission of Security Deposit cum Performance Guarantee by him.

7.3 Once the tenderer has given an unconditional acceptance to the tender conditions in its entirety, he is not permitted to put any remark(s)/conditions(s) (except unconditional rebate on price, if any) in/ along-with the Tender.

7.4 In case the condition 7.3 mentioned above is found violated at any time after opening of Tender, the Tender shall be summarily rejected and EPI shall, without
prejudice to any other right or remedy, be at liberty to forfeit the full said Earnest Money absolutely.

7.5 No interest will be payable by EPI on the said amount covered under EMD/Other security documents.

7.6 EMD of successful tenderer, if deposited in the form of Demand Draft, shall be treated as part of Retention Money.

7.7 At any time after the due date of the Tender, if any tenderer alters /modifies/withdraws his tender within the validity period (or the extended validity period) of his tender or fails to furnish the “Security Deposit cum Performance Guarantee” or the “Additional Performance Guarantee” or fails to execute the “Contract Agreement” within the prescribed time period after the placement of LOI on him, EPI without prejudice to any other rights or remedies shall be at liberty to forfeit the Earnest Money deposited by the tenderer. In the event of re-tender, such tenderer shall not be allowed to submit tender.

8.0 MOBILIZATION ADVANCE

8.1 Mobilization advance up to maximum of amount as mentioned in the “Memorandum” to the “Form of Tender” shall be paid to the Contractor on submission of non-revocable and unconditional Bank Guarantee of an equivalent amount in case of interest free Mobilization Advance or for an amount equal to 110% of the Mobilization Advance in case of interest bearing Mobilization Advance, from a Nationalized Bank / Scheduled Bank as per the enclosed Performa subject to conditions given hereunder. The Mobilization Advance shall be at the Interest Rate as mentioned in the “Memorandum” to the “Form of Tender”. This advance shall be paid in three installments as follows: -

i) First Installment of fifty percent of total mobilization advance shall be paid after fulfillment of the following conditions:

   a) Signing of the agreement.
   b) Submission of Security Deposit cum Performance Guarantee as per Clause No. 9.

ii) Second installment of twenty five percent of total mobilization advance will be paid after the setting up of site office and providing facilities to EPI as per contract, and completion of enabling works required for taking up the construction. These include construction of store, labour hutments, etc.

iii) The balance twenty five percent of total mobilization advance shall be paid on mobilization of manpower, plant & equipment etc. to the satisfaction of Engineer-In-Charge of EPI.

8.2 The Advance shall be recovered on monthly installment basis. The installments shall commence when 20% of the scheduled contract period has elapsed and fully recovered when 80% of the scheduled contract period is over, both from
date of start. (The month of start & completion of recovery of mobilization advance to be rounded off to nearest full month).

8.3 Part ‘Bank Guarantees’ (BGs) against mobilization advance shall be furnished in as many numbers as the number of recovery installments as given in “Memorandum” to the “Form of Tender” and should be equivalent to the amount of each recovery installment. At any point of time, if the Contractor’s payable amount on account of work done is not available with EPI or the amount payable is less than the recovery installment, recovery of such advance shall be effected by encashing the BG of equivalent recovery amount. The decision of EPI in this regard shall be final and binding on the Contractor. The validity period for the part BGs shall be till three months after the end of the month in which instalment is due to be recovered with further three months claim period.

8.4 In case recovery of Mobilization Advance is delayed, interest shall be charged @12% (Twelve percent) per annum on delayed recoveries due to late submission of bills by the Contractor or due to delayed encashment of Bank Guarantee, as stated above or due to any other reasons whatsoever.

8.5 Contractor is required to furnish the Utilization Certificate for each installment of mobilization advance to the satisfaction of Engineer-In-Charge. Subsequent installments of mobilization advance shall be released only after getting satisfactory utilisation certificate from the Contractor for the earlier released installment.

8.6 Notwithstanding what is contained in aforesaid clauses, no mobilization advance whatsoever shall be payable, if payment of mobilization advance is not mentioned in the “Memorandum” to the “Form of Tender”.

9.0 SECURITY DEPOSIT CUM PERFORMANCE GUARANTEE

“Within 10 (ten) days from the date of issue of letter of Intent or within such extended time as may be granted by EPI in writing, the Contractor shall submit to EPI a Security Deposit cum Performance Bank Guarantee in the form appended, from any Nationalised bank / Scheduled Bank equivalent to 5% (five percent only) of the Contract Value for the due and proper execution of the contract. This bank guarantee shall remain valid up to 90 (ninety) days after the end of defects liability period.

In case the Contractor fails to submit the Security Deposit cum Performance Guarantee of the requisite amount within the stipulated period or extended period, letter of intent will stand withdrawn and EMD of Contractor shall be forfeited.

9.1 ADDITIONAL PERFORMANCE GUARANTEE FOR EXISTING CONTRACTORS

In case bidder is a working Contractor of EPI at the time of issuance of Letter of Intent (LOI) for the work, the bidder has to furnish an additional Performance Guarantee of 1% (One Percent) of the Contract Value of the work, in case working capacity of the bidder is less than the aggregate of balance work-load of all the works of the bidder with EPI as on date of placement of LOI for this work. The balance workload shall also include the value of work awarded but not yet
started and finally approved value of this work. This additional Performance Guarantee shall be in addition to the Security Deposit cum Performance Guarantee of the works to be furnished by the bidder as specified in the clause no. 9 of General Conditions of Contract. Further, no relaxation in Security Deposit cum Performance Guarantee as in clause no. 9 of General Conditions of Contract shall be made in case working capacity works-out to be more than the balance value of works as mentioned above. The working capacity of the Contractor shall be calculated as under:

\[
\text{WORKING CAPACITY} = 2.5 \times \text{(Average Turnover of the party as per latest three audited Balance Sheets)}.
\]

NOTE: The decision of amount of additional Performance Guarantee as above shall be taken by EPI and shall be final & binding to the Contractor.

In case the Contractor fails to submit the additional performance guarantee of the requisite amount within 10 days from the date of issue of letter of Intent or within such extended time as may be granted by EPI in writing, the letter of intent will stand withdrawn and EMD of the Contractor shall be forfeited.

9.2 ABNORMALLY HIGH AND LOW RATED ITEMS

For item rate tenders if, the rates quoted by the lowest bidder for certain items of the Bill of Quantities of the Tender are found to be abnormally high or low in comparison to the Market Rate analysis of the item done by EPI and/or in comparison to EPI's method of working out market rate justification for the items, the same shall be governed as under:

For Abnormally High Rated items (AHR), the progressive payment shall be 80% (Eighty percent) of the payment due to the Contractor against execution of the AHR items. The balance withheld 20% (twenty percent) payment shall be released after 80% of total value of the original contract is completed in financial terms in order to ensure that the Abnormally Low Rated (ALR) items identified at the time of Award of work have been executed as per requirement of project and as per terms of Contract. Further, deviation limit for AHR items shall be nil on plus side and 100% on minus side. The provision of deviation limit of clause 69.1(v) shall not apply to AHR items. In case of deviation of quantities given in schedule of quantities for AHR items on plus side, the same shall be governed by clause 69.2. The decision of Engineer-In-Charge of EPI in this regard shall be final and binding on the Contractor.

The provision of para 9.2 shall not be applicable on tenders invited on Percentage Rate/lump Sum basis.
The decision of EPI on identification/marking of AHR and ALR items is final and binding on the Contractor. In case the Contractor does not agree to the identified AHR and ALR items, at the time of award of works, the EMD/Security Deposit cum Performance Guarantee of the Contractor shall be forfeited and decision of EPI in this regard shall be final & binding on the Contractor.

10.0 RETENTION MONEY

The Retention Money shall be deducted from each running bill of the Contractor at 5% (five percent only) of the gross value of the Running Account bill. The Earnest Money Deposited by the tenderer in the form of Demand Draft will be treated as part of the Retention Money. The Retention Money shall be refunded to the Contractor after expiry of defects liability period (referred to in Clause No. 74) or on payment of the amount of the final bill whichever is later. If the amount of Retention Money deduction in cash is more than Rs.10.00 lakhs (Rupees Ten lakhs only), the excess amount can be refunded to Contractor against submission of Bank Guarantee of equivalent amount from a Nationalised bank / Scheduled Bank in the prescribed proforma of Performance Guarantee of EPI.

11.0 MOBILIZATION OF MEN, MATERIALS AND MACHINERY:

11.1 All expenses towards mobilization at Site and de-mobilization including bringing in equipment, work force, materials, dismantling the equipments, clearing the Site etc. shall be deemed to be included in prices quoted and no separate payment on account of such expenses shall be entertained.

11.2 It shall be entirely the Contractor’s responsibility to provide, operate and maintain all necessary construction equipments, scaffoldings and safety gadget, lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all jobs as per the specifications and within the schedule time of completion of work. Further, Contractor shall also be responsible for obtaining temporary electric and water connection for all purposes. The Contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

11.3 It shall be the responsibility of the Contractor to obtain the approval for any revision and/or modification desired by him from EPI before implementation. Also such revisions and/or modifications if accepted / approved by EPI shall be carried at no extra cost to EPI.

11.4 The procurement and supply in sequence and at the appropriate time of all materials and consumable shall be entirely the Contractor’s responsibility and his rates for execution of work shall be inclusive of supply of all these items.
11.5 It is mandatory for the Contractor to provide safety equipments and gadgets to its all workers, supervisory and Technical staff engaged in the execution of the work while working. The minimum requirement (but not limited to) shall be gumboots, safety helmets, Rubber hand gloves, facemasks, safety nets, belts, goggles etc. as per work requirements. Sufficient nos. of these equipments and gadgets shall also be provided to EPI by the Contractor at his own cost for use of EPI Officials and/ or workforce while working/ supervision at Site. No staff/ worker shall be allowed to enter the Site without these equipments/ gadgets. The cost of the above equipments/ gadgets are deemed to be included in the rates quoted by the Contractor for the items & works as per Bill of Quantities and Contractor shall not be entitled for any extra cost in these regard. The above norm is to be strictly complied with at Site. In case the Contractor is found to be deficient in providing Safety Equipments/ Gadgets in the opinion of Engineer-In-Charge, the Engineer-In-Charge at his option can procure the same at the risk & cost of Contractor and provide the same for the use of worksite and shall make the recoveries from the bills of the Contractor for the same. The decision of the Engineer-In-Charge shall be final and binding on Contractor in this regard.

11.6 All Designs, Drawings, Bill of Quantities, etc. (except Bar Bending Schedule, Shop & Fabrication Drawings) for all works shall be supplied to the Contractor for all buildings services and development works by EPI in phased manner as the works progress. However it shall be the duty and responsibility of the Contractor to bring to the notice of EPI in writing as to any variation, discrepancy or any other changes required and to obtain revised drawings and designs and / or approval of EPI in writing for the same.

11.7 One copy of contract documents including Drawings furnished to the Contractor shall be kept at the Site and the same shall at all reasonable times be available for inspection.

11.8 All materials, construction plants and equipments etc. once brought by the Contractor within the project area, will not be allowed to be removed from the premises without the written permission of EPI. Similarly all enabling works built by the Contractor for the main construction undertaken by him, shall not be dismantled and removed without the written authority of EPI.

11.9 Contractor shall have to prepare the Bar Bending Schedule, Shop and Fabrication Drawings free of cost, if required for any of the items of work. Five copies of these Drawings each including for revision will be submitted to EPI for approval. Before executing the item, Bar Bending Schedule, Shop & Fabrication Drawings should be got approved from EPI.

12.0 **INCOME TAX DEDUCTION**

Income tax deductions shall be made from all payments made to the Contractor including advances against work done, in accordance with the Income Tax act prevailing from time to time.
13.0 TAXES AND DUTIES

13.1 The Contractor shall be responsible for the payment, wherever payable, at his own cost of all taxes such as excise duty, custom duty, sales tax, including the purchase tax, consignment tax, work contract tax, service tax, VAT or any other similar tax in the state concerned, turnover tax, toll tax, octroi charges, royalty, cess, levy and other tax(es) or duty(ies) which may be specified by local/ state/ central government from time to time on all materials, articles which may be used for this work. The rates quoted by him in the Tender in Bill of Quantities shall be inclusive of all such taxes, duties, etc. The imposition of any new and/or increase in the aforesaid taxes, duties, levies (including fresh imposition of Work Contract Tax, Turnover Tax, Sales Tax on Work Contract, VAT or any other similar Tax) etc. during the currency of the contract shall be borne by Contractor and shall not be paid or reimbursed to the Contractor by EPI. In the event of non-payment/default in payment of any octroi, royalty, cess, turnover tax, sales tax, including the purchase tax, consignment tax, work contract tax, VAT, Service Tax or any other similar tax in the state concerned, customs, excise or any other levy/tax including labour dues etc. by Contractor, EPI reserves the right to withhold the dues/ payments of Contractor and make payment to local/state/ Central Government authorities or to labourers as may be applicable. The Contractor should submit along with the Tender Registration Certificates with Sales Tax on works contract authority etc. other wise appropriate recovery shall be made from his bills.

13.2 The rate quoted by the Contractor shall be deemed to be inclusive of all Taxes and duties as mentioned in clause no.13.1 given above or any other tax as applicable and the same shall not be reimbursed by EPI. Tax deductions at source shall be made as per laws prevalent in the State.

13.3 The stamp duty and registration charges, if any, on the contract agreement levied by the Government or any other statutory body, shall be paid by the Contractor.

13.4 It will be incumbent upon the Contractor to obtain a registration certificate as a dealer under the Local Sales Tax Act and the Central Sales Tax Act, Service Tax, etc. and necessary evidence to this effect shall be furnished by the Contractor to EPI. Sales Tax on the transactions between the Contractor and his Sub-Contractor/Vendors etc. shall be borne by the Contractor. The Contractor shall be responsible for any taxes that may be levied hereunder on the transaction between Contractor and EPI.

13.5 The bidder shall quote his rates inclusive of Turnover Tax/ Sales Tax on Works Contract payable to State Govt. along-with other taxes, duties, levies etc. in conjunction with other terms and conditions. In case, the Turnover Tax/ Sales Tax on Works Contract on execution of works is waived off by the State Govt. at later stage for this project, the equivalent amount from the date of waiver of such tax (as per prevailing rate as on the date of waiver of Turnover Tax/ Sales Tax on Works Contract) shall be deducted from the amount payable to the Contractor from subsequent RA Bills.
13.6 VALUE ADDED TAX (VAT)

The consideration agreed for the execution of said contract shall include the taxes, duties, cess, etc. such as excise duty, service tax, VAT, which is leviable or may be levied in future under any State Law or the Central Law on execution of said contract, such taxes shall be borne by the Contractor and shall not be reimbursed by EPI. Further, if due to any variance in such tax, duties, cess etc. there is any increase in the taxes, the same shall also be borne by the Contractor. Where under any of the State or the Central Law, there is requirement of deduction of tax at source, the same shall be deducted from the amount paid or payable to the Contractor pursuant to this contract and shall be deposited to the Government authorities by EPI. EPI shall issue the documents/forms/certificate as prescribed under the relevant law, in respect of the amount so deducted from the amount paid or payable to the Contractor. EPI shall have full rights to withhold the amount payable to the Contractor in pursuant to this contract, if Contractor does not fulfill his obligation under any State or Central Law relating to execution of said contract, in case the amount has already been paid by EPI, EPI has the right to recover such payments from the Contractor.

14.0 ROYALTY ON MATERIALS:

The Contractor shall deposit royalty and obtain necessary permit for supply of bajri, stone, kankar, sand, etc. from the local authorities and quoted rates shall be inclusive of royalty.

15.0 RATES TO BE FIRM

15.1 The rates quoted by the tenderer shall be firm and fixed for the entire period of completion and till handing over of the work. No revision to rates or any escalation shall be allowed on account of any increase in prices of materials, labour, POL and Overheads etc or any other statutory increase during the entire contract period or extended contract period.

15.2 The Contractor shall be deemed to have inspected the Site, its surrounding and acquainted itself with the nature of the ground, accessibility of the Site and full extent and nature of all operations necessary for the full and proper execution of the contract, space for storage of materials, construction plant, temporary works, restrictions of working time, restrictions on the plying of heavy vehicles in area, supply and use of labour, materials, plant, equipment and laws, rules and regulations, if any, imposed by the local authorities.

15.3 The rates and prices to be tendered in the Bill of Quantities are for completed and finished items of works complete in all respects. It will be deemed to include all construction plant, labour, supervision, materials, transport, all temporary works, erection, maintenance, Contractor’s profit and establishment/overheads, together with preparation of designs & drawings pertaining to casting yard, shop drawing, fabrication drawing (if required), staging form work, stacking yard, etc. all general risk, taxes, royalty, duties, cess, octroi and other levies, insurance,
liabilities and obligations set out or implied in the Tender Documents and contract.

15.4 Unless otherwise specified in the Bill of Quantities (BOQ), the Contractor has to make his own arrangement for dewatering/ bailing out of water, effluent including strutting, shoring etc at every stage of work wherever required (including Tunnel work) including working under foul condition as per direction of Engineer-In-Charge at his own cost and the Contractor shall not be entitled for any extra payment, whatsoever, in this regard.

15.5 If required to make work site suitable for execution, Contractor shall have to clear jungle including of rank vegetation, grass, trees etc., clear & clean existing drains/ canals (including strutting, shoring and packing cavities) and dispose them out of the Site up-to any lead and lift as per direction of Engineer-In-Charge. The Contractor should inspect the Site of work from this point of view. Unless otherwise specified in the Bill of Quantities, the cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the Contractor shall not be entitled for any extra payment in this regard.

15.6 If any temporary/ permanent structure is encountered or safety of such structure in the vicinity is endangered due to execution of the project, the Contractor has to protect the structures by any means as per direction of Engineer - in – Charge. If any damage caused to any temporary or permanent structure(s) in the vicinity is caused due to execution of the project, the Contractor has to make good the same by any means as per direction of Engineer - in – Charge. The Contractor should inspect the Site of work from this point of view. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the Contractor shall not be entitled for any extra payment in this regard.

16.0 ESCALATION / PRICE VARIATION

No claim on account of any Price Variation / Escalation on whatsoever ground shall be entertained at any stage of works. All rates as per Bill of Quantities (BOQ)/Price-Bid quoted by Contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation/price variation clause shall be applicable on this contract.

17.0 INSURANCE OF WORKS ETC.

Contractor is required to take Contractor’s All Risk Policy or Erection All Risk Policy (as the case may be) including Marine Insurance from an Approved Insurance Company in the joint name with EPI and bear all costs towards the same for the full period of execution of works including the defect liability period for the full amount of contract against all loss or damage from whatever cause arising for which he is responsible under the terms of the contract and in such manner that EPI and the Contractor are covered during the period of construction of works and/or also covered during the period of defect liability for the loss or damage as under:

a. The work and the temporary works to the full value of such works.
b. The materials, construction plant, centering, shuttering and scaffolding materials and other things brought to the Site for their full value. Whenever required by EPI, the Contractor shall produce the policy or the policies of insurance and the receipts for payment of the current premiums.

18.0 INSURANCE UNDER WORKMEN’S COMPENSATION ACT

Contractor is required to take insurance cover as per requirement of the Workmen’s Compensation Act, 1923 amended from time to time from an Approved Insurance Company and pay premium charges thereof. Wherever required by EPI the Contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

19.0 THIRD PARTY INSURANCE

Contractor is required to take third party insurance cover for an amount of 5% (five percent) of Contract Value from an Approved Insurance Company for insurance against any damage, injury or loss which may occur to any person or property including that of EPI, arising out of the execution of the works or temporary works. Wherever required by EPI the Contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

In case of failure of the Contractor to obtain insurance for works, insurance under Workman Compensation Act and Third Party insurance as described above within one month from the date of commencement of work, running account payments of the Contractor shall be withheld till such time the aforesaid insurance covers are obtained by the Contractor.

20.0 INDEMNITY AGAINST PATENT RIGHTS

The Contractor shall fully indemnify EPI from and against all claims and proceedings for or on account of any infringement of any patent rights, design, trademark or name or other protected rights in respect of any construction plant, machine, work or material used for in connection with the works or temporary works.

21.0 LABOUR LAWS TO BE COMPLIED WITH BY THE CONTRACTOR

The Contractor shall obtain a valid licence under the contract labour (Regulation & Abolition) Act 1970 and the Contract Labour Act (R&A) Central Rules 1971 and amended from time to time, and continue to have a valid licence until the completion of the work including defect liability period. The Contractor shall also abide by the provision of the child labour (Prohibition and Regulation) Act. 1986 and as amended from time to time. Any failure to fulfill this requirement shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.
The Contractor shall comply with the provisions of the payment of Wages Act, 1936, Minimum Wages Act, 1948, Employer's Liability Act, 1938, Workmen's Compensation Act, 1923, Maternity Benefit Act, 1961 and Mines Act -1932, Industrial Disputes Act, 1947 or any modifications thereof or any other law relating thereto and rules made there under from, time to time.

21.1 No labour below the age of 18 years shall be employed on the work.

22.0 **LABOUR SAFETY PROVISION**

The Contractor shall be fully responsible to observe the labour safety provisions.

23.0 **OBSERVANCE OF LABOUR LAWS**

23.1 The Contractor shall be fully responsible for observance of all labour laws applicable including local laws and other laws applicable in this matter and shall Indemnify and keep indemnified EPI against effect of non observance of any such laws. The Contractor shall be liable to make payment to all its employees, workers and sub-Contractors and make compliance with labour laws. If EPI or the Client/ Owner/ Employer is held liable as "Principal Employer" to pay any amount or contributions etc. under legislation of Govt. or Court decision in respect of the employees of the Contractor, then the Contractor would reimburse the amount of such payments, contribution etc. to EPI and/ or same shall be deducted from the payments, Retention Money etc. of the Contractor.

23.2 The Contractor shall submit proof of having valid EPF registration certificate. In absence of the said certificate payment to the extent of 4.70% (four point seven percent) of the value of all the Running Account bills may be withheld by EPI and shall be released only after the production of the EPF registration certificate from the concerned authorities. If it is incumbent upon EPI to deposit withheld amount with EPF authorities, the withheld amount shall be deposited by EPI with EPF authorities. In such a case EPI shall not refund this withheld amount to the Contractor even after the production of EPF registration certificate.

23.3 The Contractor shall be liable to pay cess levied under the Building and other Construction Workers Welfare Cess Act, 1996, at such rates as may be notified by the Government from time to time. EPI shall deduct at source from every Running Account Bill of the Contractor, the said cess, at such rates for the time being prevailing, which shall not exceed 2% (two percent) but not be less than 1% (one percent) of the cost of construction incurred by EPI.

24.0 **LAWS GOVERNING THE CONTRACT**

This contract shall be governed by the Indian Laws for the time being in force and amended from time to time.

25.0 **LAWS, BYE LAWS RELATING TO THE WORK**

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

26.0 EMPLOYMENT OF PERSONNEL

26.1 The Contractor shall employ only Indian Nationals as his representatives, servants and workmen after verifying their antecedents and loyalty. He shall ensure that no personnel of doubtful antecedents & integrity and any other nationality in any way are associated with the works.

26.2 EPI shall have full power to get removed immediately any representative, agent, servant and workmen or employees of the Contractor on account of misconduct, negligence or incompetence or whose continued employment may in the opinion of the Engineer-In-Charge be undesirable without assigning any reason for the removal. The Contractor shall not be allowed any compensation on this account whatsoever.

27.0 TECHNICAL STAFF FOR WORK

27.1 The Contractor shall employ at his cost the adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose the numbers to be deployed, their qualification, experience as decided by EPI shall be final and binding on Contractor. The Contractor shall not be entitled for any extra payment in this regard. The technical staff should be available at Site, whenever required by EPI to take instructions.

27.2 Within 15 days from the date of letter of intent, the Contractor shall submit a site organizational chart and Resume including details of experience of the Project-in-Charge and other staff proposed by him and shall depute them on the Project after getting approval from Engineer-In-Charge. If desired by the Contractor at later date, the Project-in-Charge and other staff whose resume is approved by EPI can be replaced with prior written approval of EPI and replacement shall be with equivalent or superior candidate only. Decision of Engineer-In-Charge shall be final and binding on the Contractor.

Even after approving the site organizational chart, the Engineer-In-Charge due to nature and exigency of work can direct the Contractor to depute such additional staff as in view of Engineer-In-Charge is necessary and having qualification and experience as approved by the Engineer-In-Charge. The removal of such additional staff from the Site shall only be with the prior written approval of Engineer-In-Charge. The Contractor shall not be paid anything extra whatsoever on account of deployment of additional staff and decision of the Engineer-In-Charge shall be final and binding on the Contractor.

27.3 In case the Contractor fails to employ the staff as aforesaid, he shall be liable to pay a reasonable amount not exceeding a sum of Rs. 25,000 (Rupees Twenty Five Thousand only) for each month of default in the case of each person. The
decision of the Engineer-In-Charge as to number of Technical Staff to be adequate for the project and the period for which the required technical staff was not employed by the Contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the Contractor.

28.0 LAND FOR LABOUR HUTS/ SITE OFFICE AND STORAGE ACCOMMODATION

28.1 The Contractor shall arrange the land for temporary office, storage accommodation and labour huts at his own cost and get the clearance of local authorities for setting up of labour camp and cost of same is deemed to be included in the rates quoted by the Contractor for the works. The Contractor shall ensure that the area of labour huts is kept clean and sanitary conditions are maintained as laid down by the local authorities controlling the area. The labour huts shall be so placed that it does not hinder the progress of work or access to the worksite. The vacant possession of the land used, for the purpose shall be given back by Contractor after completion of the work. The Retention Money of the Contractor shall be released only after Contractor demolishes all structures including foundations and gives back clear vacant possession of this land.

28.2 In the event the Contractor has to shift his labour camp at any time during execution of the work on the Instructions of local authorities or as per the requirement of the work progress or as may be required by EPI, he shall comply with such instructions at his cost and no claim whatsoever shall be entertained on this account.

28.3 FURNISHED OFFICE ACCOMMODATION & MOBILITY AND COMMUNICATION TO BE PROVIDED BY CONTRACTOR TO EPI

On acceptance of Tender, the Contractor at his own cost will construct a suitable furnished office at Site equipped with basic facilities such as telephone(s), fax, internet, photocopier, computer(s) & printer(s) alongwith operator(s), regular electricity & drinking water supply and vehicles for staff etc. as per the requirement of the project. The Contractor shall provide consumable as required and maintain the aforesaid facilities intact/operational during the currency of the contract including the defects liability period. The Contractor shall also make sufficient arrangement for photography/ videography preferably by maintaining a camera/video camera at Site so that photographs video can be taken of any specific activity at any point of time. The Contractor shall also provide software like MS Project etc. for the purpose of preparing progress report, etc.

28.4 The Contractor shall make all arrangements for ground breaking ceremony/ inaugural function etc for the project as required and the cost towards it is deemed to be included in his rates/offer. Any expenditure already incurred/to be incurred by EPI, shall be recovered from the Contractor.

28.5 PROTECTION OF TREES

Trees designated by the Engineer-In-Charge shall be protected from damage during the course of the works and earth level within one meter of each such tree shall not
be changed. Where necessary, such trees shall be protected by providing temporary fencing.

29.0 WATCH & WARD AND LIGHTING

The Contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, lights, watchmen etc. during the progress of work as directed by Engineer-In-Charge.

30.0 HEALTH & SANITARY ARRANGEMENTS

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

31.0 WORKMEN'S COMPENSATION ACT

The Contractor shall at all times indemnify EPI and Owner against all claims for compensation under the provision of Workmen’s Compensation Act, 1923 or any other law in force, for any workmen employed by the Contractor or his sub-Contractor in carrying out the contract and against all costs and expenses incurred by EPI therewith.

32.0 MINIMUM WAGES ACT

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

33.0 LABOUR RECORDS

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

a) The number of the labour employed by him (category-wise).

b) Their working hours.

c) The wages paid to them.

d) The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused.

e) The number of female workers who have been allowed Maternity Benefits under the Maternity Benefit Act, 1962 and the amount paid to them.

f) Any other information required by Engineer-In-Charge.

34.0 RELEASE OF RETENTION MONEY AFTER LABOUR CLEARANCE

Retention Money of the work shall not be refunded till the Contractor produces a clearance certificate from the concerned Labour Officer. As soon as the work is virtually complete, the Contractor shall apply for the clearance certificate to the concerned Labour Officer under intimation to the Engineer-In-Charge. The Engineer-In-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the Contractor in respect of the work. If no complaint is pending, on record till three months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Retention Money will be released if otherwise due.

35.0 SECURED ADVANCE AGAINST NON-PERISHABLE MATERIALS

Interest free secured advance up-to a maximum of 75% (seventy five percent) of the Market Value of the materials or the cost of materials as derived from the tendered item rate of the Contractor, whichever is less, required for incorporation in the permanent works and brought to Site and duly certified by EPI Site Engineer shall be paid to the Contractor for all non-perishable items as per CPWD/ MORTH (as the case may be) norms. The advance will be paid only on submission of Indemnity Bond in the prescribed pro-forma. The advance shall be recovered in full from next Running Account bill and fresh advance paid for the balance quantities of materials. The Contractor shall construct suitable godown at the Site of work for safe storage of the materials against any possible damages due to sun, rain, dampness, fire, theft etc. at his own cost. He shall also employ necessary watch & ward establishment for the purpose at his costs and risks. Such secured advance shall be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer-In-Charge provided the Contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer-In-Charge shall be final and binding on the Contractor in this matter. No secured advance shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.

36.0 MEASUREMENTS OF WORKS

36.1 Unless otherwise mentioned in the Bill of Quantities the measurements of works shall be done as per CPWD/MORTH specifications (as specified in Technical Specification of the Tender) and if the same is not given in the CPWD/MORTH Specifications, the same shall be measured as per latest relevant BIS codes in force. The quantity of steel reinforcement and the structural steel sections incorporated in the work shall be measured & paid on the basis of standard coefficients of sections as per BIS Codes of practice.
36.2 The Engineer-In-Charge shall except as otherwise stated ascertain and determine by measurement the value of work done in accordance with the contract.

36.3 All items having financial value shall be entered in Measurement Book, level book, etc. prescribed by EPI so that a complete record is obtained of all work performed under the contract. Items of non-financial value (which are not payable) may also be entered in Measurement Book at the sole discretion of the Engineer-In-Charge.

36.4 Measurements shall be taken jointly by the Engineer-In-Charge or his authorized representative and by the Contractor or his authorized representative.

36.5 Before taking measurements of any work the Engineer-In-Charge or the authorized person deputed by him for the purpose shall give a reasonable notice to the Contractor. If the Contractor fails to attend or send an authorized representative for measurement after such a notice or fails to countersign or to record the objection within a week from the date of measurement, then in any such event measurement taken by the Engineer-In-Charge or by the person deputed by him shall be taken to be correct measurements of the work.

36.6 The Contractor shall, without extra charge provide assistance with every appliance, labour and other things necessary for measurement.

Measurements shall be signed and dated by both parties each day on the Site on completion of measurement.

37.0 PAYMENTS

37.1 The bill shall be submitted by Contractor each month on or before the date fixed by the ENGINEER-IN-CHARGE for all works executed in previous months. The Contractor shall prepare computerized bills using the program as approved by Engineer-In-Charge as per prescribed format/ pro-forma. The Contractor shall submit five numbers of hard copies and one soft copy of floppy/ CD for all bills. Subject to clause 37.3 herein below, the payment due to the Contractor shall be made within fifteen days of getting the measurements verified from the Engineer-In-Charge or his subordinate/ representative and certification of bill by the Engineer-In-Charge.

37.2 All running payments shall be regarded as ‘on account’ payments against the final payment only and not as payments for work actually done and completed and / or accepted by EPI and shall not preclude the recovery for bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the due performance of the Contract, or any part thereof, in this respect, or the accruing of any claim, nor shall it conclude, determine or affect in any way the powers of EPI under these conditions or any of them as to the final settlement and adjustments of the accounts or otherwise, or in any other way vary/ affect the contract. The final bill shall be submitted by the Contractor within three months of
the completion of work, otherwise EPI’s certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on Contractor. Each Running Bill should be accompanied by two sets of at-least 20 (twenty) photographs as per direction of Engineer-In-Charge taken from various points depicting status of work as on Report/ Bill date along with Monthly Progress Report for the concerned month in the pro-forma to be given/approved by Engineer-In-Charge. Intermittent progress photographs as and when required shall also be provided by the Contractor at his own cost as per direction of Engineer-In-Charge. No payment of running account bill shall be released unless it is accompanied by progress photographs and Monthly Progress Report as above.

37.3 It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between EPI and the Contractor, the Contractor shall become entitled to payment only after EPI has received the corresponding payment(s) from the Client/Owner for the work done by the Contractor. Any delay in the release of payment by the Client/Owner to EPI leading to delay in the release of the corresponding payment by EPI to the Contractor shall not entitle the Contractor to any compensation/interest from EPI.

37.4 All payments shall be released by EPI by Account Payee Cheque from any of its offices in India directly at the address notified by the Contractor (Postage charges shall be charged to the Contractor’s account). In case of Payments is made by Demand Draft at the request of the Contractor, Bank Commission charges shall be debited to the account of Contractor.

38.0 WORK ON SUNDAYS, HOLIDAYS AND DURING NIGHT

For carrying out work on Sunday and Holidays or during night, the Contractor will approach the Engineer-In-Charge or his representative at least two days in advance and obtain his permission. The Engineer-In-Charge at his discretion can refuse such permission. The Contractor shall have no claim on this account whatsoever. If work demand, the Contractor shall make arrangements to carry out the work on Sundays, Holidays and in two, three shifts with the approval of Engineer-in-Charge at no extra cost to EPI.

39.0 NO IDLE CHARGES TOWARDS LABOUR OR PLANT & MACHINERY ETC.

No idle charges or compensation shall be paid for idling of the Contractor’s labour, staff or Plant & Machinery etc. on any ground or due to any reason whatsoever. EPI will not entertain any claim in this respect.

40.0 WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, ORDERS, ETC.

The Contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The Contractor shall also conform exactly, fully and faithfully to the Design, Drawings and Instructions.
in writing in respect of the work assigned by the Engineer-In-Charge and the Contractor shall be furnished free of charge one copy of the Contract Documents together with Specifications, Designs, Drawings.

The Contractor shall comply with the provisions of the contract and execute the works with care and diligence and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

41.0 DIRECTION FOR WORKS

41.1 All works to be executed under the contract shall be executed under the direction and subject to approval in all respect of the Engineer-In-Charge of EPI who shall be entitled to direct at what point or points and in what manner works are to be commenced and executed.

41.2 The Engineer-In-Charge and his representative shall communicate or confirm their instructions to the Contractor in respect of the execution of work during their Site inspection in a ‘Works Site Order Book’ maintained at the site office of Engineer-In-Charge. The Contractor or his authorized representative shall confirm receipt of such instructions by signing against the relevant orders in the book. The Contractor shall be bound to sign the site order book as and when required by Engineer-In-Charge and carry out compliance of instructions promptly to the satisfaction of Engineer-In-Charge.

42.0 ORDER OF PRECEDENCE OF DOCUMENTS

42.1 In case of difference, contradiction, discrepancy, dispute with regard to Conditions of Contract, Specifications, Drawings, Bill of Quantities and Rates quoted by the Contractor and other documents forming part of the contract, the following shall prevail in order of precedence.

i) Contract Agreement

ii) Fax, Telegram or Letter of Intent, detailed letter of Work Order along with statement of agreed variations and its enclosures.

iii) Description in Bill of Quantity / Schedule of Quantities

iv) Additional Conditions of Contract.

v) Technical specifications (General / Special Technical Specification) as given in the Tender Documents.

vi) General Conditions of Contract.

vii) Drawings

viii) CPWD/ MORTH specifications (as specified in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of Tenders.
ix) Relevant B.I.S. Codes.

42.2 If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer-In-Charge shall be the deciding authority with regard to the intention of the document which shall be final and binding on the Contractor.

42.3 Any error in description, quantity or rate in the Schedule of Quantities/items or Bill of Quantities or any omission therefrom shall not vitiate the contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to the Drawings and Specifications or from any of his obligations under the contract.

43.0 TIME SCHEDULE & PROGRESS

43.1 Time allowed for carrying out all the works as entered in the Tender shall be as mentioned in the “Memorandum” to the “Form of Tender” which shall be reckoned from the 10th day from the date on which the letter/telegram of Intent is issued to the Contractor. Time shall be the essence of the contract and Contractor shall ensure the completion of the entire work within the stipulated time of completion.

43.2 The Contractor shall also furnish within 10 days from the date of letter/telegram of Intent, a CPM network/PERT chart/Bar Chart for completion of work within stipulated time. This will be duly got approved from EPI. This approved Network/PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.

43.3 Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/Network. No additional payment will be made to the Contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-In-Charge.

43.4 During the currency of the work the Contractor is expected to adhere to the time schedule on milestone and total completion and this adherence will be a part of Contractor’s performance under the contract. During the execution of the work Contractor is expected to participate in the review and updating of the Network/BAR CHART undertaken by EPI. These reviews may be undertaken at the discretion of EPI either as a periodical appraisal measure or when the quantum of work order on the Contractor is substantially changed through deviation orders or amendments. The review shall be held at Site or any of the offices of EPI/Owner or Consultant of EPI/Owner at the sole discretion of EPI.

43.5 If at any time, it appears to the Engineer-In-Charge that the actual progress of work does not conform to the approved programme referred above, the Contractor shall produce a revised programme showing the modifications to the approved programme by additional inputs to ensure completion of the work within the stipulated time. The Contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the
stipulated date of completion shall not automatically amount to a grant of extension of time to the Contractor.

43.6 Contractor shall submit fortnightly/ Monthly (as directed by Engineer-In-Charge) progress reports (5 copies) on a computer based program (program and software to be approved by Engineer-In-Charge) highlighting status of various activities and physical completion of work.

43.7 The Contractor shall send completion report along with as built drawings and maintenance schedule to the office of Engineer-In-Charge, of EPI in writing within a period of 30 days of completion of work.

44.0 WATER AND ELECTRICITY

The Contractor shall make his own arrangement for Water & Electrical power for construction and other purposes at his own cost and pay requisite electricity and water charges. The Contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

45.0 MATERIALS TO BE PROVIDED BY THE CONTRACTOR

The Contractor shall, at his own expense, provide all materials, required including Cement & Steel for the works.

The Contractor shall at his own expense and without delay, supply to the Engineer-in-Charge samples of materials to be used on the work and shall get the same approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The Contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-In-Charge that the materials so comply.

The Contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer-In-Charge or his authorized representative 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 and every assistance and cost in obtaining the right and visit to such access.

The Engineer-In-Charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Engineer-In-Charge shall be at liberty to employ at the expense of the Contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-In-Charge shall also have full power to require other proper materials to be substituted thereof and in case of default, the Engineer-In-Charge may cause the same to the supplies and all
costs which may require such removal and substitution shall be borne by the Contractor.

45.1 CEMENT AND CEMENT GODOWN

Cement shall be procured by Contractor of 43 Grade conforming to BIS : 8112 Specification latest edition or higher Grade as directed by the Engineer-In-Charge. The cement shall be procured directly from the reputed manufacturers/stockist, which will have to be got approved from EPI in advance. Relevant vouchers and test certificates will be produced as and when required. The cement shall be stored by the Contractor in such suitable covered and lockable stores, well protected from climate and atmospheric effect. The cement godown shall be constructed by the Contractor as per CPWD specifications at his own cost. The cement will remain under double lock, one from EPI and other from Contractor. The cement in bags shall be stored in godowns in easy countable position. Cement bags shall be used on first in first out basis. Cement stored for beyond 90 days will be required to be tested at Contractors cost, before use in works.

45.2 STEEL & STEEL STOCKYARD

Steel conforming to BIS specifications (latest edition) shall be procured by the Contractor directly from reputed manufacturers/producers as approved by EPI. The manufacturer has to give a certificate that the material supplied is not a re-rolled product. Relevant vouchers & test certificates will be produced by the Contractor. Re-rolled sections will not be allowed.

Reinforcement steel, structural steel shall be stored and stacked in such manner so as to facilitate easy identification, removal etc. The Contractor shall take proper care to prevent direct contact between the steel and the ground/water for which he shall provide necessary arrangement at his own cost including ensuring proper drainage of area to prevent water logging as per directions of the Engineer-In-Charge. If required, the reinforcement steel shall also be protected, by applying a coat of neat cement slurry over the bars for which no extra payment shall be made.

Test certificates for each consignment of steel shall be furnished and tests to be got carried out by the Contractor at his own cost from the authorized laboratory as per the directions of Engineer-In-Charge, before incorporating the materials in the work.

46.0 SCHEDULE OF QUANTITIES / BILL OF QUANTITIES

46.1 The quantities shown against the various items of work are only approximate quantities, which may vary as per the actual requirement at Site.

46.2 All items of work in the Bill of Quantities/schedule of quantities shall be carried out as per the CPWD/ MORTH (as the case may be) specifications, drawings and instructions of the ENGINEER-IN-CHARGE of EPI and the rates shall include for supply of required materials including proper storage, consumables, skilled & unskilled labour, supervision, tools, tackles, plant & machinery complete
as called for in the detailed specifications and conditions of the contract. No item, which is not covered in the Bill of Quantities, shall be executed by the Contractor without the approval of EPI. In case any Extra/Substituted item is carried out without specific-approval, the same will not be paid.

47.0 ANTI-TERMITE TREATMENT & WATER PROOF TREATMENT

47.1 Pre-construction treatment shall be carried out in co-ordination with the building work and shall be executed in such a manner that the civil works are not hampered or delayed by the anti-termite treatment. The treatment shall be carried out as detailed in BIS: 6313 (Part-II) latest revision. The waterproof treatment shall be of type and specifications as given in the schedule of quantities.

47.2 The treatment against water-proofing of basement, roofs, water retaining areas and termite infestation shall be and remain fully effective for a period of not less than 10(Ten) years to be reckoned from the date of expiry of the Defect Liability period, prescribed in the contract. At any time during the said guarantee period if EPI finds any defects in the said treatment or any evidence of re-infestation, dampness, leakage in any part of buildings or structure and notifies the Contractor of the same, the Contractor shall be liable to rectify the defect or give re-treatment at his own cost and shall commence the work or such rectification or re-treatment within seven days from the date of issue of such letter to him. If the Contractor fails to commence such work within the stipulated period, EPI may get the same done by another agency at the Contractor’s cost and risk and the decision of the Engineer-In-Charge of EPI for the cost payable by the Contractor shall be final and binding upon him.

47.3 Re-treatment if required shall be attended to and carried out by the Contractor within seven days of the notice from Engineer-In-Charge of EPI.

47.4 EPI reserves the right to get the quality of treatment checked in accordance with recognized test methods and in case it is found that the chemicals with the required concentration and rate of application have not been applied, or the water proof treatment is not done as per specifications, the Contractor will be required to do the re-treatment in accordance with the required concentration & specifications at no extra cost failing which no payment for such work will be made. The extent of work thus rejected shall be determined by EPI.

47.5 Water proofing and anti-termite treatment shall be got done through approved / specialized agencies only with prior approval of Engineer-In-Charge.

47.6 The Contractor shall make such arrangement as may be necessary to safeguard the workers and residents of the building against any poisonous effect of the chemicals used during the execution of the work.

47.7 During the execution of work, if any damage shall occur to the treatment already done, either due to rain or any other circumstances, the same shall be rectified and made good to the entire satisfaction of Engineer-In-Charge by the Contractor at his cost.
47.8 The Contractor shall make his own arrangement for all equipments required for the execution of the job.

47.9 The Contractor shall execute Guarantee Bond in the prescribed form as appended for guaranteeing the anti-termite treatment and waterproof treatment.

48.0 INDIAN STANDARDS

Wherever any reference is made to any IS in any particular specifications, Drawings or Bill of Quantities, it means the Indian Standards editions with the amendments current at the last date of receipt of Tender Documents.

49.0 CENTERING & SHUTTERING

Marine plywood only or steel plates of minimum thickness as approved by Engineer-In-Charge shall be used for formwork. The shuttering plates shall be cleaned and oiled after every repetition and shall be used only after obtaining approval of EPI's Engineers at Site. The number of repetitions allowed for plywood and steel shuttering shall be at the discretion of Engineer-In-Charge of EPI depending upon the condition of shuttering surface after each use and the decision of ENGINEER-IN-CHARGE in this regard shall be final and binding on the Contractor. No claim whatsoever on this account shall be admissible.

50.0 CONTROLLED MATERIALS

50.1 The following Controlled materials shall be brought to Site after the approval of EPI.
   a) Water proofing compound.
   b) Cement
   c) Steel
   d) Primer/ Paints/ Varnish etc.
   e) Bitumen
   f) Chemical for anti termite treatment
   g) Any other materials as per discretion of EPI.

50.2 The quantity of Controlled materials shall be measured and recorded in the Measurement books and signed by the Contractor and the Engineer-In-Charge as a check to ensure that the required quantities as required for execution of works as per specifications have been brought to Site for incorporation in the work.

50.3 Controlled materials brought at Site shall be stored as directed by EPI and those already recorded in Measurement book, shall be suitably marked for identification.

50.4 The Contractor shall ensure that the Controlled materials are brought to Site in original sealed containers or packing bearing manufacturer’s markings and
brands (except where the quantity required is a fraction of the smallest packing). Materials not complying with this requirement shall be rejected. The empty containers of such Controlled materials shall not be destroyed/disposed-off without the written permission of EPI.

50.5 The Contractor shall produce receipted vouchers showing quantities of the materials to satisfy Engineer-In-Charge that the materials comply with the specifications. These vouchers shall be endorsed, dated and initialed by Engineer-In-Charge giving the contract number and name of work and a certified copy of each such voucher signed both by EPI and the Contractor shall be kept on record.

50.6 When the cost of each category of materials is less than Rs.5000/- production of vouchers may not be insisted upon if EPI is otherwise satisfied with the quality and quantity of materials.

51.0 RECORDS OF CONSUMPTION OF CEMENT & STEEL

51.1 For the purpose of keeping a record of cement and steel received at Site and consumption in works, the Contractor shall maintain a properly bound register in the form approved by EPI, showing columns like quantity received and used in work and balance in hand etc. This register shall be signed daily by the Contractor's representative and EPI's representative.

51.2 The register of cement & steel shall be kept at Site in the safe custody of EPI's Engineer during progress of the work. This provision will not, however, absolve the Contractor from the quality of the final product.

51.3 In case cement or steel quantity consumed is lesser as compared to the theoretical requirement of the same as per CPWD/MORTH (as the case may be) specifications/norms, the work will be devalued and/or a penal rate (i.e. double the rate at which cement/steel purchased last) recovery for lesser consumption of cement/steel shall be made in the item rates of the work done subject to the condition that the tests results fall within the acceptable criteria as per CPWD/MORTH (as the case may be) specifications otherwise the work shall have to be dismantled and redone by the Contractor at no extra cost.

In case of cement, if actual consumption is less than 98% of the theoretical consumption, a recovery shall be effected from the Contractor's dues at the penal rate for the actual quantity that is lower than 98% of theoretical consumption.

52.0 MATERIALS AND SAMPLES

52.1 The materials/products used on the works shall be one of the approved make/brands out of list of manufacturers/brands/makes given in the Tender Documents. The Contractor shall submit samples/specimens out of approved makes of materials/products to the Engineer-In-Charge for prior approval. In
exceptional circumstances Engineer-In-Charge may allow alternate equivalent makes/ brands of products/ materials at his sole discretion. The final choice of brand/ make shall remain with the Engineer-In-Charge, whose decision in this matter shall be final and binding and nothing extra on this account shall be payable to the Contractor.

In case single brand/ make is mentioned, other equivalent makes/ brands may be considered by the Engineer-In-Charge with prior approval. In case of variance in CPWD/ IS/BIS Specifications from approved products/ makes specification, the specification of approved product/ make shall prevail for which nothing shall be paid extra to the Contractor.

In case no make or brand of any materials, articles, fittings and accessories etc. is specified, the same shall comply with the relevant Indian Standard Specifications and shall bear the ISI/BIS mark. The Engineer of EPI and the Owner shall have the discretion to check quality of materials and equipments to be incorporated in the work, at source of supply or site of work and even after incorporation in the work. They shall also have the discretion to check the workmanship of various items of work to be executed in this work. The Contractor shall provide the necessary facilities and assistance for this purpose.

52.2 The above provisions shall not absolve the Contractor from the quality of final product and in getting the material and workmanship quality checked and approved from the Engineer-In-Charge of EPI.

52.3 The Contractor shall well in advance, produce samples of all materials, articles, fittings, accessories etc. that he proposes to use and get them approved in writing by EPI. The materials articles etc. as approved shall be labelled as such and shall be signed by EPI and the Contractor’s representative.

52.4 The approved samples shall be kept in the custody of the Engineer- in-Charge of EPI till completion of the work. Thereafter the samples except those destroyed during testing shall be returned to the Contractor. No payment will be made to the Contractor for the samples or samples destroyed in testing.

52.5 The brands of all materials, articles fittings etc. approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded in the Site Order Book.

52.6 The Contractor shall set up and maintain at his cost, a field testing laboratory for all day-to-day tests at his own cost to the satisfaction of the Engineer-In-Charge. This field testing laboratory shall be provided with equipment and facilities to carry out all mandatory field tests as per CPWD/MORTH (as the case may be) specifications. The laboratory building shall be constructed and installed with the appropriate facilities; Temperature and humidity controls shall be available wherever necessary during testing of samples.

All equipments shall be provided by the Contractor so as to be compatible with the testing requirements specified. The Contractor shall maintain all the equipments in good working condition for the duration of the contract.
The Contractor shall provide approved qualified personnel to run the laboratory for the duration of the Contract. The number of staff and equipment available must at all times be sufficient to keep pace with the sampling and testing programme as required by the Engineer-In-Charge.

The Contractor shall fully service the site laboratory and shall supply everything necessary for its proper functioning, including all transport needed to move equipment and samples to and from sampling points on the Site, etc.

The Contractor shall re-calibrate all measuring devices whenever so required by the Engineer-In-Charge and shall submit the results of such measurements without delay.

All field tests shall be carried out in the presence of EPI’s representative. All costs towards samples, materials, collection, transport, manpower, testing, including concrete mix-design etc. shall be borne by the Contractor and are deemed to be included in the rates quoted by him in the Bill of Quantities.

53.0 TESTS AND INSPECTION

53.1 The Contractor shall carry out the various mandatory tests as per specifications and the technical documents that will be furnished to him during the performance of the work. All the tests on materials, as recommended by CPWD, MORTH (as the case may be) and relevant Indian Standard Codes or other standard specifications (including all amendments current at the last date of submission of Tender Documents) shall be got carried out by the Contractor at the field testing laboratory or any other recognized institution/ laboratory, at the direction of EPI. All testing charges, expenses etc. shall be borne by the Contractor. All the tests, either on the field or outside laboratories concerning the execution of the work and supply of materials shall be got carried out by the Contractor or EPI at the cost of the Contractor.

53.2 WORKS TO BE OPEN TO INSPECTION

All works executed or under the course of execution in pursuance of this contract shall at all times be open to inspection and supervision of EPI. The work during its progress or after its completion may also be inspected, by Chief Technical Examiner of Government of India (CTE) and/or an inspecting authority of State Government of State in which work is executed and/or by third party checks by Owner/ Clients. The compliance of observations/ improvements as suggested by the inspecting officers of EPI/CTE/ State authorities/ Owners shall be obligatory on the part of the Contractor at the cost of Contractor.

54.0 BORROW AREAS

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

55.0 BITUMEN WORK

The Contractor shall be responsible for arranging Bitumen/Tar of required grade from source to be approved by the Engineer-In-Charge. No Bitumen work shall be carried out on wet surface or in rainy conditions.

56.0 CARE OF WORKS

From the commencement to the completion of works and handing over, the Contractor shall take full responsibility for care of all the works and in case of any damage/loss to the works or to any part thereof or to any temporary works due to lack of precautions or due to negligence on part of Contractor, the same shall be made good by the Contractor at his own cost.

57.0 WORK IN MONSOON AND DEWATERING

The execution of the work may entail working in the monsoon also. The Contractor must maintain labour force as may be required for the job and plan and execute the construction and erection according to the prescribed schedule. No special/ extra rate will be considered for such work in monsoon. The Contractor’s rate shall be considered inclusive of cost of dewatering required, if any and no extra rate shall be payable on this account.

58.0 NO COMPENSATION FOR FORECLOSURE/CANCELLATION/ REDUCTION OF WORKS

If at any time after the commencement of the work EPI shall for any reason whatsoever is required to abandon the work or does not require the whole work thereof as specified in the Tender to be carried out, the Engineer-In-Charge shall give notice in writing of the fact to the Contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out or on foreclosure, neither shall he have any claim for compensation by reason of any alterations having been made in the original Specifications, Drawings, Designs and Instructions which shall involve any curtailment of the work as originally contemplated.

Provided that the Contractor shall be paid the charges on the cartage only of materials actually and bonafide brought to the Site of the work by the Contractor and rendered surplus as a result of the abandonment or curtailment of the work or any portion thereof and then taken back by the Contractor, provided however, that the Engineer-In-Charge shall have in all such cases the option of taking over all or any such materials at their purchase price or at local current rates whichever may be less. In the case of such stores having been issued by EPI
and returned by the Contractor to EPI, credit will be given to him by the Engineer-
In-Charge at rates not exceeding those at which they were originally issued to
him after taking into consideration any deduction for claims on account of any
deterioration or damage while in the custody of the Contractor and in this respect
the decision of the Engineer-In-Charge shall be final.

59.0 RESTRICTION ON SUBLETTING

59.1 The Contractor shall not sublet or assign the whole or part of the works except
where otherwise provided, by the contract and even then only with the prior
written consent of EPI and such consent if given shall not relieve the Contractor
from any liability or obligation under the contract and he shall be responsible for
the acts, defaults or neglects of any sub-Contractor, his agents, servants or
workmen as full as if they were the acts, defaults or neglects of the Contractor,
his agent, servants or workmen provided always that the provision of labour on
piece work basis shall not be deemed to be a subletting under this clause.

59.2 The Contractor may entrust specialist items of works to the agencies specialized
in the specific trade. The Contractor shall give the names and details of such firm
whom he is going to employ for approval of EPI. These details shall include the
expertise, financial status, technical manpower, equipment, resources and list of
works executed and on hand of the specialist agency. Specialist agency shall be
engaged only after obtaining written approval of the Engineer-In-Charge.

60.0 PROHIBITION OF UNAUTHORISED CONSTRUCTION & OCCUPATION

No unauthorized buildings, structures should be put up by the Contractor
anywhere on the project Site, neither any building built by him shall be un-
authorizedly occupied by him or his staff.

61.0 CO-ORDINATION WITH OTHER AGENCIES

Work shall be carried out in such a manner that the work of other Agencies
operating at the Site is not hampered due to any action of the Contractor. Proper
Co-ordination with other Agencies will be Contractor's responsibility. In case of
any dispute the decision of EPI shall be final and binding on the Contractor. No
claim whatsoever shall be admissible on this account.

62.0 SETTING OUT OF THE WORKS

62.1 The Contractor shall be responsible for the true and proper setting out of the
works and for the correctness of the position, levels, dimensions and alignment
of all parts of the works. If at any time during the progress of works, shall any
error appear or arise in the position, levels, dimensions or alignment of any part
of the works, the Contractor shall at his own expenses rectify such error to the
satisfaction of Engineer-in-charge. The checking of any setting out or of any line
or level by the engineers of EPI shall not in any way relieve the Contractor of his
responsibility for the correctness.
62.2 Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural, Plumbing and other services Drawings.

63.0 NOTICE BEFORE COVERING UP THE WORK

The Contractor shall give not less than seven days notice before covering up or otherwise placing beyond the reach of measurement any work, to the Engineer-In-Charge in order that the same may be inspected and measured. If any work is covered up or placed beyond the reach of Inspection/measurement without such notice to the Engineer-In-Charge or his consent being obtained, the same shall be uncovered at the Contractors expenses and he shall have to make it good at his own expenses.

64.0 SITE CLEARANCE

64.1 The Contractor shall ensure that the working Site is kept clean and free of obstructions for easy access to job Site and also from safety point of view. Before handing over the work to EPI the Contractor shall remove all temporary structures like the site offices, cement godown, stores, labour hutments etc., scaffolding rubbish, left over materials tools and plants, equipments etc., clean and grade the Site to the entire satisfaction of the Engineer-In-Charge. If this is not done the same will be got done by EPI at his risk and cost.

64.2 The Contractor shall clean all floors, remove cement/lime/paint drops and deposits, clean joinery, glass panes etc., touching all painter’s works and carry out all other necessary items of works to make the premises clean and tidy before handing over the building, and the rates quoted by the Contractor shall be deemed to have included the same.

65.0 VALUABLE ARTICLES FOUND AT SITE

All gold, silver and other minerals of any description and all precious stones, coins, treasure, relics, antiques and all other similar things which shall be found in, under or upon the Site, shall be the property of the Owner/Government and the Contractor shall duly preserve the same to the satisfaction of Engineer-In-Charge and shall from time to time deliver the same to such person or persons indicated by EPI.

66.0 MATERIALS OBTAINED FROM DISMANTLEMENT TO BE OWNER’S PROPERTY

All materials like stone, boulders and other materials obtained in the work of dismantling, excavation etc. will be considered Owner/government property and may be issued to the Contractor by the Owner/EPI, if required for use in this work at rates approved by EPI or the Contractor may be asked to dispose off these items at his cost.

67.0 SET-OFF OF CONTRACTOR’S LIABILITIES

EPI shall have the right to deduct or set off the expenses incurred or likely to be incurred by it in rectifying the defects and/or any claim under this agreement.
against the Contractor from any or against any amount payable to the Contractor under this agreement including Retention Money and proceeds of Security Deposit cum Performance Guarantee and from any other contract being executed by the Contractor for EPI.

68.0 MATERIALS PROCURED WITH THE ASSISTANCE OF EPI

If any material for the execution of this contract is procured with the assistance of EPI either by issue from its stores or purchase made under orders or permits or licences obtained by EPI, the Contractor shall hold and use the said materials economically and solely for the purpose of this contract and shall not dispose them without the written permission of Engineer-In-Charge. The Contractor, if required by EPI, shall return all such surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination on whatsoever reason, on being paid or credited such price as EPI shall determine having due regard to the conditions of materials.

69.0 ALTERATION IN SPECIFICATION, DESIGN & DRAWING

69.1 The Engineer-In-Charge shall have power to make any alterations in, omissions from, additions to or substitutions for, the original Specifications, Drawings, Designs and Instructions that may appear to him to be necessary during the progress of the work, and the Contractor shall carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer-In-Charge and such alterations, omissions, additions, or substitutions shall not invalidate the contract and any altered, additional or substituted work which the Contractor may be directed to do in the manner above specified as part of the work shall be carried out by the Contractor on the same conditions in all respects on which he agreed to do the main work.

The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work price bears to the original contract work price, and the certificate of the Engineer-In-Charge shall be conclusive as to such proportion. Over and above this, a further period to the extent of 25 percent of such extension shall be allowed to the Contractor.

The rates for such additional, altered or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order:

i) If the rates for the additional, altered or substituted work are specified in the contract for the work, the Contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the contract for the work.

ii) If the rates for the additional, altered or substituted work are not specifically provided in the contract for the work, the rates will be derived from the rates for a nearest similar item of work as are specified in the contract for the work. In case of composite tenders where two or more
schedule of quantities/ Bill of Quantities form part of the contract, the rates shall be derived from the nearest similar item in the schedule of quantities/Bill of Quantities of the particular part of work in which the deviation is involved failing that from the lowest of the nearest similar item in other schedule of quantity. The opinion of the Engineer-In-Charge as to whether or not the rate can be reasonably so derived from the item in this contract will be final and binding on the Contractor.

iii) If the altered, additional or substituted work includes any work for which no rate is specified in the contract for the work and which cannot be derived in the manner specified in sub para (i) and (ii) above from the similar class of work in the contract then such work shall be carried out at the rates entered in the Schedule of Rates (as mentioned in “Memorandum” to the “Form of Tender” for Civil/ Sanitary Works) minus/plus the percentage which the tendered amount of scheduled items bears with the estimated amount of schedule items based on the Schedule of Rates ( as mentioned in “Memorandum” to the “Form of Tender” for Civil/ Sanitary Works ). The scheduled items mean the items appearing in the Schedule of Rates (as mentioned in “Memorandum” to the “Form of Tender” for Civil/ Sanitary Works), which shall be applicable in this clause. This clause will apply mutatis mutandis to electrical work except that Electrical Schedule of Rates as mentioned in “Memorandum” to the “Form of Tender” will be considered in place of Civil/ Sanitary works Schedule of rates as mentioned in “Memorandum” to the “Form of Tender”.

iv) If the rates for the altered, additional or substituted work cannot be determined in the manner specified in sub-clauses (i) to (iii) above, then the Contractor shall, within 7 days of the date of receipt of order to carry out the work, inform the Engineer-In-Charge the rates which he intends to charge for such class of work, supported by analysis of the rate or rates claimed, and the Engineer-In-Charge shall determine the rate or rates on the basis of prevailing market rates of the material, Labour, T&P etc. plus 10% (Ten percent) to cover the Contractors supervision, overheads and profit and pay the Contractor accordingly. The opinion of the Engineer-In-Charge as to the current market rates of materials and quantum of labour involved per unit of measurements will be final and binding on the Contractor.

However, the Engineer-In-Charge, by notice in writing, will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner, as he may consider advisable. But under no circumstances, the Contractor shall suspend the work on the plea of non-settlement of rates of items falling under the clause.

v) Except in case of items relating to foundations, provisions contained in sub-clauses (i) to (iv) above shall not apply to contract, altered or substituted items as individually exceed the ‘deviation limit’ of plus/minus 25% (Twenty Five Percent) subject to the following:-

(a) Deviation limit shall apply to individual items.
(b) The value of additions of items, of any individual trade not already included in the contract, shall not exceed 20% of the Tendered value of work, subject to overall deviation limit as given above.

Provided further that in case where the original item is substituted, the Substituted Item shall be deemed to have replaced the original item in the contract itself to that extent and above provisions pertaining to the deviations shall apply with respect to such Substituted Item and not the original item.

NOTE: Individual trade means the trade section to which Bill of Quantities annexed to the agreement has been divided or in the absence of any such division the individual section of the MORTH/C.P.W.D. (as the case may be) Scheduled of rates specified above, such as excavation and earthwork, Concrete, wood work and joinery, etc.

The rate of any such work except the items relating to foundations which is in excess of the deviation limit and deviation in quantities of AHR items on plus side as contained in Clause 9.2(i) shall be determined in accordance with the provisions contained in Clause 69.2.

69.2 In the case of contract items, substituted items, Contract cum substituted items or additional items which exceed the limits laid down in sub para (v) of condition 69.1 above (except the items relating to foundation work, which the Contractor is required to do under Clause 69.1 above and deviation in quantities of AHR items on plus side as contained in clause 9.2 (i) ), the Contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis, for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities or those derived in accordance with the provisions of sub para (i) to (iii) of conditions 69.1 by more than five percent, the Engineer-In-Charge shall within three months of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the Contractor, determine the rates on the basis of the market rates and if the rates so determined exceed the rates specified in the schedule of quantities or those derived in accordance with the provisions of sub paras (i) to (iii) of condition 69.1 by more than five percent, the contract shall be paid in accordance with the rates determined. In the event of the Contractor failing to claim revision of rates within the stipulated period, or if the rates determined by the Engineer-In-Charge within the period of three months of receipt of the claims supported by analysis are within five percent of the rates specified in the schedule of quantities or of those determined in accordance with the provisions of sub-para (i) to (iii) of condition 69.1, the Engineer-In-Charge shall make payment at the rates as specified in the schedule of quantities or those already determined under sub para (i) to (iii) of condition 69.1 for the quantities in excess of the limits laid down in sub para (v) of condition 69.1.

69.3 The provisions of the proceeding paragraph shall apply to the decrease in the rates of items for the work in excess of the limits laid down in sub para (v) of
condition 69.1 provided that such decrease is more than five percent of rates specified in the schedule of quantities or those derived in accordance with the provisions of sub para (i) to (iii) of condition 69.1 and the Engineer-In-Charge may after giving notice to the Contractor within two months of receipt of order by the Contractor or occurrence of the excess and after taking into consideration any reply received from him within fifteen days of receipt of the notice revise the rates for the work in question within two months of expiry of the said period of fifteen days having regard to the market rates.

69.4 The Contractor shall send to the Engineer-In-Charge once every three months an up to date account giving complete details of all claims for additional payments to which the Contractor may consider himself entitled and of all additional work ordered by the Engineer-In-Charge which he has executed during the preceding quarter failing which the Contractor shall be deemed to have waived his right.

69.5 For the purpose of operation of clause 69.1 (v) the following works shall be treated as works relating to foundation:-

  i) For buildings, compound walls plinth level or 1.2 meters (4 feet) above ground level whichever is lower excluding items of flooring and D.P.C. but including base concrete below the floors.

  ii) For abutments, piers, retaining walls of culverts and bridges, walls of water reservoirs the bed of floor level.

  iii) For retaining walls where floor level is not determinate 1.2 meters above the average ground level or bed level.

  iv) For Roads all items of excavation and filling including treatment of sub base and soiling work.

  v) For water supply lines, sewer lines, under-ground storm water drains and similar works. All items of work below ground level except items of pipe work, masonry work.

  vi) For open storm water drains, all items of work except lining of drains.

70.0 ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK

If it shall appear to the Engineer-In-Charge or his authorized subordinate in charge of the work or to the Chief Technical Examiner or to any other inspecting agency of Government/ State Government/ Owner where the work is being executed, that any work has been executed with unsound, imperfect, or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the Contractor shall on demand in writing which shall be made within six months of the completion of the work from the ENGINEER-IN-CHARGE specifying the work, materials or articles complained of notwithstanding that the same may have been passed, Certified and paid for forthwith rectify, or remove and
reconstruct the work so specified in whole or in part as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-In-Charge in his demand aforesaid, then the Contractor shall be liable to pay compensation at the rate of one percent of the estimated amount put to tender for every day not exceeding ten days, while his failure to do so shall continue and in the case of any such failure, the Engineer-In-Charge may rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of as the case may be at the risk and expense in all respects of the Contractor.

71.0 POSSESSION PRIOR TO COMPLETION

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

71.2 When the whole of the works or the items or the groups of items of work for which separate periods of completion have been specified have been completed the Contractor will give a notice to that effect to the Engineer in writing. The Engineer shall within 15 days of the date of receipt of such notice inspect the works and either the Engineer-In-Charge issues to the Contractor a completion certificate stating the date on which in his opinion the works were completed in accordance with the contract or gives instructions in writing to the Contractor specifying the balance items of work which are required to be done by the Contractor before completion certificate could be issued. The Engineer-In-Charge shall also notify the Contractor of any defect in the works affecting completion.

71.3 The Contractor shall during the course of execution prepare and keep updated a complete set of ‘as built’ drawings to show each and every change from the Contract Drawings, changes recorded shall be countersigned by the Engineer-In-Charge and the Contractor. Four copies of ‘as built’ drawings shall be supplied to EPI by the Contractor within 30 days of the completion. All costs incurred in this respect shall be borne by the Contractor only.

72.0 COMPENSATION FOR DELAY AND REMEDIES

72.1 If the Contractor fails to maintain the required progress in terms of clause 72.4 or relevant clause of Additional Conditions of Contract, to complete the work and clear the Site on or before the completion date or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to EPI on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below or such smaller amount as the Engineer in charge (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / week (as
applicable) that the progress remains below that specified in Clause 72.4.1 or the
relevant clause in Additional Conditions of Contract or that the work remains
incomplete. This will also apply to items or group of items for which a separate
period of completion has been specified.

i) For works with completion period not exceeding
3 month (as originally stipulated) @ 1% per day

ii) For works with completion period exceeding
3 months (as originally stipulated) @ 1% per week or part thereof

Provided always that the total amount of compensation for delay to be paid under
this Condition shall not exceed 10% of the Tendered Value of work or of the
Tendered Value of the item or group of items of work for which a separate period
of completion is originally given.

The amount of compensation may be adjusted or set-off against any sum
payable to the Contractor under this or any other contract with EPI even after
completion of the work.

72.2 CANCELLATION / DETERMINATION OF CONTRACT IN FULL OR PART

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

i) If the Contractor having been given by the Engineer-In-Charge a notice in
writing to rectify, reconstruct or replace any defective work or that the
work is being performed in an inefficient or otherwise improper or un-
workmanlike manner shall omit to comply with the requirement of such
notice for a period of seven days thereafter; or

ii) If the Contractor has, without reasonable cause, suspended the progress
of the work or has failed to proceed with the work with due diligence so
that in the opinion of the ENGINEER-IN-CHARGE (which shall be final
and binding) he will be unable to secure completion of the work by the
date for completion and continues to do so after a notice in writing of
seven days from the Engineer-In-Charge; or

iii) If the Contractor fails to complete the work within the stipulated date or
items of work with individual date of completion, if any stipulated, on or
before such date(s) of completion and does not complete them within the
period specified in a notice given in writing in that respect by the
Engineer-In-Charge; or

iv) If the Contractor persistently neglects to carry out his obligations under
the contract and / or commits default in complying with any of the terms
and conditions of the contract and does not remedy it or take effective
steps to remedy it within 7 days after a notice in writing is given to him in
that respect by the Engineer-In-Charge; or

v) If the Contractor shall offer or give or agree to give to any person in EPI
service or to any other person on his behalf any gift or consideration of
any kind as an inducement or reward for doing or forbearing to do or for
having done or forborne to do any action in relation to the obtaining or
execution of this or any other contract for EPI; or

vi) If the Contractor shall enter into a contract with EPI in connection with
which commission has been paid or agreed to be paid by him or to his
knowledge, unless the particulars of any such commission and the terms
of payment thereof have been previously disclosed in writing to the
Engineer-In-Charge; or

vii) If the Contractor shall obtain a contract with EPI as a result of wrong
tendering or other non-bona-fide methods of competitive tendering; or

viii) If the Contractor being an individual, or if a firm, any partner thereof shall
at any time be adjudged insolvent or have a receiving order or order for
administration of his estate made against him or shall take any
proceedings for liquidation or composition (other than a voluntary
liquidation for the purpose of amalgamation or reconstruction) under any
Insolvency Act for the time being in force or make any conveyance or
assignment of his effects or composition or arrangement for the benefit of
his creditors or purport so to do, or if any application be made under any
Insolvency Act for the time being in force for the sequestration of his
estate or if a trust deed be executed by him for benefit of his creditors; or

ix) If the Contractor being a company, shall pass a resolution or the Court
shall make an order for the winding up of the company, or a receiver or
manager on behalf of the debenture holders or otherwise shall be
appointed or circumstances shall arise which entitle the Court or
debenture holders to appoint a receiver or manager; or

x) If the Contractor shall suffer an execution being levied on his goods and
allow it to be continued for a period of 21 days; or

xi) If the Contractor assigns, transfers, sublets (engagement of labour on a
piece-work basis or of the labour with materials not to be incorporated in
the work, shall not be deemed to be subletting) or otherwise parts with or
attempts to assign, transfer sublet or otherwise parts with the entire works
or any portion thereof without and prior written approval of the Engineer-
In-Charge.

When the Contractor has made himself liable for action under any of the clauses
aforesaid, the Engineer-In-Charge may without prejudice to any other right or
remedy which shall have accrued or shall accrue hereafter to EPI, by a notice in
writing to cancel the contract as a whole or only such items of work in default from the Contract.

The Engineer-In-Charge shall on such cancellation by EPI have powers to:

a) Take possession of Site and any materials, Construction Plant & machinery, implements, stores, etc. thereon; and/ or

b) Carry out the incomplete work by any means at the risk and cost of the Contractor; and/ or

c) To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the Contractor under the hand of the Engineer-In-Charge shall be conclusive evidence). Upon such determination or rescission the full Retention Money recovered by EPI under the contract and Security Deposit cum Performance Guarantee shall be liable to be forfeited and un-used materials, construction plant & machinery, implements, temporary buildings, etc. shall be taken over and shall be absolutely at the disposal of EPI. If any portion of the Retention Money has not been received or recovered by EPI from RA Bills, it would be called for and forfeited; and/ or

d) To employ labour and to supply materials, equipment to carry out the work or any part of the work debiting the Contractor with the cost of the labour and the price of the materials, equipment rentals (of the amount of which cost and price certified by the Engineer-In-Charge shall be final and conclusive) against the Contractor and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the Contractor under the terms of his contract. The certificate of the Engineer-In-Charge as to the value of the work done shall be final and conclusive against the Contractor provided always that action under the sub-clause shall only be taken after giving notice in writing to the Contractor. Provided also that if the expenses incurred by the EPI are less than the amount payable to the Contractor at his agreement rates, the difference shall not be paid to the Contractor; and/ or

e) After giving notice to the Contractor to measure up the work of the Contractor and to take such whole, or the balance or part thereof as shall be un-executed or delayed with reference to the General Conditions of Contract clause no. 72.4.1 and/ or relevant clause of Additional Conditions of Contract, out of his hands and to give it to another Contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original Contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Engineer-In-Charge shall be final and conclusive) shall be borne and paid by the original Contractor and may be deducted from any money due to him by EPI under his contract or on any other account whatsoever or from his Retention Money, Security Deposit cum Performance Guarantee or the proceeds of sales of unused materials, construction plants & machinery, implements temporary buildings etc. thereof or a sufficient part thereof as
the case may be. If the expenses incurred by EPI are less than the amount payable to the Contractor at his agreement rates, the difference shall not be paid to the Contractor; and/or

f) By a notice in writing to withdraw from the Contractor any items or items of work as the Engineer-In-Charge may determine in his absolute discretion and get the same executed at the risk and cost of the Contractor.

Any excess expenditure incurred or to be incurred by EPI in completing the works or part of the works or the excess loss or damages suffered or may be suffered by EPI as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to EPI in law be recovered from any moneys due to the Contractor on any account, and if such moneys are not sufficient the Contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the Contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-In-Charge shall have the right to sell any or all of the Contractors unused materials, Construction Plant, machinery, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the Contractor under the contract and if thereafter there be any balance outstanding from the Contractor, it shall be recovered in accordance with the provisions of the contract and law.

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

In the event of anyone or more of the above courses being adopted by the Engineer-In-Charge the Contractor shall have no claim to compensation whatsoever for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid the Contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-In-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified. Provided further that if any of the recoveries to be made, while taking action as per (d) and/or (e) above, are in excess of the Retention Money & Security Deposit cum Performance Guarantee forfeited, these shall be limited to the amount by which the excess cost incurred by the EPI exceeds the Retention Money & Security Deposit cum Performance Guarantee so forfeited.
72.3 CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION NOT TAKEN

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

72.4 TIME ESSENCE OF CONTRACT & EXTENSION FOR DELAY

The time allowed for execution of the Works as specified in the terms of contract or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence from the 10th Day or such time period as mentioned in letter of Intent after the date on which the Engineer-In-Charge issues written orders to commence the work. If the Contractor commits default in commencing the execution of the work as aforesaid, the Executing Agency shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money absolutely.

72.4.1 Within 10 (Ten) days of Letter of Intent, the Contractor shall submit a Time and Progress Chart (CPM/ PERT/ Quantified Bar Chart) and get it approved by the Engineer-In-Charge. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-In-Charge and the Contractor within the limitations of time stipulated in the Contract documents, and further to ensure good progress during the execution of the work, the Contractor shall in all cases in which the time allowed for any work exceeds one month (save for
special jobs for which a separate program has been agreed upon) complete 1/8\textsuperscript{th} of the whole of work before 1/4\textsuperscript{th} of the whole time allowed in the contract has elapsed, 3/8\textsuperscript{th} of the work before one half of such time has elapsed and 3/4\textsuperscript{th} of the work before 3/4\textsuperscript{th} of such time has elapsed. The physical report including photographs shall be submitted by the Contractor on the prescribed format & the intervals (not exceeding a month) as decided by the Engineer in Charge. The compensation for delay as per clause 72.1 shall be leviable at intermediate stages also, in case the required progress is not achieved to meet the above time deadlines of the completion period and/ or milestones of time and progress chart, provided always that the total amount of Compensation for delay to be paid under this condition shall not exceed 10\% (Ten Percent) of the tendered value of work”.

72.4.2 If the work(s) be delayed by:

i) force-majeure or
ii) abnormally bad weather, or
iii) serious loss or damage by fire, or
iv) civil commotion of workmen, strike or lockout, affecting any or the trades employed on the work, or
v) delay on the part of other Contractors or tradesmen engaged by Engineer-In-Charge in executing work not forming part of the Contract, or
vi) non-availability of stores, which are responsibility of EPI or,
vi) non-availability or break down of tools and plant to be supplied or supplied by EPI or,
viii) any other cause which, in the absolute discretion of EPI, is beyond the Contractor’s control,

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

72.4.3 Request for extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired. In any such case EPI may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Contractor by the Engineer-In-Charge in writing, within 3 months of the date of receipt of such request. Non-application by the Contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-In-Charge and the extension of time so given by the Engineer-In-Charge shall be binding on the Contractor.

73.0 WITHHOLDING AND LIEN IN RESPECT OF SUMS DUE FROM CONTRACTOR

73.1 Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the Contractor, EPI shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security,
if any, deposited by the Contractor and for the purpose aforesaid, EPI shall be entitled to withhold the Retention Money, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the Contractor, EPI shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the Contractor under the same contract or any other contracts pending finalization or adjudication of any such claim.

73.2 It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-In-Charge or EPI will be kept withheld or retained as such by the Engineer-In-Charge or EPI till the claim arising out of or under the contract is determined by the Arbitrator / Competent Court and that the Contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the Contractor. For the purpose of this clause, where the Contractor is a sole proprietor or a partnership firm or a limited company, etc. the Engineer-In-Charge or EPI shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to proprietor /partnership firm/limited company, as the case may be whether in his individual capacity or otherwise.

EPI shall have the right to cause an audit and technical examination of the works and the final bills of the Contractor including all supporting vouchers, abstract, etc, to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the Contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the Contractor shall be liable to refund the amount of over-payment and it shall be lawful for EPI to recover the same from him in the manner prescribed in sub-clause (I) of this clause or in any other manner legally permissible; and if it is found that the Contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by EPI to the Contractor, without any interest thereon whatsoever.

73.3 LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS

Any sum of money due and payable to the Contractor (including the Retention Money & Security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-In-Charge or by EPI against any claim of the Engineer-In-Charge or EPI in respect of payment of a sum of money arising out of or under any other contract made by the Contractor with the Engineer-In-Charge or EPI.

It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-In-Charge or EPI will be kept withheld or retained as such by the Engineer-In-Charge or EPI or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the Arbitrator or Competent court as the case may be, and that the Contractor shall have no claim for interest or damages whatsoever on this account or on any
other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the Contractor.

74.0 DEFECTS LIABILITY PERIOD

The Contractor shall be responsible for the rectification of defects in the works for a period of twelve months from the date of taking over of the works by the Owner/Client. Any defects discovered and brought to the notice of the Contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the Contractor fails to carry out these rectifications, the same may without prejudice to any other right or remedy available, be got rectified by EPI at the cost and expense of the Contractor.

75.0 FORCE MAJEURE

Any delay or failure of the performance of either party hereto shall not constitute default hereunder to give rise to any claims for damages, if any to the Extent such delay or failure of performance is caused by occurrences such as Acts of God or the public enemy, expropriation, compliance with any order or request of Government authorities/ Courts, acts of war, rebellions, sabotage fire, floods, illegal strikes, or riots (other than Contractor's employees). Only extension of time shall be considered for Force Majeure conditions as accepted by EPI. No adjustment in contract price shall be allowed for reasons of force majeure.

76.0 ARBITRATION

76.1 Before resorting to arbitration as per the clause given below, the parties if they so agree may explore the possibility of conciliation as per the provisions of Part-III of the Arbitration and Conciliation Act. 1996. When such conciliation has failed, the parties shall adopt the following procedure for arbitration:

i) Except where otherwise provided for in the contract, any disputes and differences relating to the meaning of the Specifications, Design, Drawings and Instructions herein before mentioned and as to the quality of workmanship or materials used in the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the Contract, Designs, Drawings, Specifications, Estimates, Instructions, or these conditions, or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the Sole Arbitration of the Chairman and Managing Director (CMD) of Engineering Projects (India) Limited (EPI), or any other person discharging the functions of CMD of EPI and if CMD or such person discharging the functions of CMD of EPI is unable to act, to the sole Arbitration of some other person appointed by CMD of EPI or such other person discharging the functions of CMD of EPI. There will be no objection if the arbitrator so appointed is an employee of Engineering Projects (I) Ltd. However, such an employee shall not have directly dealt with the said Contract or the works there under on behalf of EPI. Such Arbitrator shall be appointed within 30 days of the receipt of letter of invocation of arbitration duly satisfying the requirements of this clause.
ii) If the arbitrator so appointed resigns or is unable or unwilling to act due to any reason whatsoever, or dies, the Chairman & Managing Director aforesaid or in his absence the person discharging the duties of the CMD of EPI may appoint a new arbitrator in accordance with these terms and conditions of the contract, to act in his place and the new arbitrator so appointed may proceed from the stage at which it was left by his predecessor.

iii) It is a term of the contract that the party invoking the arbitration shall specify the dispute / differences or questions to be referred to the Arbitrator under this clause together with the amounts claimed in respect of each dispute.

iv) The Arbitrator may proceed with the arbitration ex-parte, if either party, in spite of a notice from the arbitrator, fails to take part in the proceedings.

v) The work under the contract shall continue as directed by the Engineer-In-Charge, during the arbitration proceedings.

vi) Unless otherwise agreed, the venue of arbitration proceedings shall be at the venue given in the ‘Memorandum' to the ‘Form of Tender’.

vii) The award of the Arbitrator shall be final, conclusive and binding on both the parties.

viii) Subject to the aforesaid, the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modifications or re-enactment thereof and the Rules made there under and for the time being in force shall apply to the arbitration proceedings and Arbitrator shall publish his Award accordingly.

NOTE

NOTWITHSTANDING ANYTHING CONTAINED HEREAFTER, THIS CLAUSE SHALL NOT BE APPLICABLE WHERE THE DISPUTE IS BETWEEN EPI AND ANOTHER CENTRAL PUBLIC SECTOR ENTERPRISE OR GOVT. OF INDIA DEPARTMENT, FOR WHICH A SEPARATE ARBITRATION CLAUSE IS PROVIDED VIDE CLAUSE NO. 76.2 GIVEN BELOW:

76.2 ARBITRATION BETWEEN CENTRAL PUBLIC SECTOR ENTERPRISES INTER SE / GOVERNMENT OF INDIA DEPARTMENTS/ MINISTRIES

i) In the event of any dispute or difference relating to the interpretation and application of the provisions of the contract, such dispute or difference shall be referred by either party to the arbitration as per the instructions (Office Memorandums / Circulars) issued by Govt. of India from time to time with regard to arbitration between one Government Department and another, one Government Department and a Public Sector Enterprise and Public Sector Enterprise inter se.

ii) Subject to any amendment that may be carried out by the Government of India from to time, the procedure to be followed in the arbitration shall be as is
contained in D.O. No. DPE/4(10)/2001-PMA-GL-I dated 22.01.2004 of Department of Public Enterprises, Ministry of Heavy Industries and Public Enterprises, Government of India or any modification issued in this regard.

76.3 JURISDICTION

The courts mentioned in the ‘Memorandum’ to the ‘Form of Tender’ alone will have jurisdiction to deal with matters arising from the contract, to the exclusion of all other courts.

77.0 SUSPENSION OF WORKS

(a) The Contractor shall, on receipt of the order in writing of the Engineer-In-Charge, suspend the progress of the works or any part thereof for such time and in such manner, as the Engineer-In-Charge may consider necessary for any of the following reasons:

i) On account of any default on part of the Contractor, or

ii) For proper execution of the works or part thereof for reason other than the default of the Contractor, or

iii) For safety of the works or part thereof.

The Contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-In-Charge.

(b) If the suspension is ordered for reasons (ii) and (iii) in sub-para (a) above, the Contractor shall be entitled to an extension of the time equal to the period of every such suspension plus 25%. No adjustment of contract price will be allowed for reasons of such suspension.

(c) In the event of the Contractor treating the suspension as an abandonment of the contract by EPI, he shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of the work in full but which he could not derive in consequence of the abandonment.

(d) The Contractor shall resume work in all earnestness after suspension has been lifted by EPI.

78.0 TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR

If the Contractor is an individual or a proprietorship concern and the individual or the proprietor dies then unless the Engineer-In-Charge is satisfied that the legal representatives of the individual Contractor or of the proprietor of the proprietary concern and in the case of partnership firm, the surviving partners, are capable of carrying out and completing the contract, the Engineer-In-Charge shall be entitled to cancel the contract as to its incompletely part without EPI being in any
way liable to payment of any compensation to the estate of the deceased Contractor and/or to surviving partners of the Contractor’s firm on account of cancellation of the contract. Such cancellation of Contract shall be with out prejudice to any of the rights & remedies available to the Engineer-In-Charge under the contract. The decision of the Engineer-In-Charge that the legal representatives of the deceased Contractor or the surviving partners of the Contractor’s firm cannot carry out and complete the contract shall be final and binding on the parties.

79.0 CLARIFICATION AFTER TENDER SUBMISSION

Tenderer’s attention is drawn to the fact that during the period, the bids are under consideration, the bidders are advised to refrain from contacting by any means, EPI and/or his employees/ representatives on matters related to the bid under consideration and that if necessary, EPI will obtain clarifications in writing or as may be necessary. The Tender evaluation and process of award of works is done by duly authorized Tender Scrutiny Committee and this committee is authorized to discuss and get clarification from the tenderers.

80.0 ADDENDA/ CORRIGENDA

Addenda/Corrigenda to the Tender Documents may be issued prior to the date of opening of the Tender to clarify or effect modification in specification and/or contract terms included in various Tender Documents. The tenderer shall suitably take into consideration such Addenda/Corrigenda while submitting his tender. The tenderer shall return such Addenda/ Corrigenda duly signed and stamped as confirmation of its receipt and submit alongwith the Tender Document. All Addenda/ Corrigenda shall be signed and stamped on each page by the tenderer and shall become part of the Tender and contract documents.

81.0 QUALITY ASSURANCE PROGRAMME

To ensure that the works/services under the scope of this contract are in accordance with the specifications, the Contractor shall adopt Quality Assurance Programme to control such activities at the necessary points. The Contractor shall prepare and finalize such Quality Assurance Programme within 15 days from letter of intent. EPI shall also carryout quality audit and quality surveillance of systems and procedures of Contractor’s quality control activities. A Quality Assurance Programme of Contractor shall generally cover the following:

a) His organization structure for the management and implementation of the proposed Quality Assurance Program.

b) Documentation control system.

c) The procedure for procurement of materials and source inspection.

d) System for site controls including process controls.

e) Control of non-conforming items and systems for corrective actions.

f) Inspection and test procedure for site activities.

g) System for indication and appraisal of inspection status.

h) System for maintenance of records.

i) System for handling, storage and delivery.
j) A quality plan detailing out quality practices and procedures, relevant standards and acceptance levels for all types of work under the scope of this contract.

All the quality reports shall be submitted by the Contractors in the formats appended hereto. Checklist enclosed here in this document shall be followed while carrying out Construction activities (items). If any item is not covered by the Checklist/ Formats appended hereto, the Format for the same may be developed and submitted to Engineer-In-Charge for approval and the same shall be adopted. These filled in formats shall be prepared in two copies and duly signed by representatives of Contractor and EPI. All the costs associated with printing of Formats and testing of materials required as per technical specifications or by Engineer-In-Charge shall deemed to be included in the Contractor’s quoted rates of various items of work in the Schedule/ Bill of Quantities.

82.0 APPROVAL OF TEMPORARY / ENABLING WORKS

The setting and nature of all offices, huts, access road to the work areas, and all other temporary works as may be required for the proper execution of the works shall be subject to the approval of the Engineer-In-Charge.

All the equipments, labour, material including cement, reinforcement and the structural steel required for the enabling/ temporary works associated with the entire Contract shall have to be arranged by the Contractor only. Nothing extra shall be paid to the Contractor on this account and the unit rates quoted by the Contractor for various items in the Bill of Quantities shall be deemed to include the cost of enabling works.

83.0 CONTRACT COORDINATION PROCEDURES, COORDINATION MEETINGS AND PROGRESS REPORTING

The Contractor shall prepare and finalize in consultation with EPI, a detailed contract coordination procedure within 15 days from the date of issue of Letter of Intent for the purpose of execution of the Contract.

The Contractor shall have to attend all the meetings at any place in India at his own cost with EPI, Owners/ Clients or Consultants of EPI/ Owner/ Client during the currency of the Contract, as and when required and fully cooperate with such persons and agencies involved during these discussions. The Contractor shall not deal in any way directly with the Clients/ Owners or Consultants of EPI/ Owner/ Clients and any dealing/ correspondence if required at any time with Clients/ Owners/ Consultants shall be through EPI only.

During the execution of the work, Contractor shall submit at his own cost detailed monthly progress report to the Engineer-In-Charge of EPI by 5th of every month. The format of monthly progress report shall be as approved by Engineer-In-Charge of EPI.

84.0 CONTRACT AGREEMENT
The Contractor shall enter into a Contract Agreement with EPI within 10 days of the date of Letter of Intent or within such extended time, as may be granted by EPI. The cost of stamp papers, stamp duty, registration, if applicable on the contract, shall be borne by the Contractor. In case, the Contractor does not sign the agreement as above or does not start the work within 10 days of the issue of letter/telegram of intent, his earnest money is liable to be forfeited and letter of intent consequently will stand withdrawn.

85.0 MANNER OF EXECUTION OF AGREEMENT

i. The agreement as per prescribed Performa as enclosed to the Additional Conditions of Contract shall be signed at the office of EPI within 10 days from the date of issue of Letter of Intent. The Contractor shall provide for signing of the Contract, appropriate Power of Attorney in favour of the authorised representative duly attested by notary Public and the requisite documents/materials. Till a formal contract is prepared and executed, the Letter of Intent read in conjunction with the Bidding Documents will constitute a binding contract.

ii. The agreement will be signed in two originals and three more copies, EPI shall retain the ‘Original’, the Contractor shall be provided with the other signed original and the remaining three copies will be retained by EPI. In case of a dispute of any kind whatsoever, the ‘Original’ retained by EPI alone shall be treated as the ‘Original Agreement’.

iii. The Contractor shall provide free of cost to EPI all the Engineering data, drawings and descriptive materials submitted along with the bid, in at least five (5) copies to form an integral part of the Agreement within seven 7 days after issuing of Letter of Intent.

iv. Subsequent to signing of the Agreement, the Contractor at his own cost shall provide to EPI with at least five (5) true hard bound copies of Agreement alongwith all the enclosures viz. letter of intent, Tender Documents etc. within thirty (30) days of its signing.

86.0 PURCHASE PREFERENCE TO PUBLIC SECTOR ENTERPRISES

EPI reserves its right to extend Purchase Preference to Central Public Sector Enterprises (CPSEs) as per policy of Government of India, if any, as applicable on this work. The tenderers are requested to go through latest instructions of Government of India on its Purchase Preference Policy for CPSEs before quoting for the Tender.

87.0 CHANGE IN FIRM’S CONSTITUTION TO BE INTIMATED

Where the Contractor is a partnership firm, prior approval in writing of EPI shall be obtained before any change is made in the constitution of the firm. Where the Contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the Contractor enters into any partnership agreement whereunder the partnership firm would have the right to carry out the works hereby undertaken by the Contractor. If prior approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in
contravention of Clause 59.1 hereof and EPI shall be entitled to take action under Clause 72.2 (xi).

88.0 COMPLIANCE WITH ISO PROCEDURES

EPI is an ISO-9001 and ISO-14001 Company. The conditions of the ISO as applicable shall be followed by the Contractor for implementation & maintaining the established procedures of EPI.
LABOUR SAFETY PROVISIONS

1.0 Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal and 1 vertical).

2.0 Scaffolding or staging more than 3.6m (12 feet) above the ground or floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3 feet) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

3.0 Working platforms, gangways, and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6m (12 feet) above ground level or floor level, they should be closely boarded, should have adequate width & should be suitable fastened as described in (2.0) above.

4.0 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm (3 feet).

5.0 Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30 feet) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. for ladder up to and including 3m (10 feet) in length. For longer ladders this width should be increased at least 1/4" for each additional 30 cm (1 ft.) of length. Uniform step spacing shall not exceed 30 cm (12”). Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of the work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Contractor shall provide all necessary fencing and lights to protect the public from accident, and shall be bound to bear the expenses of defence of every suit, action or other proceeding at law that may be brought by an person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may, with the consent of the Contractor, be paid to compensate any claim by any such person.

6.0 EXCAVATION AND TRENCHING

All trenches, 1.2mts.(four feet) or more in depth, shall at all times be supplied with at least one ladder for each 30m. (100 feet) in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 90 cm (3feet) above the surface of the ground. The sides of the trenches, which are 1.5m. (5feet) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger or sides to collapsing. The excavated materials shall not be placed within 1.5m (5 feet) of the edges of the
trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

7.0 Demolition - Before any demolition work is commenced and also during the progress of the work:

7.1 All roads and open areas adjacent to the work Site shall either be closed or suitably protected.

7.2 No electric cable or apparatus which is likely to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.

7.3 All practical steps shall be taken to prevent danger to persons employed from risk or fire or explosion or flooding. No floor, roof or other part of the building shall be overloaded with debris or materials as to render it unsafe.

8.0 All necessary personal safety equipments as considered adequate by the Engineer-In-Charge should be kept available for the use of persons employed on the Site and maintained in a condition suitable for immediate use, and the Contractor should take adequate step to ensure proper use of equipment by those concerned- The following safety equipment shall be invariably provided.

8.1 Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

8.2 Those engaged in white washing and mixing or stacking of cement bags or any materials which are injurious to the eye shall be provided with protective goggles.

8.3 Those engaged in welding works shall be provided with welder’s protective eye shields.

8.4 Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe interval.

8.5 When workers are employed in sewers and manholes, which are in active use, the Contractors shall ensure that the manhole covers are opened and ventilated at-least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident the public. In addition, the Contractor shall ensure that the following safety measures are adhered to:

   a. Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer.
   b. At least 5 to 6 manholes upstream and down stream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manholes for working inside.
   c. Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.
   d. Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.
e. Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

f. The area should be barricaded or cordoned of by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

g. No smoking or open flames shall be allowed near the blocked manhole being cleaned.

h. The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.

i. Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer In-charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

j. Gas masks with Oxygen Cylinder should be kept at Site for use in emergency.

k. Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air-blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non-sparking gas engines also could be used but they should be placed at-least 2 meters away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.

l. The workers engaged for cleaning the manholes/ sewers should be properly trained before allowing them to work in the manhole. m. The workers shall be provided with Gumboots or non-sparking shoes, bump helmets and gloves non-sparking tools, safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.

n. Workmen descending a manhole shall try each ladder step or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

o. If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.

p. The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-In-Charge regarding the steps to be taken in this regard in an individual case will be final.

8.6 The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form Wherever men above the age of 18 are employed on the work of lead painting the following precautions should be taken.

8.6.1 No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

8.6.2 Suitable facemasks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.
8.6.3 Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

8.6.4.1 a. White lead, sulphate or lead work products containing those pigments shall not be used in painting operation except in the form of paste or of paints ready for use.

b. Measures shall be taken whenever required in order to prevent danger arising from the application of paint in the form of spray.

c. Measures shall be taken, whenever practicable to prevent danger arising out of dust caused by dry rubbing down and scrapping.

8.6.4.2 a. Adequate facilities shall be provided to enable working painter to wash during and on cessation of work.

b. Suitable arrangements shall be made to prevent clothing put off during working hours being spoiled by painting materials.

8.6.4.3 a) Cases of lead poisoning and of suspected lead poisoning shall be notified and shall be subsequently verified by a medical man appointed by the competent authorities of the Consultant.

b) EPI may require when necessary a medical examination of workers.

c) Instructions with regard to the special hygienic precautions to be taken in the painting trade shall be distributed to working painters.

9.0 When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provisions should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.

10.0 Use of hoisting machines and tackle including their attachment encourage and supports shall conform to the following standard of conditions.

10.1 a. These shall be of good mechanical construction, sound material and adequate strength and free from patent, defects and shall be kept required in good working order.

b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

10.2 Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffolding, winch or giving signals to operator.
10.3 In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

10.4 In case of EPI machines, the safe working load shall be notified by the Engineer-In-Charge. As regards Contractor’s machines the Contractor shall notify the safe working load of the machine to the Engineer-In-Charge whenever he brings any machinery to Site of work and get verified by the Engineer-In-Charge.

11.0 Motors gearing, transmission electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguard, hosting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel, such as gloves sleeves and boots as may be necessary, be provided. The worker should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

12.0 All scaffold, ladders, and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

13.0 These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place of work spot. The person responsible for compliance of the safety codes shall be named therein by the Contractor.

14.0 To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the Contractor shall be open to inspection by the or their representatives.

15.0 Notwithstanding the above Clauses from (i) to (xiv) there is nothing in these to exempt the Contractor from the operations of any other Act or Rule in force in the Republic of India.
MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS

1.0 APPLICATION

These rules shall apply to all building and construction works in which 20 (twenty) or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the Contractor work is in progress.

2.0 DEFINITION

Work place means a place where twenty or more workers are ordinarily employed or are proposed to be employed in connection with construction work on any day during the period during which the Contractor work is in progress.

3.0 FIRST-AID FACILITIES

3.1 At every work place first aid facilities shall be provided and maintained, so as to be easily accessible during working hours, First-Aid boxes at the rate of not less than one box per 150 contract labour or part thereof ordinarily employed.

3.2 The First-Aid box shall be distinctly marked with a red cross on white ground and shall contain the following equipments:-

3.2.1 a) For work places in which number of contract labour employed does not exceed 50, Each First-Aid box shall contain the following equipments:

i) 6 small sterilized dressings.
ii) 3 medium size sterilized dressings.
iii) large size sterilized dressings.
iv) 3 large sterilized burn dressings.
v) 1 (30 ml) bottle containing a two percent alcoholic solution of iodine.
v) 1(30 ml) bottle containing salvolatile having the dose and mode of administration indicated on the label.
vii) 1 snake-bite lancet.
viii) 1 (30 gms) bottle of potassium permanganate crystals.
ix) 1 pair of scissors.
x) 1 copy of the First-Aid leaf-let issued by the Director General, Factory Advise Service & Labour Institutes, Government of India.
xi) 1 bottle containing 100 tablets (each of 5 grams) of aspirin.
xii) Ointment for burns.
xiii) A bottle of suitable surgical antiseptic solution.
3.2.2 For work places in which the number of contract labour exceed 50. Each First-Aid box shall contain the following equipments:

i) 12 small sterilized dressings.
ii) 6 medium size sterilized dressings.
iii) 6 large size sterilized dressings.
iv) 6 large size sterilized burn dressings.
v) 6 (15 gms) packet sterilized cotton wool.
vi) 1 (60 ml.) bottle containing a two percent iodine alcoholic solution.
 vii) 1 (60 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.
 viii) 1 roll of adhesive plaster.
ix) 1 snake – bite lancet.
x) 1 (30 gms.) bottle of potassium permanganate crystals.
xi) 1 pair of scissors.
xii) 1 copy of the First-Aid leaf-let issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
xiii) A bottle containing 100 tablets (each of 5 grams) of aspirin.
xiv) Ointment for burns.
xv) A bottle of suitable surgical antiseptic solution.

3.3 Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.

3.4 Nothing except the prescribed contents shall be kept in the First Aid box.

3.5 The First Aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

3.6 A person in charge of the First-Aid box shall be a person trained in First-Aid treatment, in work places where the number of labour employed is 150 or more.

3.7 In work places where the number of labour employed is 500 or more and hospital facilities are not available within easy distance of the works, first-Aid Posts shall be established and run by a trained Compounder. The Compounder shall be on duty and shall be available at all hours when the workers are at work.

3.8 Where work places are situated in places, which are not towns of cities, a suitable motor transport shall be kept readily available to carry injured person or persons suddenly taken ill to the nearest hospital.

4.0 DRINKING WATER

4.1 In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.

4.2 Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

4.3 Every water supply of storage shall be at a distance of not less than 50 feet from any latrines drain or other source of pollution, Where water has to be drawn from
an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap-door which shall be dust and waterproof.

4.4 A reliable pump shall be fitted to each covered well, trap-door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5.0 WASHING FACILITIES

5.1 In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of labour employed herein.

5.2 Separate and adequate screening facilities shall be provided for the use of male and female workers.

5.3 Such facilities shall be conveniently accessible and shall be kept clean and hygienic condition.

6.0 LATRINES AND URINALS

6.1 Latrines shall be provided in every work place on the following scale, namely:

   a) Where females are employed there shall be at least one latrine for every 25 females.

   b) Where males are employed, there shall be at least one latrine for every 25 males.

Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females, as the case may be, up to the first 100, and one for every 50 thereafter.

6.2 Every latrine shall be under cover and so partitioned off as to secure privacy, and shall has a proper door and fastenings.

6.3 Construction of Latrines: The inside walls shall be constructed of masonry or some suitable heat resisting non-absorbent materials and shall be cement washed inside and outside at least once a year. Latrine shall not be a standard lower than borehole system.

6.4 (a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers “For Men only” or “For Women only” as the case may be.

(b) The notice shall also bear the figure of man or of a women, as the case may be.
6.5 There shall be at least one urinal for male workers up to 50 and one for female workers up to 50 employed at a time. Provided that where the number of male or female workmen, as the case may be, exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females up to the first 500 and one for every 100 or part thereof, thereafter.

6.6 a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

   b) Latrines and urinals other than those connected with a flush sewerage system shall comply with the requirements of the Public Health Authorities.

6.7 Water shall be provided by means of a tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.

6.8 **DISPOSAL OF EXCRETA**

Unless otherwise arranged for by the local sanitary authority arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternatively excreta may be disposed off by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm layer of waste or for refuse and then covering it with a layer of earth for fortnight (when it will turn into manure).

6.9 The Contractor shall, at his own expense, carry out all instruction issued to him by the Engineer-In-Charge to effect proper disposal of night soil and other conservancy work in respect of the Contractor’s workmen or employees on the Site. The Contractor shall be responsible for payment of any charges, which may be levied by Municipal or Cantonment Authority for execution of such work on his behalf.

7.0 **PROVISION OF SHELTER DURING REST**

At every place there shall be provided, free of cost four suitable sheds, two for males and the other two for rest separately for the use of man and women labour. The height of each shelter shall not be less than 3 meters from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sqm. Per head.

Provided that the Engineer-In-Charges may permit, subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

8.0 **CRECHES**

8.1 A every work place, at which 20 or more women workers are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a playroom for the children and the other as their bedrooms.

The rooms shall be constructed on standard not lower than the following:
General Conditions of Contract
Engineering Projects (India) Limited

i) thatched roof
ii) mud floor and walls.
iii) planks spread over the mud floor and covered with matting

8.2 The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

8.3 The Contractor shall supply adequate number of toys and games in the playroom and sufficient number of cots and beddings in the bedroom.

8.4 The Contractor shall provide one Ayaa to look after the children in the creche when the number of women workers does not exceed 50 and two when the number of women workers exceed 50.

8.5 The use of the rooms/earmarked as ealize shall be restricted to children, their attendant and mother of the children.

9.0 CANTEENS

9.1 In every work place where the work regarding the employment of contract labour is likely to continue for six months and wherein contract labour numbering one hundred or more are ordinarily employed, an adequate canteen shall be provided by the Contractor for the use of such labour.

9.2 The canteen shall be maintained by the Contractor in an efficient manner.

9.3 The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.

9.4 The canteen shall be sufficiently lighted at all times when any person has access to it.

9.5 The floor shall be made of smooth and impervious material and inside walls shall be lime washed or colour washed at least once in each year.

Provided that the inside walls of the kitchen shall be lime-washed every four months.

9.6 The premises of the canteen shall be maintained in a clean and sanitary condition.

9.7 Waste Water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

9.8 Suitable arrangements shall be made for the collection and disposal of garbage.

9.9 The dinning hall shall accommodate at a time 30 persons of the labour working at time.
9.10 The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chair shall not be less than one square meter per dinner to be accommodated.

9.11 a) A portion of the dining hall, and service counter shall be partitioned off and reserved for women workers in proportion to their number.

   b) Washing places for women shall be separate and screened to secure privacy.

9.12 Sufficient tables, stool, chairs or benches shall be available for the number of dinners to be accommodated.

9.13.1 a) There shall be provided and maintained sufficient utensils, crockery, furniture and any other equipment necessary for the efficient running of the canteen.

   b) The furniture, utensils and other equipment shall be maintained in a clean and hygienic condition.

9.13.2 a) Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.

   b) A service counter, if provided, shall have top of smooth and impervious material.

   c) Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

9.14 The foodstuffs and other items to be served in the canteen shall be in conformity with the normal habits of the labour.

9.15 The charge for food stuffs, beverages and any other items served in the canteen shall be based on 'No profit No loss' and shall be conspicuously displayed in the canteen.

9.16 In arriving at price of foodstuffs, and other articles served in the canteen, the following items shall not be taken into consideration as expenditure, namely:

   a) The rent of land building.

   b) The depreciation and maintenance charges for the building and equipment provided for the canteen.

   c) The cost of purchase, repair and replacement of equipment including furniture, crockery, cutlery and utensils:

   d) The water charges and other charges incurred for lighting and ventilation:

   e) The interest and amounts spent on the provision and maintenance and equipment provided for in the canteen.
9.17  The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

10.0  ANTI MALARIAL PRECAUTIONS

The Contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-In-Charge including the filling up of any borrow pits which may have been dug by him.

11.0  AMENDMENTS

EPI may from time to time, add to or amend these rules and issue such directions as it may consider necessary for the purpose of removing any difficulty which may arise in the administration hereof.
CONTRACTOR’S LABOUR REGULATIONS

1.0  SHORT TITLE

These regulations may be called the Contractor “Labour Regulations”.

2.0  DEFINITIONS

2.1  “Workman” means any person employed by EPI or its Contractor directly or indirectly through a sub-Contractor, with or without the knowledge, of EPI to do any skilled, semi-skilled, unskilled, manual, supervisory, technical or clerical work for hire or reward, whether, the terms of employment are expressed or implied but does not include any person-

   a) Who is employed mainly in a managerial or administrative capacity; or

   b) Who being employed in a supervisory capacity draws wages exceeding Rupees Two thousand Five hundred per person or exercises either by the nature of the duties attached to the office or by reason of powers vested to him, functions mainly of managerial nature.

   c) Who is an out worker, that is to say, a person to whom any articles or materials are given out by or on behalf of the principal Employer to be made up cleaned, washed, altered, ornamental finished, repaired, adopted or otherwise processed for sale for the purpose of the trade or business of the principal Employer and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the principal Employer.

2.2  “Fair Wages” means wages whether for time or piecework fixed and notified under the provisions of the minimum Wages Act from time to time.

2.3  “Contractor” shall include every person who undertake to produce a given result other than a mere supply of goods or articles of manufacture through labour or who supplies labour for any work and includes a sub-Contractor.

2.4  “Wages” shall have the same meaning as defined in the Payment of Wages Act.

2.4.1  Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.

2.4.2  When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week he shall be paid overtime for the extra hours put in by him at double the ordinary rate of wages.
2.4.3.1 Every worker shall be given a weekly holiday on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time, irrespective of whether such worker is governed by the Minimum Wages Act or not.

2.4.3.2 Whether the Minimum Wages prescribed by the Government under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same Contractor for a continuous period of not less than 6 days.

2.4.3.3 Where a Contractor is permitted by the Engineer-In-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substitute holiday to him for the whole day on one of the five days immediately before or after the normal weekly holidays and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

3.0 DISPLAY OF NOTICE REGARDING-WAGES, ETC.

The Contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clean and legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers, giving the minimum rates of wages fixed under the Minimum Wages Act, the actual wages being paid, the hours of work for which such wages are earned, wage period, dates of payment of wages and other relevant information as per Appendix ‘A’.

4.0 PAYMENT OF WAGES

4.1 The Contractor shall fix wage periods in respect of which wages shall be payable.

4.2 No wage period shall exceed one month.

4.3 The wages of every person employed as labour in an establishment or by a Contractor where less than one thousand, such persons are employed shall be paid before the expiry of the seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.

4.4 Where the employment of any worker is terminated by or on behalf of the Contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.

4.5 All payments of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.
4.6 Wages due to every worker shall be paid to him direct or to other person authorized by him in this behalf.

4.7 All wages shall be paid in current coin or currency or in both.

4.8 Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.

4.9 A notice showing the wage period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the Contractor to the Engineer-In-Charge under acknowledgment.

4.10 It shall be the duty of the Contractor to ensure the disbursement of wages in the presence of the Engineer or any other authorized representatives of the Engineer-In-Charge who will be required to be present at the place and time of disbursement of wages by the Contractor to workmen.

4.11 The Contractor shall obtain from the Engineer or any other authorized representative of the Engineer-In-Charge as the case may be, a certificate under his signature at the end of the entries in the “Register of Wages” or the “Wage-cum-Muster Roll” as the case may be in the following form:

“Certified that the amount shown in column No………….. has been paid to the workmen concerned in my presence on……………….. at …………….”

5.0 FINES AND DEDUCTIONS, WHICH MAY BE MADE FROM WAGES

5.1 The wages of a worker shall be paid to him without any deduction of any kind except the following:

a) Fines

b) Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.

c) Deduction for damage to or loss of goods expressly entrusted to the employed persons for custody, or from loss of money or any other deduction which he is required to account where such damage or loss is directly attributable to his neglect or default.

d) Deduction for recovery of advances or for adjustment of over payment of wages, advances granted shall be entered in a register.

e) Any other deduction, which the Central Government may from time to time allow.

5.2 No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved by the Chief Labour Commissioner.
NOTE: An approved list of Acts and Omissions for which fines can be imposed is enclosed at Appendix-I.

5.3 No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.

5.4 The total amount of fine which may be imposed in any one-wage period on a worker shall not exceed an amount equal to three paise in a Rupee of the total wages, payable to him in respect of that wage period.

5.5 No fine imposed on any worker shall be recovered from him in installment, or after the expiry of sixty days from the date on which it was imposed.

5.6 Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

6.0 LABOUR RECORDS

6.1 The Contractor shall maintain a “Register of persons employed” on work on contract in form XIII of the CL (R&A) Central Rules 1971 (Appendix-B).

6.2 The Contractor shall maintain a “Muster Roll” register in respect of all workmen employed by him on the work under contract in from XVI of the CL (R&A) Rules 1971 (Appendix-C).

6.3 The Contractor shall maintain a “Wage Register” in respect of all workmen employed by him on the work in form (Appendix-D).

6.4 Register of accidents – The Contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:

a) Full particulars of the labourers who met with accident.
b) Rate of wages
c) Sex
d) Age
e) Nature of accident and cause of accident.
f) Time and date of accident.
g) Date and time when he/she admitted in Hospital
h) Date of discharge from the Hospital
i) Period of treatment and result of treatment
j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.
k) Claim required to be paid under Workmen’s Compensation Act.
l) Date of payment of compensation.
m) Amount paid with details of the person to whom the same was paid.
n) Authority by whom the compensation was assessed.
o) Remarks.
6.5 Register of Fines – The Contractor shall maintain a “Register of Fines” in the form (Appendix-H).

The Contractor shall display in a good condition and in a conspicuous place of work the approved list of Acts and Omission for which fines can be imposed (Appendix-I).

6.6 Register of Deductions-The Contractor shall maintain a “Register of Deductions” for damage or loss in form (Appendix-J).

6.7 Register of Advances-The Contractor shall maintain a “Register of Advances” in form (Appendix-K).

6.8 Register of Overtime-The Contractor shall maintain a “Register of Overtime” in form (Appendix-L).

7.0 ATTENDANCE CARD-CUM WAGE SLIP:

7.1 The Contractor shall issue an attendance card-cum-wage slip to each workman employed by him in the specimen form at (Appendix-E).

7.2 The card shall be valid for each wage period.

7.3 The Contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.

7.4 The card shall remain in possession of the worker during the wage period under reference.

7.5 The Contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.

7.6 The Contractor shall obtain the signature or thump impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

8.0 EMPLOYMENT CARD

The Contractor shall issue an Employment Card in form to each worker within three days of the employment of the worker (Appendix-F).

9.0 SERVICE CERTIFICATE

On termination of employment for any reason whatsoever the Contractor shall issue to the workman whose services have been terminated, a service certificate in from Appendix-G.
10.0 PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6 and 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-In-Charge, Labour Officer.

11.0 POWER OF LABOUR OFFICERS TO MAKE INVESTIGATIONS INQUIRY

The Labour Officer or any other person authorized by EPI on its behalf shall have power to make inquiries with a view to ascertaining and enforcing due and proper observance of the Fair Wage Clauses and the Provisions of Regulations. He shall investigate into any complaint regarding the default made by the Contractor or sub-Contractor in regard to such provision.

12.0 INSPECTION OF BOOK AND SLIPS

The Contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour officer or any other person, authorized by the Central Government on his behalf.

13.0 SUBMISSION OF RETURNS

The Contractor shall submit periodical returns as may be specified from time to time.

14.0 AMENDMENTS

EPI may from to time, add or amend the regulations and on any question as to the application, interpretation or effect of these regulations the decision of the Zonal Chief concerned shall be final.
Appendix – ‘A’

LABOUR BOARD

Name of work

Name of Contractor

Address of Contractor

Name and Address of Unit

Name of Labour Enforcement Officer

Address of Labour Enforcement Officer

Date:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Category</th>
<th>Minimum wage fixed</th>
<th>Actual wages paid</th>
<th>Number present</th>
<th>Remarks</th>
</tr>
</thead>
</table>

Weekly Holiday

Wage Period

Date of Payment of wages

Working hours

Rest interval
FORM 13

SEE RULE 75

REGISTER OF WORKMEN EMPLOYED BY CONTRACTOR

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name and surname of workman</th>
<th>Age &amp; sex</th>
<th>Father’s Husbands Name</th>
<th>Nature of employment / designation</th>
<th>Permanent home address of the workman (village and Tehsil Taluk and District)</th>
<th>Local address</th>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of commencement of employment</th>
<th>Signature or thumb impression of the workman</th>
<th>Date of termination of employment</th>
<th>Reasons for termination</th>
<th>Remarks</th>
</tr>
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<tbody>
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</table>
FORM XVI

(See Rule 78(2) (193)

**MUSTER ROLL**

Name and address of Contractor

Name and address of establishment in/under which contract is carried on

Nature and location of work

Name and Address of Principal Employer

For the month / fortnight

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the workman</th>
<th>Sex</th>
<th>Father's / Husband's Name</th>
<th>Dates</th>
<th>Remarks</th>
</tr>
</thead>
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1 2 3 4 5
FORM XVII

[SEE RULE 78(2) (03)]

REGISTER OF WAGES

Name and address of Contractor

Name and address of establishment in/under which contract is carried on

Nature and location of work

Name and Address of Principal Employer

Wage period: per month/ fortnightly

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Workman</th>
<th>Serial No. in the register of workman</th>
<th>Designation nature of work done</th>
<th>Nos. of days worked</th>
<th>Units of work done</th>
<th>Daily rate of wages/ piece rate</th>
<th>Basic Wages</th>
</tr>
</thead>
<tbody>
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<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

Dearness allowance

Overtime

Other cash payments (Nature of payments to be indicated)

Total

Duration if any (indicate)

Net Amt paid

Signature thumb impression of the workman

Initial Contractor or his representative

<table>
<thead>
<tr>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
</table>

Signature of Contractor
FORM XIX

[SEE RULE 78 (2) (B)]

WAGES SLIP

Name and address of Contractor

Name and Father’s/Husband’s Name of workman

Nature and location of work

For the Week/Fortnight/Month ending

1. No. of days worked

2. No. of Units worked in case of piece rate workers

3. Rate of daily wages/piece rate

4. Amount of overtime wages

5. Gross wages payable

6. Deductions if any

7. Net amount of wages paid

Sign of the Contractor
Appendix – ‘E’

WAGE CARD

WAGE CARD NO.

NAME AND ADDRESS OF CONTRACTOR         DATE OF ISSUE
NATURE OF WORK WITH LOCATION          DESIGNATION
NAME OF WORKMAN                  MONTH/FORTNIGHT

RATE OF WAGES

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
26 27 28 29 30 31

MORNING          RATE
EVENING          AMOUNT

INITIAL

RECEIVED FROM                THE SUM OF RS.             ON ACCOUNT
                                      OF MY WAGON.

SIGNATURE

THE WAGE CARD IS VALID FOR ONE MONTH FROM THE DATE OF ISSUE.
FORM XIV

(SEE RULE 76)

EMPLOYMENT CARD

Name and address of Contractor

Name and address of establishment under which
The contract is carried out

Nature and location of work

Name and address of Principal Employer

1. Name of the workman

2. S. Name in the register of workman employed

3. Nature of Employment/Designation

4. Wage rate (with particulars of unit in case of piece work)

5. Wage Period

6. Tenure of employment

7. Remarks

Signature of Contractor
FORM XV

(SEE RULE 77)

SERVICE CERTIFICATE

Name and address of Contractor

Nature and location of work

Name and address of workman

Age or date of birth

Identification Marks

Father’s/Husband’s Name

Name and address of establishment in which contract is carried on

Name and address of Principal Employer

Total period of which employed

<table>
<thead>
<tr>
<th>S.No.</th>
<th>From</th>
<th>To</th>
<th>Nature of work</th>
<th>Rate of wages (with particulars of unit in case of piece work)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Signature
FORM XII

[SEE RULE 78 (2) (D)]

REGISTER OF FINES

Name and address of Contractor

Name and address of establishment in/ under which contract is carried on

Nature and location of work

Name and address of workman

Name and address of Principal Employer

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of workman</th>
<th>Father’s/Husband Name</th>
<th>Designation/nature of employment</th>
<th>Act/Omission for which fine imposed</th>
<th>Date of offence</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Whether workman showed causes against fine</th>
<th>Name of person in whose presence employees explanation was heard</th>
<th>Wage period and wages payable</th>
<th>Amount of fine Imposed</th>
<th>Date on which fine realized</th>
<th>Remarks</th>
</tr>
</thead>
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<td>8</td>
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<td>12</td>
</tr>
</tbody>
</table>
LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED

In accordance with rule of Labour Regulations, to be displayed prominently at the Site of work both in English and local language.

1. Willful insubordination or disobedience, whether alone or in combination with other.
2. Theft, fraud or dishonestly in connection with Contractors beside a business or property of EPI.
3. Taking or giving bribes or any illegal gratifications.
4. Habitual late attendance.
5. Drunk-ness fighting riotous or disorderly or indifferent behaviour.
6. Habitual negligence.
7. Smoking near or around the area where combustible or other materials are locked.
8. Habitual indiscipline.
9. Causing damage to work in the progress or to property of EPI or of the Contractor.
10. Sleeping on duty.
11. Malingering or slowing down work.
12. Giving the false information regarding name, age, fathers name etc.
13. Habitual loss of wage cards supplied by the Employer.
14. Unauthorized use of Employers property or manufacturing or making of unauthorized articles at the work place.
15. Bad workmanship in construction and maintenance by skilled workers, which is not approved by EPI for which the Contractors are compelled to undertake rectifications.
16. Making false complaints and/or misleading statements.
17. Engaging on trade within the premises of the establishment.
18. Any unauthorized divulgence of business affairs of the employees.
19. Collection or canvassing for the collection of any money within the premises of an establishment unless authorized by the Employer.
20. Holding meeting inside the premises without previous sanction of the Employers.
21. Threatening or intimidating any workman or employee during the working hours within the premises.
FORM XX
[SEE RULE 78 (2) (D)]

REGISTER OF DEDUCTION FOR DAMAGES OR LOSS

Name and address of Contractor

Name and address of establishment in/ under which contract is carried on

Nature and location of work

Name and address of Principal Employer

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of workman</th>
<th>Father’s/Husband Name</th>
<th>Designation/nature of employment</th>
<th>Particulars of damage or loss</th>
<th>Date of damage/loss</th>
</tr>
</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>Date of recovery</th>
<th>Whether workman showed cause against deductions</th>
<th>Name of person in whose presence employees explanation was heard</th>
<th>Amount of deduction Imposed</th>
<th>No. of installment</th>
<th>First Installment</th>
<th>Last Installment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
FORM XXII

[SEE RULE 78(2)]

REGISTER OF ADVANCES

Name and address of Contractor

Name and address of establishment in/ under which contract is carried on

Nature and location of work

Name and address of Principal Employer

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of workman</th>
<th>Father’s/Husband Name</th>
<th>Designation/nature of employment</th>
<th>Wages period and wages payable</th>
<th>Date and amount of advance given</th>
</tr>
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</tbody>
</table>

Purpose / for which advance made

<table>
<thead>
<tr>
<th>No. of installments by which advance is to be paid</th>
<th>Date and amount of each installment repaid</th>
<th>Date on which last installment was repaid</th>
<th>Remarks</th>
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</table>
FORM XXIII

[See Rule 78(2) (E)]

REGISTER OF OVERTIME

Name and address of Contractor

Name and address of establishment in/ under which contract is carried on

Nature and location of work

Name and address of Principal Employer

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of workman</th>
<th>Father’s/Husband Name</th>
<th>Sex</th>
<th>Designation/ nature of employment</th>
<th>Date on which overtime worked</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Total overtime worked or production in case of piece rated</th>
<th>Normal rate of wages</th>
<th>Overtime rate of wages</th>
<th>Overtime earning</th>
<th>Rate on which overtime wages paid</th>
<th>Remarks</th>
</tr>
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</table>

Signature of Contractor
APLICATION FOR EXTENSION OF TIME

(To be completed by the Contractor)

PART –I

1. Name of Contractor
2. Name of the work as given in the Agreement
3. Agreement No.
4. Estimated amount put to Tender
5. Date of commencement work as per agreement
6. Period allowed for completion of work as per agreement
7. Date of completion stipulated as per agreement
8. Period for which extension of time has been given previously

   Extension granted

   a) First extension vide Engineer-in-charge letter No... ......date Months Days

   b) 2nd extension vide Engineer-in-charge letter No......... date Months Days

   c) 3rd extension vide Engineer-in-charge letter No......... date Months Days

   d) 4th extension vide Engineer-in-charge letter No......... date Months Days

Total extension previously given

9. Reasons for which extension have been previously given (copies of the previous application should be attached)

10. Period for which extension is applied for:

11. Hindrances on account of which extension is applied for with dates on which hindrances occurred, and the period for which these are likely to last.

   a) Serial No.

   b) Nature of hindrance
c) Date of Occurrence

d) Period for which it is likely to last

e) Period for which extension required for this particular hindrance.

f) Overlapping period, if any, with reference to item

g) Net extension applied for

h) Remarks, if any

Total period for which extension is now applied for on account of
hindrances mentioned above ............. Month/ days.

12. Extension of time required for extra work.

13. Details of extra work and on the amount involved:

a) Total value of extra work

b) Proportionate period of extension of time based on estimated amount put
to tender on account of extra work.

14. Total extension of time required for 11 & 12
Submitted to the Engineer-In-Charges office.

SIGNATURE OF CONTRACTOR

DATE
APPLICATION FOR EXTENSION OF TIME

(PART – II)

1. Date of receipt of application from Contractor for the work in the Engineer-In-Charge office.

2. Acknowledgement issued by Engineer-In-Charge vide his letter No dated

3. Engineer-In-Charge remarks regarding hindrances mentioned by the Contractor.
   i) Serial No.
   ii) Nature of hindrance
   iii) Date of occurrence of hindrance
   iv) Period for which hindrance, is likely to last
   v) Extension of time period applied for by the Contractor
   vi) Overlapping period, if any, giving reference to items which overlap
   vii) Net period for which extension is recommended.
   viii) Remarks as to why the hindrance occurred and justification for extension recommended.

4. Engineer-In-Charge recommendations.

   (The present progress of the work should be stated and whether the work is likely to be completed by the date upto which extension has been applied for. If extension of time is not recommended, what compensation is proposed to be levied under the agreement.)

SIGNATURE OF ENGINEER-IN-CHARGE

APPROVAL OF ZONAL HEAD
PROFORMA FOR EXTENSION OF TIME

PART –III

To

NAME

ADDRESS OF THE CONTRACTOR

SUBJECT:

Dear Sir(s)

Reference your letter No ___________ dated ___________ , in connection with the grant of extension of time for completion of the work…..

The date of completion for the above mentioned work, is __________ as stipulated in the agreement, dated __________.

Extension of time for completion of the above mentioned work is granted upto ___________, without prejudice to the right of EPI to recover compensation for delay in accordance with the provision made in the relevant Clause (s) of the said agreement dated the ___/___/___. It is also clearly understood that EPI shall not consider any revision in contract price or any other compensation whatsoever due to grant of this extension.

Provided that notwithstanding the extension hereby granted, time is and shall still continue to be the essence of the said agreement.

Yours faithfully,

FOR EPI LTD.
PROFORMA FOR BANK GUARANTEE IN LIEU OF EARNEST MONEY DEPOSIT

In consideration of Chairman & managing Director, Engineering Projects (India) Limited, (A Govt. of India Enterprise), Core-3, Scope Complex, Lodhi Road, New Delhi Pin-110003. (hereinafter called the EPI) having agreed to accept bank Guarantee of Rs ................ in lieu of EARNEST MONEY DEPOSIT from .......................................................... (hereinafter called the Supplier/ Contractor/ Sub-Contractor, which expression shall include its heirs, successors and assignees) in respect of the Tender for ................................................................................................................

We, ........................................ bank having its registered/head office at ................................... (hereinafter referred to as the Bank) do hereby agree and undertake to pay to EPI without demur or protest an amount not exceeding Rs.......................... on demand by EPI.

We the above said Bank further agree and undertake to pay the said amount of Rs...................... without any demur on demand within 48 hours. Any demand made on the Bank by EPI shall be conclusive as regards the amount due and payable by the Bank under this guarantee.

We the above said Bank further agree that the guarantee herein contained shall be in full force and in effect until ................................................................................ date .........................

Unless a demand or claim under this guarantee is made on us in writing on or before .................................................. date ......................... , we shall be discharged from all liabilities under this guarantee thereafter.

We, the above said Bank, further agree that EPI shall have full liberty, without our consent and without affecting in any manner our obligation to verify, modify or delete any of the conditions.

We, the above said Bank, lastly undertake not to revoke this guarantee during its currency except with the prior consent of EPI in writing.

Dated..............................this day of..............200.

For and on behalf of the Bank

NOTE: on a Non-Judicial stamp paper of Rs. 100/- (Rupees One hundred only)
SECURITY DEPOSIT CUM PERFORMANCE BANK GUARANTEE

The Chairman & Managing Director
(A Govt. of India Enterprise),
Engineering Projects (India) Ltd.
Core-3, SCOPE Complex
7, Institutional Area, Lodhi road
New Delhi – 110 003

Dear Sir,

In consideration of the Chairman & Managing Director, Engineering Projects (India) Ltd. (A Govt. of India Enterprise), Core-3, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi – 110 003 (hereinafter called ‘EPI’ which expression shall unless repugnant to the subject or context includes its successors and assigns) having agreed under the terms and conditions of Supply Contract/Contract/Sub-Contract no. ______________________ Dated ______________________ made between M/s ______________________ (hereinafter referred to as the said Supplier/Contractor/Sub-Contractor) which expression shall unless repugnant to the subject or context includes its successors and assigns) and EPI in connection with ______________________ (hereinafter called ‘The said Supply Contract/Contract/Sub-Contract) to accept a Deed Security Deposit-cum-Performance Bank Guarantee as herein provided for ______________________ in lieu of:

a) The Security Deposit to be made by the said Supplier/Contractor/Sub-Contractor for the due fulfillment by the said Supplier/Contractor/Sub-Contractor of the terms and conditions contained in the said Supply Contract/Contract/Sub-contract, and

b) Fulfillment of the conditions of the said Supply Contract /Contract/Sub-Contract by furnishing a security for the performance of the works and/or equipment/materials supplied in accordance with conditions of the said Supply Contract/ Contract/ Sub-Contract.

1. We ______________________ (hereinafter referred to as “the said bank which expression shall unless repugnant to the subject or context includes its successors and assigns) and having our registered office at ______________________ do hereby unconditionally and irrevocably undertake and agree to indemnify and keep indemnified EPI from time to time to the extent of (______________________) Only against any loss, damages, costs, charges and expenses caused to or suffered by or that may be caused or suffered by EPI [I by reason of any breach or breaches by the said Supplier/Contractor/Sub-Contractor of any of the terms and conditions contained in the said Supply Contract/Contract/Sub-Contract and or any amount becoming due for non-
performance and/or penalty as assessed by EPI and top unconditionally pay the amount claimed by EPI on demand and without demur and protest.

2. We the said Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Supply Contract/Contract/Sub-Contract and till all the dues of EPI under the said Supply Contract/Contract/Sub-Contract or by virtue of any of the terms and conditions governing the said Supply Contract/Contract/Sub-Contract have been fully paid and its claims satisfied or discharged and till EPI certifies that the terms and conditions of the said Supply Contract/Contract/Sub-Contract have been fully and properly carried out by the said Supplier/Contractor/Sub-Contractor and accordingly discharge this guarantee subject, however, that EPI shall have no claim under this guarantee after 6 months from the date of expiry of the guarantee unless a notice of the claim under this guarantee has been served on the Bank before the expiry of the said period of 6 months.

3. EPI shall have the fullest liberty without affecting in any way the liability of the said Bank under this Guarantee or indemnity from time to time to vary any of the terms and conditions of the said Supply Contract/Contract/Sub-Contract to extend time of performance of the said Supply Contract/Contract/Sub-Contract or to postpone for any time and from time to time any power’s exercisable by it against the said Supplier/Contractor/Sub-Contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Supply Contract/Contract/Sub-Contract or securities available to EPI and the said Bank shall not be released from its liability under these presents by any exercise by EPI of the liberty with reference to the matters aforesaid or by reason of time being given to the said Supplier/Contractor/Sub-Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the said Bank from its such liability.

4. We, the said Bank, further agree that EPI shall be the sole judge of and as to whether the said Supplier/Contractor/Sub-Contractor has committed any breach or breaches of any of the terms and conditions of the said Supply Contract/Contract/Sub-Contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by EPI on account thereof and the decision of EPI that the said Supplier/Contractor/Sub-Contractor has committed such breach or breaches and as to the amount or amounts of loss, damages, costs, charges and expenses caused to or suffered by EPI from time to time shall be final and binding on the Bank.

5. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of EPI and liabilities of the said Supplier/Contractor/Sub-Contractor arising up to and until mid night of ________________, subject the claim period as mentioned in para ______________.

6. This guarantee shall be in addition to any other guarantee or security whatsoever that EPI may now or at any time anywise may have in relation to the said Supplier/Contractor/Sub-Contractor obligation/liabilities under and/or in connection with the said Supply Contract/Contract/Sub-Contract and EPI shall have full authority to take recourse to or enforce this guarantee in preference to any other guarantee or
security which EPI may have or obtain and there shall be no forbearance on the part of EPI IN ENFORCING OR REQUIRING ENFORCEMENT OF ANY OTHER SECURITY AND shall not have the effect of releasing the said Bank from its full liability hereunder.

7. EPI shall be at liberty without reference to the said Bank and without effecting the full liability of the said Bank hereunder to take any other security in respect of the said supplier's/Contractor's/sub-Contractor's obligations and/or liabilities under or in connection with the said Supply Contract/Contract/Sub-Contract.

8. This guarantee shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the said Supplier/Contractor/Sub-Contractor, but shall in all respects and for all purposes be binding and operative until payment of all moneys paid to EPI in terms thereof.

9. The said Bank hereby waives all rights at any time inconsistent with the terms of this guarantee and the obligations of the said Bank in terms hereof shall not be anywise affected or suspended by reasons of any dispute or disputes having been raised by the said Supplier/Contractor/Sub-Contractor (whether or not pending before any arbitrator, tribunal or court) of any denial or liability by the said Supplier/Contractor/Sub-Contractor stopping or preventing or purporting to stop or prevent any payment by the said Bank to EPI in terms hereof. The amount stated in any notice of demand addressed by EPI to the Guarantor Bank as liable to be paid to EPI by the Supplier/Contractor/Sub-Contractor on account of any losses or damages or costs, charges and/or expenses shall as between the said bank and EPI be conclusive evidence of the amount so liable to be paid to EPI or suffered or incurred by EPI as the case may be and payable by the said Bank to EPI in terms hereof. We, the said Bank further undertake that we shall pay forthwith the amount stated in the notice of demand to EPI without demur and protest.

10. We, the said bank undertake not to revoke this guarantee during its currency except with the consent of EPI in writing and agree that any change in the constitution of the said Supplier/Contractor/Sub-Contractor or the said Bank shall not discharge our liabilities hereunder.

11. It shall not be necessary for EPI to proceed against the said Supplier/Contractor/Sub-Contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which EPI may have obtained or obtain from the Supplier/Contractor/Sub-Contractor shall at the time when proceedings are taken against the said Bank hereunder be outstanding or unrealized.

12. Our liability under this guarantee shall be restricted to ________________ and this guarantee shall remain in force until midnight of ________________ unless a claim to enforce this guarantee is filed with us within six months from ________________. (which is date of expiry of this guarantee), we shall be discharged from all liabilities under this guarantee thereafter.

DATED ---------------------------- THIS day of -----------------------200…

FOR AND ON BEHALF OF BANK

Signature of Contractor  Page 103  EPI
PROFORMA FOR ADVANCE BANK GUARANTEE

To

The Chairman & Managing Director,
Engineering Projects (India) Ltd.,
(A Govt. of India Enterprise),
Core-3, Scope Complex,
7, Institutional Area,
Lodhi Road,
New Delhi—110 003.

Dear Sir,

1. In consideration of the Chairman & Managing Director, Engineering Projects (India) Limited, (A Govt. of India Enterprise), Core-3, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi – 110 003 (hereinafter called 'EPI' which expression shall includes its successors and assigns) having agreed under the terms and conditions of Supply Contract/ Contract/ Sub-Contract No……………………………dated…(hereinafter referred to as the said Supply Contract/ Contract/ Sub-Contract) made between EPI and……………………..hereinafter called the Supplier/ Contractor/ Sub-Contractor) which expression shall include its successors and assigns to make at the request of the Supplier/ Contractor/ Sub-Contractor a lump sum advance of Rs…………..for utilising it only for the purposes of the said Supply Contract/ Contract/ Sub-Contract on his furnishing a guarantee acceptable to EPI.

2. We, the……………………..Bank (hereinafter referred to as ‘the said Bank) a Company under the Companies Act 1956 and having our registered office at…………………………………………..do hereby guarantee the recovery of the said advance and interest thereon as provided according to the terms and conditions of the said Supply Contract/ Contract/ Sub-Contract. If the Supplier/ Contractor/ Sub-Contractor fails to utilise the said advance for the purposes of the said Supply Contract/ Contract/ Sub-Contract and/or the said advance together with interest thereon as aforesaid is not fully recovered by EPI, we. …………Bank hereby unconditionally and irrevocably undertake to pay the EPI on demand and without demur or protest to the extent of the said sum of Rs………………any claim made by EPI on us against non-utilisation / misutilisation of the said advance and/or by reason of EPI not being able to recover in full the sum of Rs………………. with interest as aforesaid.

3. We……………………..Bank further agree that EPI shall be the sole judge of and as to whether the said Supplier/ Contractor/ Sub-Contractor has utilised or not utilised the said advance or any part thereof for the purposes of the said Supply Contract/ Contract/ Sub-Contract and/or as to whether the advance or any part thereof with
interest has been recovered or not and the finding of the EPI in this regard shall be final and binding on us.

4. We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Supply Contract/ Contract/ Sub-Contract and till the said advance with interest has been fully recovered and its claims satisfied or discharged and till EPI certifies that the said advance with interest has been fully recovered from the Supplier/ Contractor/ Sub-Contractor.

5. EPI shall have the fullest liberty without affecting in any way the liability to the said Bank under this guarantee or indemnity from time to time to vary any of the terms and conditions of the said Supply Contract/ Contract/ Sub-Contract, or the advance or to extend time of performance by the said Supplier/ Contractor/ Sub-Contractor or to postpone for any time and from time to time any powers exercisable by it against the said Supplier/ Contractor/ Sub-Contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Supply Contract/ Contract/ Sub-Contract or securities available to EPI and the said Bank shall not be released from its liability under these presents by any exercise by EPI of the liberty with reference to the matters aforesaid or by reason of time being given to the said Supplier/ Contractor/ Sub-Contractor or any other forbearance, act or omission on the part of the EPI or any indulgence by EPI to the said Supplier/ Contractor/ Sub-Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the said Bank from its such liability.

6. The Bank hereby waives all rights at any time inconsistent with the terms of this guarantee/Undertaking and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reasons of any dispute or disputes having been raised by the Supplier/ Contractor/ Sub-Contractor (whether or not pending before any arbitrator, Tribunal or court) or any denial or liability by the Supplier/ Contractor/ Sub-Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to EPI in terms hereof.

7. The amount stated in any notice of demand addressed by EPI to Bank as liable to be paid to EPI by the Supplier/ Contractor/ Sub-Contractor, shall be conclusive evidence of the amount so liable to be paid to EPI by the Bank.

8. This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever that EPI may now or any time anywise may have in relation to the Supplier’s/ Contractor’s/ Sub-Contractor’s obligations of liabilities under and/or in connection with the said Supply Contract/ Contract/ Sub-Contract, and EPI shall have full authority to take recourse to or enforce this security in preference to any other guarantee or security which EPI may have or obtain and there shall be no forbearance on the part of EPI in enforcing or requiring enforcement of any other security and shall not have the effect of releasing the Bank from its full liability hereunder.

9. It shall not be necessary for EPI to proceed against the said Supplier/ Contractor/ Sub-Contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which EPI may have obtained or obtain from the Supplier/ Contractor/ Sub-Contractor, shall at the time
when proceedings are taken against the said Bank hereunder be outstanding or unrealised.

10. We, ..................................... the said Bank further undertake that we shall pay forthwith the amount stated in the notice of demand without demur and protest notwithstanding any dispute/difference pending between the parties before the arbitrator Tribunal or Court and/or dispute is being referred to arbitrator.

11. We, the said Bank undertake not to revoke this Guarantee during its currency except with the consent of EPI in writing and agree that any change in the Constitution of the said Supplier/ Contractor/ Sub-Contractor or the said Bank shall not discharge our liability hereunder.

12. This guarantee/undertaking shall be a continuing guarantee/undertaking and shall remain valid and irrevocable for all claims of EPI and liabilities of the Supplier/ Contractor/ Sub-Contractor arising up to and until midnight of………..

13. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs………………. (Rs……………………………….) and this guarantee shall remain in full force till…………….. unless a claim is made on us within 3 months from the date of expiry of this guarantee i.e. before all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities hereunder.

Dated.........................................................day of......................................... 200

For and on behalf of Bank
PROFORMA FOR PERFORMANCE BANK GUARANTEE

To

The Chairman & Managing Director,
Engineering Projects (India) Ltd.,
(A Govt. of India Enterprise),
Core-3, Scope Complex,
7, Institutional Area,
Lodhi Road,
New Delhi—110 003.

Dear Sir,

In consideration of the Chairman & Managing Director, Engineering Projects (India) Limited, (A Govt. of India Enterprise), Core-3, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi – 110 003 (hereinafter called ‘EPI’ which expression shall include its successors and assigns) having awarded to ……………… (hereinafter referred to as ‘the Supplier/ Contractor/ Sub-Contractor’ which expression shall wherever the subject or context so permits include its successors and assigns) a Supply Contract/Contract / Sub-Contract No. ……………… in terms inter alia, of EPI Letter No. ….……………dated… and the General Conditions of Contract/ General Purchase Conditions of EPI and upon the condition of the Supplier’s/ Contractor’s/ Sub-Contractor’s furnishing security for the performance of the Supplier’s/ Contractor’s/ Sub-Contractor’s obligations and/or discharge of the Supplier’s/ Contractor’s/ Sub-Contractor’s liability under and/or in connection with the said Supply Contract/ Contract/ Sub-Contract up to a sum of Rs…………(Rupees………………………. only) amount to………..percent of the total Supply Contract/ Contract/ Sub-Contract Value.

1. We………………………………………………………………………………………….(hereinafter called ‘the Bank’ which expression shall include its successors and assigns) hereby jointly and severally undertake the guarantee to payment to EPI in rupees forthwith on demand in writing and without protest or demur or any and all monies anywise payable by the Supplier/ Contractor/ Sub-Contractor to EPI under in respect of or in connection with the said Supply Contract/ Contract/ Sub-Contract inclusive of all EPI’s losses and damages and costs, charges and expenses and other moneys anywise payable in respect to the above as specified in any notice of demand made by the EPI to the Bank with reference to this guarantee up to and aggregate limit of Rs………………..(Rupees…………………………………………………..only).
2. We……………….. Bank further agree that EPI shall be sole judge of and as to whether the said Supplier/ Contractor/ Sub-Contractor has committed any breach or breaches of any of the terms and conditions of the said Supply Contract/ Contract/ Sub-Contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by EPI on account thereof and the decision of EPI that the said Supplier/ Contractor/ Sub-Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by EPI from time to time shall be final and binding on us.

3. EPI shall be at liberty without reference to the Bank and without effecting the full liability of the Bank hereunder to take any other security in respect of the Supplier’s/ Contractor’s/ Sub-Contractor’s obligations and/or liabilities under or in connection with the said Supply Contract/ Contract/ Sub-Contract and to vary the forms vis-à-vis the Supplier/ Contractor/ Sub-Contractor of the said Supply Contract/ Contract/ Sub-Contract or to grant time and/or indulgence to the Supplier/ Contractor/ Sub-Contractor or to reduce or to increase or otherwise vary the prices of the total Supply Contract/ Contract/ Sub-Contract Value or to release or to forbear from enforcement of all or any of the security and/or any other security(ies) now or hereafter held by the EPI and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Supplier/ Contractor/ Sub-Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to EPI hereunder or prejudice rights of EPI against the bank.

4. The guarantee/undertaking shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Supplier/ Contractor/ Sub-Contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys made to EPI in terms thereof.

5. The Bank hereby waives all rights at any time inconsistent with the terms of this guarantee/undertaking and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reasons of any dispute or disputes having been raised by the Supplier/ Contractor/ Sub-Contractor (whether or not pending before any arbitrator, Tribunal or Court) of any denial or liability by the Supplier/ Contractor/ Sub-Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to the EPI in terms hereof.

6. The amount stated in any notice of demand addressed by EPI to Bank as liable to be paid to EPI by the Supplier/ Contractor/ Sub-Contractor or as suffered or incurred by the EPI on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to EPI or suffered or incurred by EPI as the case may be and shall be payable by the Bank to EPI in terms hereof.
7. This guarantee/undertaking shall be a continuing guarantee/undertaking and shall remain valid and irrevocable for all claims of EPI and liabilities of the Supplier/Contractor/Sub-Contractor arising up to and until midnight of…………….

8. This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever that EPI may now or any time anywise may have in relation to the Supplier's/Contractor's/Sub-Contractor's obligations of liabilities under and/or in connection with the said Supply Contract/Contract/Sub-Contract, and EPI shall have full authority to take recourse to or enforce this security in preference to any other guarantee of security which EPI may have or obtain and here shall be no forbearance on the part of EPI in enforcing or requiring enforcement of any other security and shall not have the effect of releasing the Bank from its full liability hereunder.

9. It shall not be necessary for EPI to proceed against the said Supplier/Contractor/Sub-Contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which the EPI may have obtained or obtain from the Supplier/Contractor/Sub-Contractor, shall at the time when proceedings are taken against the said Bank hereunder be outstanding or unrealised.

10. We the said Bank undertake not to revoke this guarantee during its currency except with the consent of EPI in writing and agree that any change in the constitution of the said Supplier/Contractor/Sub-Contractor or the said bank shall not discharge our liability hereunder.

11. We …………the said Bank further undertake that we shall pay forthwith the amount stated in the notice of demand without demur and protest notwithstanding any dispute/difference pending between the parties before the arbitrator Tribunal or Court and/or any dispute is being referred to arbitrator.

12. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs………………………..(Rupees……………………………….) and this guarantee shall remain in force till……………… unless a claim is made on us within 3 months from that date, that is before all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities thereunder.

Dated…………………………………….. day of……………………………………….200

For and on behalf of Bank
PROFORMA FOR INDEMNITY BOND TO BE EXECUTED BY
THE CONTRACTOR FOR SECURED ADVANCE
AGAINST MATERIALS SUPPLIED FOR THE PROJECT

(On non-judicial stamp paper of appropriate value)

INDEMNITY BOND

THIS INDEMNITY BOND is made this ________________________________ day
of_____________________ 20_________ by________________________ (Contractor’s Name) a Company
registered under the Companies Act, 1956/Partnership firm/Proprietary concern having
its Registered Office at _______________. (hereinafter called as ‘Contractor’ which expression
shall include its successors and permitted assigns) in favour of Engineering Projects
(India) Limited, a Company incorporated under the Companies Act, 1956 having its
Registered Office at Core-3, Scope Complex, 7, Institutional Area, Lodhi Road, New
Delhi - 110 003 (hereinafter called “EPI” which expression shall include its successors
and assigns) :

WHEREAS EPI has awarded to the Contractor a Contract for the work of______________
vide its letter of Intent/Work Order No……………… dated………………. (hereinafter called
the “Contract”) in terms of which EPI is required to give “Secured Advance” to the
Contractor as per Clause no. 35 of the General Conditions of Contract against supply of
materials by the Contractor for the project on the security of materials, the quantities,
rates and other particulars of which are detailed in the Bill of Quantities for the said
Contract.

And WHEREAS by virtue of Clause no. 35 of the General Conditions of Contract of the
said Contract, the Contractor is required to execute an Indemnity Bond in favour of EPI
for the amount of “Secured Advance” towards the materials actually supplied by the
Contractor for the Contract Work from time to time to EPI for the purpose of performance
of the Contract. (hereinafter called the “Materials”).

“AND WHEREAS the Contractor has applied to EPI that they may be allowed “Secured
Advance” on the security of materials absolutely belonging to them and brought by them
to the site of the works for use in construction of the work”.

NOW THEREFORE, This Indemnity Bond witnesseth as follows:

1. That in consideration of the “Secured Advance” being given to the Contractor as
mentioned in the Contract, for the purpose of performance of the Contract, the
Contractor hereby undertakes to indemnify and shall keep EPI indemnified, for
the Actual Cumulative Amount of the “Secured Advance” given to the Contractor
from time to time against the said Contract. The Contractor hereby acknowledges
actual receipt of the materials etc. as per despatch title documents being/to be
handed over to EPI from time to time. The Contractor shall hold such materials
in trust as a “Trustee” for and on behalf of EPI.
2. That the Contractor is obliged and shall remain absolutely responsible for the safe transit/protection and custody of the materials at EPI’s project site against all risks whatsoever till the materials are duly used/erected in accordance with the terms of the Contract and the plant/package duly erected and commissioned in accordance with the terms of the Contract is taken over by EPI and the Secured Advance is fully adjusted/recovered as per terms of the Contract. The Contractor undertakes to keep EPI harmless against all losses, damages, deterioration and shortages that may be caused to the materials.

3. The Contractor undertakes that the materials shall be used exclusively for the performance/execution of the Contract strictly in accordance with its terms and conditions and no part of the materials shall be utilized for any other work or purpose whatsoever. It is clearly understood by the Contractor that non-observance of the obligations under this Indemnity Bond by the Contractor shall inter-alia constitute a criminal breach of trust on the part of the Contractor for all intents and purposes including legal/penal consequences.

4. That EPI is and shall remain the exclusive owner of the materials free from all encumbrances, charges or liens of any kind, whatsoever. The materials shall at all times be open to inspection and checking by the Engineer – In - Charge or other employees/agents authorized by him in this regard. Further, EPI shall always be free at all times to take possession of the materials in whatever form the materials may be, if in its opinion, the materials are likely to be endangered, misutilised or converted to uses other than those specified in the Contract, by any acts of omission or commission on the part of the Contractor or any other person or on account of any reason whatsoever and the Contractor binds himself and undertakes to comply with the directions of demand of EPI to handover the materials without any demur or reservation.

5. That this Indemnity Bond is irrevocable. If at any time any loss or damage occurs to the materials or the same or any part thereof is mis-utilised in any manner whatsoever, then the Contractor hereby agrees that the decision of the Engineer-In-Charge of EPI as to assessment of loss or damage to the materials shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and /or damaged materials at its own cost and/or shall pay the amount of ‘Secured Advance’ to EPI without any demur, reservation or protest. This is without prejudice to any other right or remedy that may be available to EPI against the Contractor to recover any amount or all the amounts of this Bond from any dues of the Contractor under the Contract or as per the law.

6. This Bond shall remain in force and effect till the completion of the work as per the aforesaid Contract and till all the amount recoverable under this Bond from the Contractor is fully recovered by EPI. The Bond can not be revoked by the Contractor without the written consent of EPI.

7. That Contractor also agrees that any change in the constitution of the Contractor shall not discharge them from their obligation and liability.

8. This Bond shall be treated as an additional addage to the Contract and nothing herein contained shall be construed to adversely affect the rights of EPI in the Contract.
IN WITNESS WHEREOF, the Contractor has signed this Indemnity Bond through its duly authorized representative on the date and place first above written.

For and on behalf of Contractor

(Contractor's Name)

WITNESS:

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Signature ..............................

Name (Executant) .....................

Designation ..........................

( Authorised representative )

Seal
FORM FOR GUARANTEE BOND
FOR ANTI-TERMITE TREATMENT

THIS AGREEMENT made this____ day of Two thousand _____ between M/s________ (hereinafter called the guarantor of the one part and M/s Engineering Projects (India) Limited, hereinafter called EPI hereinafter called the OWNER of the other part.

Whereas this agreement is supplementary to the contract hereinafter called the contract dated______ made between the guarantor of the one part and Engineering Projects (India) Ltd., of the other part whereby the Contractor inter-alia, understood to render the buildings and structures in the said contract recited, completed, termite proof. And whereas the guarantor agreed to give a guarantee to the effect that the said structure will remain termite proof for TEN YEARS to be so reckoned from the date after the maintenance period prescribed in the contract expires.

During this period of guarantee the guarantor shall make good all defects and for that matter shall replace at his risk and cost such wooden member as may be damaged by termite and in case of any other defect being found, he shall render the building termite proof at his cost to the satisfaction of the Engineer-In-Charge and shall commence the works of such rectification within seven days from date of issuing notice from the Engineer-In-Charge calling upon him to rectify the defects falling which the work shall be got done by EPI/ OWNER by some other Contractor at the guarantor's cost and risk and in the later case the decision of the Engineer-In-Charge as to the cost recoverable from the guarantor shall be final and binding.

That if the Guarantor fails to execute the Anti-Termite treatment or commits breaches hereunder then the Guarantor will indemnify EPI against all losses damages, cost expenses or otherwise which may be incurred by him by reasons of any default on the part of the guarantor in performance and observance of this supplemental Agreement. As to the amount of loss and or damage and/or cost incurred by EPI/ OWNER, the decision of the Engineer-In-Charge will be final and binding on the parties.

In witness where of these presents have been executed by the Guarantor_______ and by______________ for and on behalf of EPI on the day of month and year first above written.

Signed sealed and delivered by (Guarantor)

IN THE PRESENCE OF:
1.
2.

Signed for and on behalf of EPI by/ in presence of:
1.
2.
GUARANTEE TO BE EXECUTED BY CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

The agreement made this ................. day of ................. Two thousand ................. between ........................................ (hereinafter called Guarantor of the one part) and EPI (hereinafter called the Execution Agency of the other part).

WHEREAS this agreement is supplementary to a contract (hereinafter called the Contract), dated ............. and made between the GUARANTOR OF THE ONE part and EPI of the other part, whereby the Contractor, inter-alia, undertook to render the buildings and structures in the said contract recited completely water and leak proof.

AND WHEREAS the Guarantor agreed to give a guarantee to the effect that the said structures will remain water and leak proof for ten years from the date of handing over of the structure of water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the maintenance period prescribed in the contract.

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

a) Misuse of roof shall mean any operation, which will damage proofing treatment, like chopping of firewood and things of the same nature, which might cause damage to the roof.

b) Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts

c) The decision of the Engineer-In-Charge with regard to cause of leakage shall be final

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

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

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

Signed, sealed and delivered by Obligator in the presence of-

1.

2.

Signed for and on behalf of EPI by ________________

In presence of:

1.

2.
AGREEMENT FORM

This agreement made this day of (Month) (Year), between THE ENGINEERING PROJECTS (INDIA) LIMITED (EPI), (A Govt. of India enterprise) a company incorporated under the Companies Act, 1956 having its Registered and Corporate Office at Core-3, Scope Complex, 7, Institutional area, Lodhi Road, New Delhi – 110003 (hereinafter referred to as the “EPI” which expression shall include its administrators, successors, executors and assigns) of the one part and M/s (NAME OF CONTRACTOR) (hereinafter referred to as the ‘Contractor’ which expression shall unless the context requires otherwise include its administrators, successors, executors and permitted assigns) of the other part.

WHEREAS, EPI, is desirous of construction of (NAME OF WORK) (hereinafter referred to as the “PROJECT”) on behalf of the (NAME OF OWNER/MINISTRY) (hereinafter referred to as “OWNER”), and had invited Tenders as per Tender Documents vide NIT No. _____.

AND WHEREAS (NAME OF CONTRACTOR) had participated in the above referred Tender vide their tender dated _____ and EPI has accepted their aforesaid Tender and award the contract for (NAME OF PROJECT) on the terms and conditions contained in its Letter of Intent No. __________ dated ________ and the documents referred to therein, which have been unequivocally and unconditionally accepted by (NAME OF CONTRACTOR) vide their Letter of Undertaking dated _______ resulting into a contract.

NOW THEREFORE THIS DEED WITNESSETH AS UNDER:

ARTICLE 1.0 – AWARD OF CONTRACT

1.1 SCOPE OF WORK

EPI has awarded the contract to (NAME OF CONTRACTOR) for the work of (NAME OF WORK) on the terms and conditions in its Letter of intent No. __________ dated ______ and the documents referred to therein. The award of work has taken effect from (DATE) i.e. the date of issue of aforesaid letter of intent. The terms and expressions used in this agreement shall have the same meanings as are assigned to them in the “Contract Documents” referred to in the succeeding Article.

ARTICLE 2.0 – CONTRACT DOCUMENTS

2.1 The contract shall be performed strictly as per the terms and conditions stipulated herein and in the following documents attached herewith (hereinafter referred to as “Contract Documents”).

   a) EPI Notice Inviting Tender vide No. _________ date ______and EPI’s Tender Documents consisting of:

   i) Instructions to Tenderers and General Conditions of Contract (GCC) alongwith amendments/errata to GCC (if any) issued (Volume-I).
ii) Additional Conditions of Contract including Appendices & Annexures, Volume-II.

iii) Bill of Quantities alongwith amendments/corrigendum of schedule items, if any (Volume-III).

iv) Technical Specifications

v) Drawings

vi) ______________________________________________

b) (NAME OF CONTRACTOR) letter/proposal no._________________
dated ________ and their subsequent communication:

i) Letter of Undertaking of Tender Conditions dated ______________

ii) _____________________________________________________

iii) _____________________________________________________

2.2 EPI’s detailed Letter of Intent No. _________ dated ____ including Bill of Quantities. Agreed time schedule, Contractor’s Organisation Chart and list of Plant and Equipments submitted by Contractor.

2.3 All the aforesaid contract documents referred to in Para 2.1 and 2.2 above shall form an integral part of this Agreement, in so far as the same or any part thereof conform, to the Tender Documents and what has been specifically agreed to by EPI in its Letter of Intent. Any matter inconsistent therewith, contrary or repugnant thereto or deviations taken by the Contractor in its “TENDER” but not agreed to specifically by EPI in its Letter of Intent, shall be deemed to have been withdrawn by the Contractor without any cost implication to EPI. For the sake of brevity, this Agreement alongwith its aforesaid contract documents and Letter of Intent shall be referred to as the “Contract”.

ARTICLE 3.0 – CONDITIONS & CONVENANTS

3.1 The scope of Contract, Consideration, Terms of Payments, Advance, Retention Moneys, Taxes wherever applicable, Insurance, Agreed Time Schedule, Compensation for delay and all other terms and conditions contained in EPI’s Letter of Intent No. __________ dated _____ are to be read in conjunction with other aforesaid Contract Documents. The contract shall be duly performed by the Contractor strictly and faithfully in accordance with the terms of this contract.

3.2 The scope of work shall also include all such items which are not specifically mentioned in the Contract Documents but which are reasonably implied for the satisfactory completion of the entire scope of work envisaged under this contract unless otherwise specifically excluded from the scope of work in the Letter of Intent.

3.3 Contractor shall adhere to all requirements stipulated in the Contract documents.

3.4 Time is the essence of the Contract and it shall be strictly adhered to. The progress of work shall conform to agreed works schedule/contract documents and Letter of Intent.

3.5 This agreement constitutes full and complete understanding between the parties and terms of the presents. It shall supersede all prior correspondence to the extent of inconsistency or repugnancy to the terms and conditions contained in
Agreement. Any modification of the Agreement shall be effected only by a written instrument signed by the authorized representative of both the parties.

3.6 The total contract price for the entire scope of this contract as detailed in Letter of Intent is Rs. _________________ (Rupees _____________________________ only), which shall be governed by the stipulations of the contract documents.

ARTICLE 4.0 – NO WAIVER OF RIGHTS

4.1 Neither the inspection by EPI or the Engineer-In-Charge or Owner or any of their officials, employees or agents nor order by EPI or the Engineer-In-Charge for payment of money or any payment for or acceptance of, the whole or any part of the work by EPI or the Engineer-In-Charge nor any extension of time nor any possession taken by the Engineer-In-Charge shall operate as waiver of any provisions of the contract, or of any power herein reserved to EPI, or any right to damage herein provided, nor shall any waiver of any breach in the contract be held to be a waiver of any other or subsequent breach.

ARTICLE 5.0 – GOVERNING LAWS AND JURISDICTION

5.1 The Laws applicable to this contract shall be the laws in force in India and as amended from time to time.

Jurisdiction shall be of the Court (s) stated in the 'Memorandum' to the “Form of Tender” only.

5.2 Notice of Default

Notice of default given by either party to the other party under the Agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto, if delivered against acknowledgment due or by FAX or by registered mail duly addressed to the signatories at the address mentioned herein above.

IN WITNESS WHEREOF, the parties through their duly authorized representatives have executed these presents (execution whereof has been approved by the Competent Authorities of both the parties) on the day, month and year first above mentioned at New Delhi.

For and on behalf of:      For and on behalf of:
(NAME OF CONTRACTOR)     M/s. Engineering Projects (I) Ltd.
WITNESS:       WITNESS:
1.         1. 
2.         2. 

ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

QUALITY CONTROL FORMATS AND CHECKLISTS
### NAME OF PROJECT

### CONTRACT

<table>
<thead>
<tr>
<th>CONTRACT NO.</th>
<th>LOCATION BLOCK</th>
<th>FLOOR</th>
<th>AREA</th>
</tr>
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### CHECK LIST FOR CONCRETING

<table>
<thead>
<tr>
<th>LAYOUT</th>
<th>Alignment</th>
<th>Checked</th>
<th>Level of base</th>
<th>Checked</th>
<th>Dimensional Check</th>
<th>Checked</th>
<th>Starers</th>
<th>Location of cutouts &amp; services</th>
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</table>

<table>
<thead>
<tr>
<th>STAGING / SCAFFOLDING</th>
<th>Adequacy &amp; rigidity of Props, stays, bracings, conformity to scheme drgs.</th>
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<table>
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<tr>
<th>FORMWORK</th>
<th>Qty. of forms and support</th>
<th>Props adequate</th>
<th>Vertical form surface in alignment &amp; plumb</th>
<th>Even Surface</th>
<th>Oil sprayed</th>
<th>Gaps betwn shutters are properly closed</th>
<th>No space for sagging of Form work</th>
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<thead>
<tr>
<th>REINFORCEMENT</th>
<th>Cutting &amp; bending as per Bar bending schedule (Schedules attached)</th>
<th>Adequate taps</th>
<th>Welds</th>
<th>Chair / cover blocks</th>
<th>Placed as per scheme</th>
<th>Binding wire not touching shuttering</th>
<th>Fixtures, inserts</th>
<th>Cunduits in position</th>
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<table>
<thead>
<tr>
<th>Dowels &amp; positioning</th>
<th>Provided as per drg.</th>
<th>Walkway for</th>
<th>Labour provided</th>
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<tr>
<th>PRE-CONCRETING</th>
<th>Concreting Arrangements</th>
<th>Approval of Construction joint</th>
<th>Mixer / vibrator</th>
<th>Condition &amp; mixing</th>
<th>Top level of Concrete</th>
<th>Marked</th>
<th>No space for sagging of Form work</th>
<th>Transportation &amp; Placing arrangement</th>
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<tr>
<th>POST-CONCRETING</th>
<th>Compaction Checked</th>
<th>Removal of Laitance</th>
<th>Post Concreting Level/Dimensions</th>
<th>No. of Cubes Cast</th>
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<table>
<thead>
<tr>
<th>DESHUTTERING &amp; CLEARING</th>
<th>Curing days</th>
<th>Surface finish</th>
<th>Concrete Test</th>
<th>Results OK</th>
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120
**NAME OF PROJECT**

**CHECK LIST FOR MASONRY WORK**

**REF DRAWING No.**

**LOCATION BLOCK**

**FLOOR**

**AREA**

<table>
<thead>
<tr>
<th>CONTRACT No.</th>
<th>LAYOUT</th>
<th>CHECK LIST FOR MASONRY WORK</th>
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<tbody>
<tr>
<td></td>
<td>Alignment &amp; wall Thickness Checked</td>
<td>Brick on edge (top course)</td>
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<tr>
<td></td>
<td>SCAFFOLDING Adequacy of props, Stays, platform</td>
<td>Rigidity of base</td>
</tr>
<tr>
<td></td>
<td>PRE-LAYING Working arrangements &amp; service provisions checked</td>
<td>Bricks as per specification</td>
</tr>
<tr>
<td></td>
<td>LAYING Joint thickness &amp; course Ht. As specified</td>
<td>Joint alignment Checked</td>
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<tr>
<td></td>
<td>Raking of joints Done (if applicable)</td>
<td>Bearing plaster for Concrete</td>
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<tr>
<td></td>
<td>CURING AND CLEARING Proper curing of const. Joint</td>
<td>Scaffolding removed (if required)</td>
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<th>QTY</th>
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<td>DATE</td>
<td>SITE ENGR</td>
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| CONTRACTOR | DATE | SITE INCHARGE | DATE | CONSULTANT | DATE |

121
<table>
<thead>
<tr>
<th>CONTRACT</th>
<th>CHECK LIST FOR PLASTERING WORK</th>
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<tbody>
<tr>
<td>CONTRACT NO.</td>
<td>REF DRAWING No.</td>
<td>LOCATION BLOCK</td>
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<tr>
<td>SCAFFOLDING</td>
<td>Platform</td>
<td>Stability</td>
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<tr>
<td>SERVICE</td>
<td>All chasing work</td>
<td>Fixing in position</td>
</tr>
<tr>
<td>SURFACE PREPARATION</td>
<td>Clearing &amp; rating of surface</td>
<td>Roughening</td>
</tr>
<tr>
<td>PLASTERING</td>
<td>Mix &amp; W/P compound</td>
<td>Costing/thickness</td>
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<tr>
<td>FINISHING</td>
<td>Texture</td>
<td>Curing</td>
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</table>

**Signature**

**W.O. ITEM**

**UNIT**

**QTY**

**CONTRACTOR**

**DATE**

**SITE ENGR**

**DATE**

**SITE INCHARGE**

**DATE**

**CONSULTANT**

**DATE**
<table>
<thead>
<tr>
<th>EXCAVATION</th>
<th>LAYING/RCC</th>
<th>MANHOLES</th>
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<tbody>
<tr>
<td>Layout</td>
<td>Bed concrete as per Specifications</td>
<td>Bricks as per specifications</td>
</tr>
<tr>
<td>Slope / cutting as per Specifications</td>
<td>RCC pipes as per Requirement</td>
<td>Mortar as per specifications</td>
</tr>
<tr>
<td>Level</td>
<td>Jointing of Pipes</td>
<td>Plastering</td>
</tr>
<tr>
<td>Boxing</td>
<td>Strata bore Dewatering (wherever required)</td>
<td></td>
</tr>
<tr>
<td>End of pipes plugged</td>
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NAME OF PROJECT ________________________________
<table>
<thead>
<tr>
<th>SCAFFOLDING</th>
<th>Platform</th>
<th>Stability</th>
<th>Movement space</th>
<th>Approach to Height</th>
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<tbody>
<tr>
<td>SERVICE PROVISIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roughening / Haeking of surface done</td>
<td></td>
<td>Fixing metal / latex</td>
<td>Mortar level &amp; Guides made</td>
<td>Surface moistened / Cement slurry</td>
</tr>
<tr>
<td>BASE PLASTER</td>
<td>Mix &amp; W/P compound</td>
<td>Coating / thickness</td>
<td>Corners &amp; edges sharp &amp; at right angles lines &amp; levels maintained</td>
<td></td>
</tr>
<tr>
<td>CHECK LIST FOR GRIT WASH</td>
<td></td>
<td>Numbered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOP LAYER</td>
<td>Fixing of beading for grooves as per drawing</td>
<td>Lines and levels of grooves maintained</td>
<td>Mix as per specification</td>
<td>Texture of final surface</td>
</tr>
<tr>
<td>SIGNATURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTRACTOR DATE</td>
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<td>SITE INCHARGE DATE</td>
<td>CONSULTANT DATE</td>
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</tr>
<tr>
<td>CONTRACT No.</td>
<td>CHECK LIST FOR WASTE/SOIL/VENT PIPES ETC.</td>
<td>REF DRAWING No.</td>
<td>LOCATION BLOCK</td>
<td>FLOOR</td>
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<tr>
<td>-------------</td>
<td>------------------------------------------</td>
<td>----------------</td>
<td>---------------</td>
<td>-------</td>
</tr>
<tr>
<td>MATERIAL</td>
<td>Make as specified</td>
<td>Thickness / dia as specified</td>
<td>Length &amp; dia as specified</td>
<td>No cracks or holes visible</td>
</tr>
<tr>
<td>LAYOUT</td>
<td>Space distribution &amp; Alignment as specif.</td>
<td>Plumb of vertical line checked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIXING PIPE &amp; FITTINGS</td>
<td>Qty available for pipes fittings &amp; jointing material as per size &amp; fixing</td>
<td>Cutting &amp; Jointing as specified</td>
<td>Fixing of fittings &amp; specialties as specified</td>
<td>Connection with corr. internal networks</td>
</tr>
<tr>
<td>SMOKE TEST</td>
<td>Open ends plugged</td>
<td>Injection of smoke Pressure</td>
<td>No leakage of Smoke</td>
<td>Section is OK</td>
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<thead>
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<th>W.O. ITEM</th>
<th>UNIT</th>
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</table>

125
**NAME OF PROJECT**

<table>
<thead>
<tr>
<th>CONTRACT No.</th>
<th>CHECK LIST FOR MOSAIC FLOORING</th>
<th>REF DRAWING No.</th>
<th>LOCATION BLOCK</th>
<th>FLOOR</th>
<th>AREA</th>
</tr>
</thead>
</table>

**LAYOUT**
- Sub base Prepared
- Slope Provision checked

**BASE LAYER**
- Mix As specified
- Evenness Checked
- Joints treatment if any, provided

**TOP LAYER**
- Mix As specified
- Proper leveling Done

**FINISHING**
- Grinding

- Provision of Services checked
- Panelling (max size Separation strips
- Level of Sub base checked
- Water / cement Slurry applied
- Cement concrete Thickness checked
- Ramming / leveling Compaction done
- Trowelling finish proper
- Repair applied at grinding stages
- Polishing

<table>
<thead>
<tr>
<th>W.O. ITEM</th>
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<th>QTY.</th>
</tr>
</thead>
</table>

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<th>SITE INCHARGE</th>
<th>DATE</th>
<th>CONSULTANT</th>
<th>DATE</th>
</tr>
</thead>
</table>

126
### NAME OF PROJECT

### CHECK LIST FOR GLAZED TILE FLOORING

<table>
<thead>
<tr>
<th>LAYOUT</th>
<th>Fixing pattern</th>
<th>Level of base &amp; dark height marked</th>
<th>Finish level guide</th>
<th>Door &amp; window frames in position</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASE</td>
<td>Mix</td>
<td>Thickness</td>
<td>Evenness</td>
<td>Verticality, corners at right angle</td>
</tr>
<tr>
<td>LAYING</td>
<td>Moistening of tiles</td>
<td>Plan position of cut pieces at corner</td>
<td>Cut to size</td>
<td>Chamfering of edges &amp; edge matching proper</td>
</tr>
<tr>
<td></td>
<td>Cement slurry adhesive</td>
<td>Level &amp; plumb checked</td>
<td>Smooth edge</td>
<td>Raking / Jointing</td>
</tr>
<tr>
<td>FINISHING</td>
<td>Grounting of joints</td>
<td>Curing of joints</td>
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<td></td>
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### SIGNATURE

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<th>DATE</th>
<th>CONSULTANT</th>
<th>DATE</th>
</tr>
</thead>
</table>

127
<table>
<thead>
<tr>
<th>MATERIAL AGGREGATE</th>
<th>Gradation as specified</th>
<th>Crushing strength as specified</th>
<th>No of layers</th>
<th>Thickness of layers starting from subgrade</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCREENINGS</td>
<td>Gradation as specified</td>
<td>Crushing strength As specified</td>
<td>waiting &amp; rolling as specified</td>
<td></td>
</tr>
<tr>
<td>MOORUM</td>
<td>Gradation as specified</td>
<td>Silt content as specified</td>
<td>Fill material</td>
<td></td>
</tr>
<tr>
<td>LAYOUT</td>
<td>Alignment of central line as per drawings and reference points</td>
<td>Marking of Carriage way edges as per drawings</td>
<td>Cross section levels of precedent Layer recorded</td>
<td></td>
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<tr>
<td>WATER BOUND MACADAM</td>
<td>Templates placed of specified thickness</td>
<td>Placing, leveling of stone aggregate</td>
<td>Stone Screening spread as specified</td>
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<tr>
<td></td>
<td>Dry rolling as specified</td>
<td>Application of moorum as specified</td>
<td>Wet rolling / compaction as specified</td>
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<th>SITE INCHARGE</th>
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<th>CONSULTANT</th>
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NAME OF PROJECT ____________________________
LOCATION ____________________________
**Technical Specification**

**JOINERY**

8.1 Indian Standards

The following IS apply to this section:

<table>
<thead>
<tr>
<th>I.S No</th>
<th>Subject</th>
</tr>
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<tbody>
<tr>
<td>303-1975</td>
<td>Specification for plywood for general purposes (second revision) with Amdt No.1 to 3.</td>
</tr>
<tr>
<td>1328-1982</td>
<td>Specification for veneered decorative plywood (second revision)</td>
</tr>
<tr>
<td>1659-1979</td>
<td>Specification for block boards (first revision)</td>
</tr>
<tr>
<td>2202 (part I)-1983</td>
<td>Specification for wooden flush door shutters (solid core type), part I, plywood face panels (fourth revision)</td>
</tr>
<tr>
<td>3087-1985</td>
<td>Wood Particle boards, (Medium density) for general purposes (first revision)</td>
</tr>
<tr>
<td>3097-1980</td>
<td>Specification for veneered particle boards (first revision)</td>
</tr>
</tbody>
</table>

**MATERIALS**

8.2 **Plywood**

Plywood used for paneling of door shutters shall be B WR grade conforming to IS 303-1975. Specification for plywood for general purposes. Decorative plywood panels where indicated, shall conform to IS 1328, specification for veneered decorative plywood.

8.3 **Block Board**

Block boards used for paneling of doors shutters shall be grade I, exterior grade commercial type and conform to. IS 3087 and shall have been bonded with BWR type of synthetic resin adhesive.

8.4 **Veneered Particle Board**: Veneered particle board used for panels shall be bonded with BWR type synthetic resin adhesive and shall conform to exterior grade of IS 3097, specification for veneered particle boards. Where indicated veneered particle boards shall be decorative type. Particle board used for core of veneered particle board shall be type Ex. SO GP or SOD conforming to IS 3087 and shall have been bonded with BWR type of synthetic resin adhesive.

**WORKMANSHIP**

8.5 Joiner’s Work Generally

8.5.1 **Species of Timber**: Only the species of timber indicated shall be used.

8.5.2 All exposed surfaces of joinery shall be planed smooth (wrought) and neatly and truly finished to the full dimensions, rebates, rounding and mouldings as indicated. Unless dimensions are indicated to be finished dimensions, a tolerance of 1 mm shall be permitted for each wrought face.

8.5.3 Jointing : The contractor shall observe the following principles in forming joints:

(a) To cut the joints and arrange the fastenings in such a way so as to weaken as little as possible the pieces of timber they connect.

(b) To place each abutting surface in a joint, as nearly as possible, perpendicular to the pressure it has to transmit.

(c) To form and fit accurately every pair of surfaces that come in contact.
8.5.4 Joints shall be made carefully and accurately. All mortice and tenon and other joints shall fit fully and truly with out wedging or filling and finished neatly. Where indicated, butt joints shall be cross tongued. The tongue shall be cut at right angles or diagonally to the grains of the wood.

8.5.5 Defective knots, when permitted on surfaces exposed to view, shall be completely bored or cut out and tightly plugged with the same timber species and properly glued in. The grains of plug shall run in the direction of the grains of piece.

8.5.6 Framing shall be done in the best possible manner. Members shall be fabricated neatly and accurately so that these can be assembled without being unduly packed. Strained or forced into position and when built up shall be true to shape and free from twist or open joints. Framed joints shall be glued together and pinned with bamboo or hard wood pins.

8.5.7 All joiner's work shall be cut and framed together well ahead of their incorporation in the work but shall not be edged up until required for fixing in position and passed by the EIC. Any portion that may warp or develop shakes or other defects shall be replaced with new before being wedge up.

8.5.8 The contact surfaces of mortice and tenon shall be glued before putting together with bulk type synthetic resin adhesive to IS 851-1978 suitable for construction work in wood. Tongued and grooved joints shall also be properly glued together with a suitable adhesive.

8.6 Nailing, Screwing etc.

Nailing screwing etc., of the various members of joinery, where necessary shall be done as directed by the EIC. When driving the screws, it is advisable that in case of hard timbers pilot holes are drilled before fixing the screw. The screws shall be driven tight fit and straight.

8.6.1 Clearing:

After the plaster and grouting have dried, all splatter and marks of cement shall be removed and the frames cleaned.

8.6.2 In the case of frames without sill the vertical members shall be buried in the floor for the full thickness of the floor finish.

8.6.3 The holdfasts shall be tightly fixed to the frame by means of bolts or wood screws as indicated, the bolt hole in the frame being plugged suitably and finished neat unless otherwise indicated.

8.7 Shutters Generally

8.7.1 The types of shutters for doors, windows, ventilators, cupboards, etc., viz. panelled, glazed, wire gauzed, partly paneled and partly glazed or gauged, ledged braced and battened, louvered etc., shall be as indicated, and detailed in the drawings.

8.7.2 All members of "the shutter shall be made out of one piece and shall be straight without any wrap or bow. They shall have smooth, well planned surfaces at right angles to each other. The right angles of the shutters shall be checked by measuring the two diagonals from one extreme corner to the opposite one.

8.7.3 The contact surfaces of mortice and tenon and tongued and grooved joints shall be glued before putting together.

8.7.4 In the case of double leaved shutters the meeting 'stiles shall be rebated 20 mm or as shown on drawings. The rebating shall be splayed or square, as directed.

8.7.5 All shutters shall be finished smooth with well planned faces.

8.7.6 Tolerance in the thickness of joinery shall be ±2 mm.

8.7.7 Shutters shall be of correct size and shall, fit into the frames without excessive cutting at the edges. Adding of wooden strips etc., to make up the size shall not be allowed.
8.7.8 Factory made shutters:
Where indicated the contractors shall supply flush, paneled glazed and gauzed door and window shutters made in an approved factory. Tolerance on the width and height of factory made shutters shall be +/- 3mm provided the shutter snugly fits into the frame, glass in case of glazed shutters and of wire cloth in case of gauzed shutters.

8.9 Fixing of Shutters

8.9.1 The size of the openings and the frames shall be checked and also the verticality of the side frames and the level position of the floor and the wall. Any adjustment necessary shall be made before installation of the shutters. The shutters shall be installed only after the walls on either side have dried.

8.9.2 Any transit defects or storage defects in shutters shall be filled up with a good putty. Any comer opening may be rectified by the use of glued and pressing by 'c' clamps. Any damage to moulding or glazing bars or other fixtures shall be rectified at site by use of similar materials.

8.9.3 Width of hinges shall suit the shutter thickness.

8.9.4 Cleats, where indicated, shall properly fit in the rebates of the chowkats to effectively stop the shutter from closing.

8.9.5 When driving screws it is advisable that in case of hard timbers pilot holes are drilled before fixing the screws. The screws shall be driven tight fit and straight.

8.9.6 Shutters shall be checked after fixing for proper location alignment and swinging. After all the fixtures have been fitted, the shutters shall be tried again for proper closure, handling and movement. Any rectification necessary shall be done.

8.9.7 Fixed Shutters:
Shutters fixed in the frames shall be secured to the frames with wood screws of adequate size at intervals

DOOR AND FRAME FEATURES:

Testing: Stop Noise Door products are tested in accordance with the most recent ASTM E90 standards at accredited Acoustical Laboratories.

Services: Contractor shall provide the necessary shop drawings for approval of the Consultant and Engineer – in – Charge.

IRONMONGERY

HINGES
SS Ball bearing butt Hinges 4mm thick and 150x102mm (3 numbers or More), fixed flushed to the frame and shutter.

LOCK
Mortise Sash Lock with Lever Handles, Mortise Dead Bolt, Mortise Latch, Panic Devices etc

FLUSH BOLTS (DOUBLE DOOR)
Concealed extended lever action flush bolts provided on the top of the door to the leading stile edge.

DOOR CLOSERS
Suitable Door Closers shall be provided as directed by the Consultant / EIC.

ADDITIONAL ACCESSORIES
Electro Magnetic Hold Open Device, Smoke Seals for Air tightness, Automatic Door Bottoms etc., can be provided if required.

**Mode of measurements:**

The door shall be measured including the frame outer to outer. The square meter areas for shutters shall be measured outside to outside for the exposed surfaces of shutter including the frame. The linear dimensions shall be measured up to two places of decimals of a meter. The area for payment shall be worked out correct up to two places of decimals of a square meter. The rate for shutters shall include:

- Cost of supply, assembly and erecting in position.
- Cost of labour for making adjustments in frames, if required, shutters and also for fixing required fittings and fixtures mentioned in above paragraph.

The rate for individual item mentioned in the schedule of quantities shall include cost of shutters, labour for provision of glass for vision panel, hardware fittings mentioned in the ironmongery heading, transporting charges and labour for fixing of fixtures and fastening of door closers and painting and polishing to match the wall panel surface as specified.

**BUILDER'S HARDWARE**

**9.1 Indian Standard**

The following IS apply to this section with latest revision:

<table>
<thead>
<tr>
<th>I.S.No</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>204 (part I) 1978</td>
<td>Specification for tower bolts, Part I, Ferrous tower bolts (fourth revision)</td>
</tr>
<tr>
<td>204 (part-II) 1978</td>
<td>Specification for tower bolts, Part II, Non Ferrous tower bolts (fourth revision with Amdt. No.1)</td>
</tr>
<tr>
<td>205-1978</td>
<td>Specification for Non ferrous metal butt hinges (third revision)</td>
</tr>
<tr>
<td>206-1981</td>
<td>Specification for tee and strap hinges (third revision with Amdt. No.1)</td>
</tr>
<tr>
<td>207-1964</td>
<td>Specification for gate and shutter hooks and eyes (revised)</td>
</tr>
<tr>
<td>208-1979</td>
<td>Specification for door handles (third revision)</td>
</tr>
<tr>
<td>281-1973</td>
<td>Specification for mild steel sliding door bolts for use with pad-locks (second revision)</td>
</tr>
<tr>
<td>362-1982</td>
<td>Specification for parliament hinges (fourth revision)</td>
</tr>
<tr>
<td>363-1976</td>
<td>Specification for hasps and staples (third revision)</td>
</tr>
<tr>
<td>364-1970</td>
<td>Specification for fanlight catch (second revision)</td>
</tr>
<tr>
<td>452-1973</td>
<td>Specification for door springs, rat-tail, type (second revision)</td>
</tr>
<tr>
<td>453-1973</td>
<td>Specification for double acting spring hinges (second revision)</td>
</tr>
<tr>
<td>729-1979</td>
<td>Specification for drawer locks, cup board locks and box locks (third revision)</td>
</tr>
<tr>
<td>1019-1974</td>
<td>Specification for rim latches (second revision with Amdt. No.1)</td>
</tr>
<tr>
<td>1341-1981</td>
<td>Specification for steel butt hinges (fourth revision with Amdt. No.1 &amp; 3)</td>
</tr>
<tr>
<td>1568-1970</td>
<td>Specification for wire cloth for general purposes (first revision with Amdt. No.1)</td>
</tr>
<tr>
<td>1823-1980</td>
<td>Specification for floor door stoppers (third revision)</td>
</tr>
</tbody>
</table>
MATERIALS

9.2 Builder's Hardware Generally

9.2.1 Materials:

Articles of builder's hardware (fittings) shall be of mild steel, cast iron, brass, aluminium alloy etc., as indicated. The type and size of fittings shall also be indicated. Fittings shall be of approved make.

9.2.2 Shape and dimensions:

The shape and dimensions of the fittings shall conform to the shape and dimensions given in the relevant IS specifications, unless otherwise indicated. Where however, shape of fittings or its components are indicated in the relevant IS Specification, as illustrative, they are not intended to limit their design. Such fittings or components shall be provided of the shape as approved by the consultant and EIC.

9.2.3 Where no IS Specification are indicated, such fitting shall be provide as approved and directed by the consultant and EIC.

9.2.4 Finish:

Except where otherwise specified, articles of builder's hardware shall have the following finish:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Mild steel and cast iron fittings</td>
<td>:</td>
</tr>
<tr>
<td>(b)</td>
<td>Brass fittings</td>
<td>:</td>
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<tr>
<td>(c)</td>
<td>Aluminium fittings</td>
<td>:</td>
</tr>
</tbody>
</table>

9.2.5 Manufacture:

Fittings shall be well made and finished to the correct shape and size, free from surface defects and flaws and shall have smooth action. Cast fittings or components' shall be free from casting and other defects. All burrs, sharp edges and corners shall be removed and finished smooth.

9.2.6 Screws:

Unless otherwise indicated, brass articles shall be fixed with brass or stainless steel screws and mild steel, cast iron and aluminium articles with steel chromium plated screws or as indicated. Screws shall be of sizes as indicated in the I.S specification for the fittings or as required.
9.2.7 Tower Bolts

9.3.1 Generally:

Steel tower bolts shall comply with IS 204(part-I)-1978, specification for tower bolts, part-I, ferrous metals, brass and aluminium tower bolts shall comply with IS 204(part-I)-1978. Specification for tower bolts. Part-II, non-ferrous metals. The type and size of the tower bolts shall be as indicated.

9.3.1.1 Barrel and skeleton tower bolts, wherever possible, shall have the knob integral with bolts. In case it is not possible to provide a single piece construction of bolts, the knob may preferably be fitted to the bolts with a pin or alternatively screwed and riveted to the bolts, and its shape may be round, half round spherical or conical as indicated and of robust construction.

9.3.1.2 Where diameter of bolts of particular size of tower bolt is stated in the IS as 10 or 12 mm, the bolt shall be of 10 mm dia upto size 125 mm and 12 mm dia for sizes 150 mm and above.

9.3.1.3 All M.S tower bolts made with steel 1.2 mm thick M.S sheet and above shall have countersunk screw holes.

9.3.1.4 Non-Ferrous Tower Bolts: -

Brass and aluminum tower bolts shall be of types as given above. These shall be provided with a small spring and ball on the inside of the barrel for smooth working. Brass bolts and barrels shall be polished bright. Aluminium alloy bolts and barrels shall be powder coated, size of bolt shall be as indicated. Aluminium barrel tower bolts with barrel and bolt of extruded sections of aluminium alloy.

9.4 Flush Bolts.

Flush bolts shall comply with IS 5187 specification for flush bolts. These shall be of type –2 and of the following material and finish, as indicated: -

(a) Brass flush bolt with cast brass body and plate and cast brass or extruded brass bolt, and steel strip spring.
(b) Aluminium flush bolt with cast aluminium alloy or extruded aluminium alloy body and plate and extruded aluminium alloy bolt and steel strip spring.

9.3.1 Brass flush bolts shall be bright finished. Aluminium flush bolts shall be powdered coated.

9.5 Sliding Door Bolts

9.5.1 Mild Steel Sliding Door Bolts:

These shall be bolt type and comply with the requirement of IS 281. Hasp, clips, and staple plate shall be made from mild steel sheets. Sliding bolts shall be made from round mild steel bar.

Hasp, bolt, staple and clips or fixing bolts shall be copper oxidised in accordance with IS 1378 or plated with nickel or chromium in accordance with IS 1068 as indicated.

9.5.2 Non-Ferrous Metal Sliding Door Bolts: -

These shall comply with IS 2681, specification for non-ferrous sliding door bolts for use with padlock.

9.5.2.1 The sliding door bolt shall have a smooth sliding action. The hasp, when not cast integral with the bolt, shall be properly secured to the bolt. Sliding bolts shall be provided with fixing bolts. Brass bolts shall have satin finish or polished. Aluminium bolts shall be powder coated.

9.6 Steel Locking Bolts

These shall comply with IS 7534, specification for mild steel locking bolts with holes for padlocks. Locking bolt shall have smooth sliding action. Bolt shall be made from mild steel and polished bright. The plate and strap shall be firmly riveted or spot welded and shall be stove enameled black. Locking bolt shall be Type II size of bolt shall be indicated.
9.7 **Hinges**

9.7.1 **Generally:**

Hinges shall be well made and shall be free from flaws and defects. All hinges shall be cut clean and square. The hole for the hinge pin shall be central and square to the, knuckles/ boss. All sharp edges and corners shall be removed. The sides of the knuckles shall be straight and at right angles to the flap. The movement of the hinges shall be free, easy and square and working shall not have any play or shake. The hinge pin shall fit inside the knuckles firmly and riveted in the case of steel hinges, and riveted or firmly notched in the case of non-ferrous metal butt hinges and properly finished. Rivet bead shall be well formed so as not to allow any play or shake. All screw holes shall be clean countersunk, suitable for countersunk head wood screw.

9.7.2 **Steel butt hinges** shall be of cold rolled mild steel and shall comply with IS 1341 specification for steel butt hinges. Steel butt hinges are classified as lightweight, medium weight and heavy weight. Hinges shall be of heavy weight, unless otherwise indicated. The pins shall be of mild steel/stainless steel. Hinges shall be finished bright with smooth surface.

9.7.3 **Non-Ferrous Metal Butt Hinges:**

Brass and Aluminium butt hinges shall comply with IS 205 specification for non-ferrous metal butt hinges and shall be of cast brass, extruded brass or extruded aluminium alloy, as indicated. Brass hinges shall be polished bright or stain finished. Aluminium hinges shall be powder coated.

9.7.3.1 In case of brass hinges, the hinge pin shall comply with IS 205. In case of aluminium alloy hinges, the hinge pin shall be of mild steel/stainless steel, galvanized, where indicated.

9.7.3.2 Non ferrous metal butt hinges shall be of the size as indicated

9.7.4 **Mild Steel Tee Hinges:**

M.S.Tee hinges shall comply with IS 206. Specification for tee and strap hinges' and shall be of medium type; or of heavy type where indicated. Tee hinges shall be finished stove enameled black.

9.7.5 **Parliament Hinges:**

Parliament hinges shall comply with IS 362 specification for the parliament hinges. Requirement of the hinge pin and finish of the hinges, shall be as described for butt hinges.

9.7.6 **Continuous (piano) Hinges:**

Continuous (piano) hinges shall be as per IS 3818 Type II specification for continuous (piano) hinges. These shall be of mild steel galvanized or aluminium alloy as indicated. In the case of aluminium hinges, the hinge pin shall be of aluminium and in the case of steel hinges, the hinge pin shall of mild steel Mild steel hinges shall be bright polished chromium plated. Aluminium hinges shall be anodized.

9.7.7 **Double Acting Spring Hinges:**

Double acting spring hinges shall comply IS 453. Specification for double acting spring hinges. MS hinges shall be finished store enameled black.

9.7.8 **Door Springs Rat-Tail Type:**

These shall conform to IS 452-1973 specification for door springs, rat-tail type and shall be of mild steel or brass as indicated. In case of mild steel door springs, casing, tail rod, spindle cap and base plate shall be stove enamelled, black, spindle, roller plate and roller shall be bright finished. Brass door spring shall be bright finished. Spring for both mild steel and brass door spring shall be of mild steel wire, copper oxidized or electro galvanized as indicated.

9.8 **Latches**

Latches shall be supplied left handed or right handed depending on the type of door to which they are fitted and as directed.
9.8.1 Rim Latches:

These shall comply with Type I of IS 1019. Specification for rim latches. They shall be of mild steel brass or aluminium alloy as indicated. Locking pin shall be provided to facilitate locking from one side. In case of mild steel rim latches, the body, striking box, spindle and back plat shall be of mild steel; the latch bolt, follower, locking pin, knobs, and disc shall be of brass. In the case of brass and aluminium alloy latches, body striking box and back end plate and disc shall be of brass and aluminium alloy respectively. All other components shall be of brass. Spring for mild steel, brass and aluminium rim latches shall be of steel wire. Spring type lever handles may be provided in lieu of knobs where indicated. When the knob / lever handle of the latch bolt shall draw smoothly into the body.

Mild Steel rim latches shall be finished stove enameled black. Brass latches shall have bright or satin finish. Aluminium latches shall be powder coated.

9.8.2 Mortice Night Latch:

Mortice night latch shall conform to IS 3847. Specification for mortice night latches. These shall be of mild steel brass or aluminium alloy as indicated.

Various components and finish shall be as described for mortice locks (vertical type) Face plate shall be provided in front of case plate.

9.8.3 Mortice Latch (Vertical Type):

Mortice latch (vertical type) shall conform IS 5930. Specification for mortice latch (vertical type). These latches shall be capable of being operated both from inside and outside and shall be provided with a thumb turn knob fitted on the handle plate in order to close the door from inside. The latches will be of mild steel or brass or aluminium alloy as indicated. Various components and finish shall be as described for mortice locks (vertical type). Face plate shall be provided in front of the case plate, size of latch shall be indicated.

9.9 Locks

9.9.1 Generally:

Number of levers shall be as indicated. The locks shall be supplied with two keys. Where more than one lock is provided no key of the lock shall fit any other lock supplied. All components of the locks and keys shall be finished smooth to minimize frictional resistance in the working. The size of lock shall be indicated.

9.9.2 Mortice locks (Vertical Type):

These shall conform IS 2209. Specification for mortice lock (vertical type). These shall be of mild steel, brass or aluminium as indicated. No. of levers shall also be as indicated.

9.9.2.1 The lock shall be made easy working with lever and shall be capable of being opened with the key from both inside and outside. Face plates shall be provided in all locks. Mild steel body shall be given a protective coating such as painting. Brass body shall be finished bright. Aluminium alloy body shall be powder coated. Face plate and striking plate shall be finished smooth, and finished bright for brass and mild steel locks; and powder coated for aluminium locks.

9.9.3 Rebated Mortice Locks:

These shall conform to IS 6607. Specification for rebated mortice locks (vertical type). These shall be of mild steel, brass or aluminium as indicated. Material for various components of rebated mortice locks and their finish shall be as described for mortice locks (vertical type).
9.10  **Hasps and Staples**

These shall conform to IS 363. Specification for hasp and staples. These shall be of the following types as indicated:

- Mild steel hasp and staple-wire type.
- Mild steel hasp and staple-safety type.
- Brass hasp and staple-safety type.
- Aluminium alloy hasp and staple-safety type.

9.10.1  Hasps and staples shall be well made and free from defects. The hinge pin shall be of mild steel in the case of hasp and staples. The hasps shall fit the staples correctly. The staple, except in the case of cast one, shall be riveted properly to its plate. The hinge pin for the safety type hasp shall be riveted and rivet head properly formed and finished. Screw holes shall be clean and counter sunk to suit counter sunk head wood screws.

9.10.1.2  Mild steel hasps and staples shall be stove enameled black. Brass hasps and staples shall be finished bright and covered with clear lacquer. Aluminium alloy hasps and staples shall be powder coated.

9.11  **Handles**

These shall conform to IS 208. Specification for door handles.

9.11.1  Door handles shall be finished smooth. When the grip portion of the handle is joined with the base piece by mechanical means, the arrangement shall be such that the assembly handle shall have adequate strength. Cast iron, malleable cast iron and mild steel door handles shall be finished stove enameled black. Brass handles shall be with bright polished finish. Aluminium handles shall be powder coated.

9.12  **Floor Door Stoppers**

These shall conform to IS 1823. Specification for floor door stoppers.

9.12.1  The door stopper shall be well made and shall have smooth action. The body or housing of the door stopper shall be cast in one piece and it shall be fixed to the cover plate by means of brass or aluminium screws. The spring shall be fixed firmly to the pin. The tongue, which would be pressed while closing or opening of the door, shall be connected to the lower part by means of copper pin. On the extreme end, a rubber piece shall be attached to absorb shocks due to the pulling action of the door.

9.12.1.1  The exterior of the brass door stopper, which will be in flush and above the floor, shall be finished bright or satin and exterior of aluminium stopper shall be powder coated.

9.13  **Door Closers (Hydraulically Regulated)**

These shall comply with IS 3564, specification for door closer and shall be of designation as indicated. Door closers shall have aluminium alloy body, as indicated. Closers shall be universal type suitable for both anticlockwise and clockwise without any change in parts of the closers.

Door closers with aluminium body shall be as per IS.

The surface of the closer shall be clean; without sharp edges, free from cracks, burrs, dents or any other visible surface defects. The door closer shall not allow any sign of leakage under working conditions. The closing time shall be easily adjustable by means of regulating screw.

**WORKMANSHIP**

9.15  **Generally**

All builder’s hardware shall be fixed to joinery in a secure and efficient manner. Special attention shall be given to the size and fixing of screws to ensure that the screws are driven (and not hammered) tight and the heads of the screw do not protrude.

9.16  **Hinges**

All hinges except T or strap hinges shall be countersunk into the edge of timber joinery and frames to a depth equal to the thickness of the leaf of the hinge.
9.17  **Fanlight, etc.**
When fanlights or windows are center hung, fanlight pivots shall be fixed slightly off the center so that the fanlights and windows may normally remain in the open position.

9.18  **Metal Sockets**
These shall be provided to all tower bolts and sliding bolts where the bolts enter brick, stone, or concrete. These shall be securely fixed flush with the surface into mortices and cemented. Mortice plates over holes shall be provided where the soots enter wood.

9.19  **Oiling**
All locks, bolts, springs, and other items of builder's hardware with moving parts shall be properly oiled and handed over in working condition on completion.

**STEEL, IRON AND ALUMINIUM WORK**

10.1 **Indian Standards** The following IS with latest revision apply to this section:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>210-1993</td>
<td>Specification for Grey Iron casting (Fourth revision)</td>
</tr>
<tr>
<td>277-2003</td>
<td>Specification for Galvanised Steel sheet (plain and corrugated) (Sixth revision)</td>
</tr>
<tr>
<td>278-2001</td>
<td>Specification for Galvanised Steel Barbed wire for fencing (Third revision)</td>
</tr>
<tr>
<td>280-2006</td>
<td>Specification for mild steel wire for general engineering purposes (Fourth revision)</td>
</tr>
<tr>
<td>412-1975</td>
<td>Specification for expanded metal steelsheets for general purposes (Second revision)</td>
</tr>
<tr>
<td>432 (Part 1) 1982</td>
<td>Specification for mild steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement, Part I, Mild steel and medium tensile steel bars (Third revision)</td>
</tr>
<tr>
<td>432 (Part 2) 1982</td>
<td>Specification for mild steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement Part II, Hard drawn steel wire (Third revision)</td>
</tr>
<tr>
<td>733-1983</td>
<td>Specification for wrought aluminium and aluminium alloys bars, rods and sections for general engineering purposes (Third revision)</td>
</tr>
<tr>
<td>737-1986</td>
<td>Specification for wrought aluminium and aluminium alloys sheet and strip for general engineering purposes (Third revision)</td>
</tr>
<tr>
<td>800-1984</td>
<td>Code of practice for general construction in steel (Second revision)</td>
</tr>
<tr>
<td>806-1968</td>
<td>Code of Practise for use of steel tubes in general building construction</td>
</tr>
<tr>
<td>808-1989</td>
<td>Dimensions for hot rolled steel beam, column, channel and angle sections (Third revision)</td>
</tr>
<tr>
<td>811-1987</td>
<td>Cold formed light gauge structural steel section (Revised)</td>
</tr>
<tr>
<td>814-2004</td>
<td>Specification for covered electrodes for manual metal arc welding of carbon and carbon manage steel (Sixth revision)</td>
</tr>
<tr>
<td>816-1969</td>
<td>Code of practice for use in metal arc welding for general construction in mild steel (First revision)</td>
</tr>
<tr>
<td>818-1968</td>
<td>Code of practice for safety and health requirement in electric and gas welding and cutting operations (First revision)</td>
</tr>
<tr>
<td>822-1970</td>
<td>Code of procedure for inspection of welds</td>
</tr>
<tr>
<td>1038-1983</td>
<td>Specification for steel doors, windows and ventilators (Third revision)</td>
</tr>
<tr>
<td>1081-1960</td>
<td>Code of practice for fixing and glazing of metals (steel and aluminium) doors, windows and ventilators</td>
</tr>
<tr>
<td>1148-1982</td>
<td>Specification for hot rolled rivet bars (up to 40mm diameter) for structural purposes (Third revision)</td>
</tr>
<tr>
<td>1173-1978</td>
<td>Hot rolled slit steel tee bars (Second revision)</td>
</tr>
<tr>
<td>1252-1991</td>
<td>Dimension of Hot rolled steel bulb angles (First revision)</td>
</tr>
<tr>
<td>1285-2002</td>
<td>Specification for wrought aluminium and aluminium alloys extruded round tube and hollow sections for general engineering purposes (Third revision)</td>
</tr>
<tr>
<td>1361-1978</td>
<td>Specification for steel windows for industrial buildings (First revision)</td>
</tr>
<tr>
<td>1363-2002</td>
<td>Hexagon head bolts, screw and nuts of product grade‘ C - Part I, Hexagonhead bolts (Part 1) (SizerangeM5 toM64)(Fourth revision)</td>
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<td>Description</td>
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<tr>
<td>1363-2002</td>
<td>Hexagon head bolts, screw and nuts of product grade 'C' - Part-II, Hexagon</td>
</tr>
<tr>
<td></td>
<td>(Part 2) head screws (Size range M 5 to M 64) (Fourth revision)</td>
</tr>
<tr>
<td>1363-1992</td>
<td>Hexagon head bolts, screw and mts of product grade 'C' - Part-ill, Hexagon</td>
</tr>
<tr>
<td></td>
<td>(Part 3) nuts (Size range M 5 to M 64) (Third revision)</td>
</tr>
<tr>
<td>1367 (Parts1 to 20)</td>
<td>Technical supply conditions for threaded fasteners</td>
</tr>
<tr>
<td></td>
<td>(Second revision)</td>
</tr>
<tr>
<td>1730-1989</td>
<td>Dimensions for steel plates, sheets, strips and flats for general engineering</td>
</tr>
<tr>
<td></td>
<td>purposes (Second revision)</td>
</tr>
<tr>
<td>1732-1989</td>
<td>Dimensions for round and square steel bars for structural and general</td>
</tr>
<tr>
<td></td>
<td>engineering purposes, (Second revision)</td>
</tr>
<tr>
<td>1786-1985</td>
<td>Specification high strength deformed steel bars and wires for concrete</td>
</tr>
<tr>
<td></td>
<td>reinforcement (Third revision)</td>
</tr>
<tr>
<td>1852-1985</td>
<td>Rolling and cutting tolerances for hot rolled steel products (Fourth revision)</td>
</tr>
<tr>
<td>1863-1979</td>
<td>Hot rolled steel bulb flats (First revision)</td>
</tr>
<tr>
<td>1868-1996</td>
<td>Specification for anodic coating on aluminium and its alloys (Third revision)</td>
</tr>
<tr>
<td>1948-1961</td>
<td>Specification for aluminium doors, windows and ventilators</td>
</tr>
<tr>
<td>1949-1961</td>
<td>Specification for aluminium windows for industrial buildings</td>
</tr>
<tr>
<td>2016-1967</td>
<td>Specification for plain washers (First revision).</td>
</tr>
<tr>
<td>2062-2006</td>
<td>Specification for hot rolled low, medium and high tensile structural steel</td>
</tr>
<tr>
<td></td>
<td>(Sixth revision)</td>
</tr>
<tr>
<td>2314-1986</td>
<td>Specification for steel sheet piling sections (First revision).</td>
</tr>
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<td>2751-1979</td>
<td>Code of practice for welding of mild steel bars used for reinforced concrete</td>
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<td>3016-1982</td>
<td>Code of practice for fire precautions in welding and cutting operations(First</td>
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<td>3443-1980</td>
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<td>3502-1994</td>
<td>Specification for steel chequered plates (Second revision)</td>
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<td>3908-1986</td>
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<td>3909-1986</td>
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<td>3921-1985</td>
<td>Aluminium channel (First revision)</td>
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<td>3954-1991</td>
<td>Hot rolled steel channel sections for engineering purposes - dimensions(First</td>
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<td>4000-1992</td>
<td>Code of practice for high strength bolts in steel structures. (First revision)</td>
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<td>4351-2003</td>
<td>Specification for steel doors frames (Second revision)</td>
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<td>4923-1997</td>
<td>Hollow Steel sections for structural use : Specifications</td>
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<td>4948-2002</td>
<td>Specification for welded steel wire fabric for general use (Second revision)</td>
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<tr>
<td>5384-1985</td>
<td>Aluminium I Beam (First revision)</td>
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<td>5523-1983</td>
<td>Method of testing for anodic coating on aluminium and its alloys (First</td>
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<td>6248-1979</td>
<td>Specification for metal rolling shutters and rolling grills (First revision)</td>
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<tr>
<td>6445-1985</td>
<td>Aluminium tee sections (First revision)</td>
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<tr>
<td>6639-2005</td>
<td>Specification for hexagon head bolts for general steel structures. (First</td>
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<td>7205-1974</td>
<td>Safety code for erection of structural steel work.</td>
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<td>7215-1974</td>
<td>Tolerances for fabrication of steel structures.</td>
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<td>7452-1990</td>
<td>Specification for hot rolled steel sections for doors, windows and ventilators.</td>
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<td>9595-1996</td>
<td>Recommendation for metal arc welding of carbon and carbon manganese steel</td>
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<td>10019-1981</td>
<td>Specification for mild steel stays and fasteners</td>
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<tr>
<td>10521-1883</td>
<td>Specification for collapsible gate</td>
</tr>
<tr>
<td>12753 - 1989</td>
<td>Eletrogalvanized coatings on round steel wire-specifications.</td>
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<tr>
<td>12778-2004</td>
<td>Hot rolled parallel, flange steel sections for beams, columns and bearing</td>
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<td>piles dimensions and section properties. (First revision)</td>
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CAST IRON WORK

10.2 Cast Iron Work

Casting shall be from cast iron of grade FG 150 conforming to IS: 210 -1978, specification for grey iron castings. The castings shall be sound, clean and free from porosity, blowholes, hard spots, cold shuts (i.e., irregularities due to casting at too low a temperature), distortion and other harmful defects. They shall be well dressed and fettled; accurately moulded in accordance with the pattern / drawing and shall be of uniform thickness except where the design necessitates variation. Abrupt changes in the section: of adjoining members shall be voided as far as possible. Unless otherwise indicated edges of castings shall be rounded and integral angles finished with an angle fillet. No welding or repairs shall be carried out, unless otherwise indicated.

10.3 Structural Steel Work

Structural steel shall conform to

(a) Structural steel (fusion welding quality) ‘fe 410-W’ conforming to IS 2062-2006, Specification for structural steel (fusion welding quality). Fe 310-0 steel may be used for general purpose such as door and window frames, window bars, grills, steel gates, handrails, tie bars etc.

10.3.1 Freedom from Defects:

All finished steel shall be well and cleanly rolled to the dimensions, sections and weights specified. The finished material shall be reasonably free from cracks, surface flaws, laminations, rough, jagged and imperfect edges, and all other harmful defects. Minor surface defects may be removed by the manufacturer by grinding provided that the thickness is not locally by more than 4 percent with a maximum of 3 mm.

10.3.2 Structural steel of different sections, sizes and lengths shall be stacked separately. For each classification of steel separate areas shall be earmarked. Steel shall be marked with distinct painting marks for easy identification. All steel shall be so stored that it is always at least 15 cm above the ground level. In case of long storage suitable protective measures shall be taken to prevent scaling and rusting.

10.3.3 Tolerances

Rolling and Cutting tolerances shall be as per IS 1852.

10.4 Chequered Plates

Chequered plates shall be as per requirements given in IS 3502-1994 Specification for steel chequered plates, Pattern of chequered plates shall be as directed. Plates shall be cleanly rolled and shall be reasonably free from harmful surface defects such as cracks, surface flaws, imperfect edges, etc. thickness of chequered plates specified shall be exclusive of the raised portion.

10.5 BLANK

10.6 Bolts Nuts and Washers

10.6.1 Bolts and nuts shall be conforming to the relevant requirements given in the following IS specifications and as indicated:

(a) IS1363-2002 (Parts 1 to 3) Specification for hexagon head bolts, screws and nuts Of product grade ‘C’ (Size M5 to M64)
(b) IS 1367 (Parts 1 to 20) Technical supply conditions for threaded fasteners.
(c) IS 6639-2005 Specification for hexagon head bolts, for steel structures

10.6.2 The heads shall be forged, in one piece with the bolts and the nuts shall, be neatly made with the hole truly in the centre. The threads shall be full, true and deep. The heads and nuts shall be hexagonal unless square heads and nuts are specially indicated. Bolts and nuts Shall be cleanly finished and shall
be sound and free from defects, which may affect their serviceability. Bolts and nuts shall be suitably protected against corrosion.

10.6.3 Washers:
Plain washers shall be of steel conforming to IS 2016-1974. Specification for plain washers: Spring washers shall conform to IS 3063-1994, specification for single coil, rectangular section spring washers for bolts; nuts and screws. The washer shall be free from cracks, burns, pits to other defects. The hole shall be reasonably concentric, with the outer periphery. All sharp edges shall be removed.

10.7 Electrodes
Electrodes for metal arc welding of mild steel shall be as per IS 814-2004, Specification for covered electrodes for metal arc welding of structural steel Joints in materials above 20 mm thick and all important connections shall be made with low hydrogen electrodes. The mechanical properties of the weld deposit shall be such to satisfy all the requirements such as tensile strength, elongation and impact strength of the parent.

10.8 Workmanship Generally
Structural steel work riveted, bolted or welded shall be carried out described in IS 800-1984, code of practice for use of structural steel in general building construction.

10.8.1 Straightening and bending:
All material shall be straight and if necessary, before being worked shall be straightened and flattened by pressure, unless required to be of curvilinear form and shall be free from twists. Straightening of steel by hammer blows is not permitted. All bending and cutting shall be carried out in cold condition, unless otherwise directed, in such manner as not to impair the strength of the metal.

10.9 Cutting and Machining
Member shall be cut mechanically by saw or shear or by oxyacetylene flame. All sharp rough or broken edges and all edges of joints which are subjected to tensile or oscillating stresses shall be grounded. No electric metal arc cutting shall be allowed. All edges cut by oxyacetylene pores shall be cleaned of impurities and slag prior to assembly cutting tolerance shall be as follows:

(a) For member connected at ends +/- 1 mm.

(b) Elsewhere +/- 3 mm.

10.10 Holes
All holes shall be accurately marked and drilled. Holes through more than one thickness shall preferably be drilled together after the members are assembled and tightly clamped or bolted together. In such cases, if required, these parts shall be separated after drilling and burrs removed. For thickness of materials less than 16 mm the holes may be punched 3 mm less in diameter then the required size and be reamed to the full diameter after assembly. Finished holes for rivets and black bolts shall be not more than 1.5 mm (2.0 mm for rivets and bolts or diameter more than 25 mm) in diameter larger than the diameter of rivets and bolts passing through them. All matching holes for rivets shall be so prepared that a gauge 0.8 mm diameter less than the hole can pass steeelly through the members assembled for riveting. Holes other than those required for close tolerance may be punched full size through material not over 12 mm thick.

10.10.1 All holes shall have their axis perpendicular to the surface bored through. Holes through two or more members shall be truly concentric. No rivet or bolt hole shall be nearer the edge of the member than distance equal to its own diameter. Holes shall not be formed by gas cutting process.
10.11 Assembly

Before assembly the contact surfaces shall be painted with a heavy coat of pure zinc chromate red oxide primer including surface preparation.

10.11.1 Laying Out:

Steel structure shall be laid out on a level platform to full scale and to full size or in parts as shown on working drawings or as directed by EIC. Wooden templates 12 mm to 19 mm thick or metal sheet templates shall be made to correspond to each member and part, rivet holes shall be marked accurately on them and drilled. The templates shall be laid on the steel members and holes for riveting and bolting marked on them. The ends of the steel members shall also be marked for cutting. The base of steel columns and the positions of anchor bolts shall be carefully set out.

10.11.2 The component parts shall be assembled in such a manner that they are neither twisted nor otherwise damaged and shall be so prepared that the specified cambers, if any, are provided. All box sections shall be carefully set out.

10.11.3 Assembly shall be done by using assembly fixtures, jigs and stands, which facilitate high quality assembly with proper safety. Mis-alignment and distortion of parts after assembly shall not be allowed; only thoroughly straightened parts free from burrs, grease, rust, etc, shall be allowed for assembly.

10.11.4 Temporary connection of parts during assembly shall be done in the following way:

(a) For welded structures joining shall be done by means of tack weld, fastening devices and fixtures.

(b) For riveted and bolted structures joining shall be done by adequate number of bolts. If tack welding is permitted, in such cases the same shall be removed after the work is over.

(c) For riveted structures in which holes are to be drilled after assembly, joining shall be done by appropriate fixtures.

10.11.5 Tack welding shall be done on the sides and along the line of the weld. Tack weld dimension shall be minimum. Tack welding shall be carried out with similar electrodes as the final welding and the tacks shall completely fuse with the final weld metal.

10.11.6 In case splicing is necessary, the individual members shall be spliced first before assembly and before final welding with other members.

10.11.7 For riveted structures, members shall be well tightened by assembly bolts in every third hole maximum distance between bolts shall not exceed 500 mm. To prevent stiffening, drift pins shall be used 30 percent of the assembly bolts. After tightening, the gap between members to be jointed shall be checked by 0.2 mm thick feeler gauge which should not go inside by more than 2 mm, looseness of bolts shall be checked by tapping with a test hammer.

10.13 Bolting

Bolt head and nuts shall be of such length as to project one clear thread beyond the nuts when fixed in position, and these shall fit in the holes without any shake. The nuts shall fit in the threaded ends of bolts properly.

10.13.1 Round washers shall be placed under the heads and nuts' of permanent bolts. Maximum two washers for one nut and one for each bolt head shall be used. Bolt threads shall be outside the limits of joining members and unthreaded portion of bolt shall not be outside the washer.

10.13.2 Where there is risk of the nuts being removed or becoming loose due to vibration or reversal of stresses, these shall be secured from slackening by the use of lock nuts or spring washers, as directed by the EIC.

10.13.3 Bolts, nuts and washers shall be thoroughly cleaned and dipped in double linseed oil before use.

10.13.4 Quality of tightening of bolts shall be inspected by taping them with a hammer. The bolt shall not be shaken or shifted.
10.13.5 The bolts shall be tightened starting from center of the joint towards the edge.

10.14 **Welding**

10.14.1 Welding shall be done by metal arc process unless otherwise permitted by the EIC, in writing, in accordance with IS 816-1969 Code of practice for use of metal arc welding of general construction, in mild steel, and IS 9595-1996 Recommendation of Metal arc welding, regarding workmanship welding method, welding procedure with suitable electrodes and wire flux, combinations, quality of welds, correction of weld faults etc.

10.14.2 **Preparation of members for welding:**

10.14.2.1 Assembly of structural members shall be made with proper jigs and fixtures to ensure correct positioning of members (angles, axis, nodes etc)

10.14.2.2 Sharp edges, rust of cut edges, notches, irregularities and fissures to ensure due to faulty cutting shall be chipped or ground or filed over the length of the affected area deep enough to remove faults completely.

10.14.2.3 Edge preparation for welding shall be carefully and accurately made so as to facilitate a good joint.

10.14.2.4 Generally, no special edge preparation shall be required for members under 8 mm thick.

10.14.2.5 Edge preparation (beveling) denotes cutting of the same so as to result in V, X, K or U seam shapes as per IS 9595.

10.14.2.6 The members to be assembled shall be clean and dry on the welding edges. Under no circumstances shall wet, greasy, rust of dirt-covered parts be assembled. Joints shall be kept free from any foreign matter, likely to get into the gaps between members to be welded.

10.14.2.7 Before assembly, the edges to be welded as well as adjacent areas extending for at least 20 mm shall be cleaned (until metallic polish is achieved)

10.14.2.8 When assembling members proper care shall be taken of welding shrinkage and distortions, as the drawing dimensions cover finished dimensions of the structures.

10.14.2.9 The elements shall be got checked and approved by the EIC before assembly.

10.14.2.10 The permissible tolerances for assembly of members preparatory to welding shall be as per IS 9595.

After the assembly has been checked, temporary tack welding in position shall be done by electric welding, keeping in view finished dimensions of the structure.

Preheating of members to be joined to be carried put as per standards wherever necessary.

**Butt Welds:**

The form of joint, angle between fusion faces, gap between parts and the welding procedure shall be such that welded joint shall comply with the design requirements. The ends of butt joints in plate shall be welded so as to provide full throat thickness. In the gas-welded condition, the weld face shall be proud of the surface of the parent metal. Where a flush surface is required, the excess metal shall be dressed off. Where no dressing is to be carried out, the permissible weld profile shall be as specified in the relevant IS.

For butt weld, where these are to be welded for both sided, certain welding procedures allow this to be done without back going, but where complete penetration cannot be achieved, the back of the first run shall be gouged out to clean sound metal before welding is started on the gouged outside.
Fillet Welds:

A fillet weld as deposited shall be not less than the specified dimensions indicated as throat thickness and/or leg thickness taking into account penetration process or partial penetration. For concave fillet welds the actual throat thickness shall be not less than 0.7 times the specified leg length. For convex fillet welds, the actual throat thickness shall be not less than 0.9 times the specified leg length.

Preparation of joint Faces:

If preparation or cutting of material is necessary, this shall be done by shearing, chipping, grinding, machining, thermal cutting. When shearing is used the effect of work hardening shall be taken care of to ensure that there is no cracking of the edges. Removal of 1 mm to 2 mm from a cut face normally eliminates the layer of hardness.

Fusion Faces:

Fusion faces and adjustment surfaces shall be free from cracks, notches or other irregularities which might be the cause of defects or would interfere with the deposition of the weld. They shall also be free from heavy scale, moisture, oil, paint and any other substances which might affect the quality of weld or impede the progress of welding.

Assembly for Welding:

Jigs and manipulators should be used, where practicable, so that the welding can be carried out in the most suitable position. Jigs shall maintain the alignment with the minimum restraint so as to reduce the possibility of lock in stresses.

Alignment of Butt Joint:

The root edges or root faces of butt joints shall not be out of alignment by more than 25 percent of the thickness of the thinner material for material up to 12 mm thick or by more than 3 mm for thicker material. For certain applications closer tolerances may be necessary for proper alignment.

Fit up of parts jointed by fillet welds:

The edges and surfaces to be jointed by fillet welds shall be in close contact as possible since any gap increases the risk of cracking but in no Case should be gap exceed 3 mm.

10.14.10 Tack Welds:

Tack welds shall be not less than the throat thickness or leg lengths of the root run to be used in the joint. The length of the tack weld shall not be less than four times the thickness of the thicker part or 50 mm whichever is smaller. If smaller tack welds are desired, these shall be so indicated.

Where a tack weld is incorporated in a welded joint, the shape of the tack shall be suitable for incorporation in the finished weld and it shall be free from cracks and other deposition faults.

10.14.11 Protection from Weather:

Surface to be welded shall be dry. When rain or snow is falling or during periods of high wind, necessary precautions shall be taken for outdoor welding. Warming shall be carried out at all ambient temperatures below 10°C.

10.14.12 Inter-Run Cleaning:

Each run of weld bead and each layer of weld shall be thoroughly cleaned of slag, spatters, etc., before depositing subsequent bead or weld with particular reference to thorough cleaning of toes of the welds. Visible defects such as cracks, cavities and other deposition faults, if any, shall be removed to sound metal before depositing subsequent run or layer of weld.

10.14.13 Welding Procedure:

10.14.13.1 Welding shall be carried out only by fully trained and experienced welders as tested and approved by the EIC.
10.14.13.2 Qualification tests for welders as well as tests for approval of electrodes will be carried out as per IS 823. The nature of test for performance qualification for welders shall commensurate with the quality of welding required on this work as judged by the EIC.

10.14.13.3 The steel structures shall be automatically, semi-automatically or manually welded.

10.14.13.4 Welding shall be done only after the checks shown under clause 10.15 have been carried out.

10.14.13.5 Welding procedures and tests for welders shall be conducted as per IS 9595 and approved by the EIC.

10.14.13.6.1 The welder shall mark with his identification mark on each element welded by him.

10.14.13.7 When welding is carried out in open air steps shall be taken to protect the places of welding against wind or rain. The electrodes wire and parts being weld on shall be dry.

10.14.13.8 Before beginning the welding operation each joint shall be checked to assure that the parts to be welded are clean and root gaps provided as per IS 9595.

10.14.13.9 For continuing the welding of seams discontinued due to some reasons the end of the discontinued seam shall be melted in order to obtain a good continuity. Before resuming the welding operation the groove as well as the adjacent parts shall be well cleaned for a length of approximately 50 mm.

10.14.13.10 For single butt welds (in V,1/2V or U) and double butt welds (in K, double U, etc) the rewelding of the root butt is mandatory but only after the metal deposition on the root has been cleaned by back gouging or chipping.

10.14.13.11 The welding seams shall be left to cool slowly. The contractor shall not be allowed to cool the welds quickly by any method.

10.14.13.12 For multi layer welding before welding the following layer, the formerly welded layer shall be cleaned metal bright by light chipping and wire brushing. Backing strips shall not be allowed.

10.14.13.13 The order and method of welding shall be so that:

(a) No unacceptable deformation appeared in the welded parts

(b) Two. margin is provided to compensate for contraction due to welding in order to avoid any a high permanent stresses.

10.14.13.14 The defects in welds shall be rectified to IS 9595 and as per instruction of EIC.

All weld shall be inspected by Dye Penetration before painting, any weld found to be defective shall be cut by using either chipping hammer or any other means in such a manner that the adjacent material is not damaged.

10.14.14 Approval and Testing of welders:

The contractors shall satisfy the EIC that the welder is suitable for the work up on which they will be employed.

10.14.15 Weld instruction:

The weld seams shall satisfy the following:

a. shall correspond to design, shapes and dimensions

b. Shall not have any defects such as cracks, incomplete penetration and fusion under cuts, rough surfaces, burns, blow holes, and porosity etc beyond permissible

10.14.15.1 During the welding operation and approval-of finished elements inspection ant test shall be made as shown in table 1 below
10.14.15.2 The mechanical characteristics of the welded joints shall be as in IS: 9595

10.14.16 Quality of welds and corrections:

Welded joints shall be free from defects that would impair the service performance of the construction. All welds shall be free from incomplete penetration, incomplete fusion; slag inclusion, burns, unwelded craters, undercuts and cracks in the weld metal or in the heat affected zone, porosity, etc. Unacceptable undercutting shall be good by grinding. In case of shrinkage cracks, cracks in parent plate and crater, defective portions shall be removed down to sound metal and re-welded. Whenever corrections necessitate the deposition of additional weld metal, electrode of a size not exceeding 4mm may be used. Rectification of welds by caulking shall not be permitted.

10.15.17 Cleaning
All welds shall be cleaned of slag and other deposits after completion; till the work is inspected and approved, painting shall not be done.

10.15.18 Plaining of Ends:

10.15.18.1 Plaining of ends of member like column ends shall be done by grinding where so specified.

10.15.18.2 Plaining of butt welded member shall be done after these have been assembled and the edges be removed with grinding machine or file.

Shop Painting: Entire steel work with exception of bolts, nuta and machined surfaces after being thoroughly cleaned and shall be given shop coat of zinc chromate primer. Welds and adjacent parent material shall not be painted prior to the deslagging, inspection and approval.

10.15.18.3 The following tolerances shall be permitted on members that have been plained:
(a) The length of member having both end plained max +2mm with respect to design.
(b) Level difference between plained surface = 0.3mm.
(c) Deviation between plained surface and member axis=max 1/5000.

10.15.19 Safety and Health

The Contractor shall ensure that the safety requirements and health provisions laid down in IS: 818-1968, Code of Practice for safety and health requirements in electric and gas welding and cutting operations, are complied with during welding operations. The Contractor shall also provide equipment for eye and face protection during welding as laid down in IS: 1179-1967. Fire precautions shall be taken in accordance with IS 3016-1982, Code of practice for fire precautions in welding and cutting operations.

10.15 Erection:

10.15.1 Erection work shall be performed in accordance with the general construction schedule. A scheme shall be worked before the commencement of the erection which shall also contain rules for safety precautions as detailed in IS: 7205-1974. Safety code for erection of structural steel works.
10.15.2 Anchor bolts for fastening of steel structures shall be set in designed positions and grouted along with foundations. Alternatively anchor bolts should be provided in the concrete foundation with bolt boxes and anchor channels for the purpose of flexibility and grouted after final alignment and levelling Column.

10.15.3 The gaps between the bearing surface of foundation and bottom of the structure to be erected shall be filled properly by cement grouting. Grouting shall be done after the verification and proper positioning of the structures but before encasing the structures with concrete if specified.

10.15.4 Damaged structural members shall be examined and rectified or replaced as directed.

10.15.5 The erected parts of the structures shall be stable during all the stages of erection; and structural elements to be erected shall be stable and strong to bear erection loads.

10.15.6 Working on the already erected structures is permitted only after they are finally fixed. Erection of structures of each tier for high structures shall be executed only after fastening of lower tier by the permanent or temporary fastening devices as per schedule of execution of work and certified for safety.

10.15.7 The joint and mating surface including the mating planes, strips and filler or spacers shall be cleaned of dust, rut and water.

10.15.8 Erected structural members shall be firmly fastened by bolts and drifts, permanent or provisional tacking, crossing bars and so on before the erection crane hook is removed.

10.15.9 The trusses shall be lifted only at nodes. The trusses above 12 m span shall not be singed at the apex, as it will develop compression stresses in the bottom tie member. It shall be lifted by slinging at two mid points of rafters, which shall be temporarily braced by a wooden member of suitable section. After the trusses are placed in position purlins and wind bracings shall be fixed as soon as possible. The end of truss which faces the prevailing winds shall be fixed with holding down bolts and the other end kept free to move. In case of small truss of span say up to 12 mm the free end of the truss shall be laid on steel plate as per design and the holes for holding down bolts shall be made in the form of oblong slot as to permit the free movement of the truss end. For large spans, the free end of the truss shall be provided with suitable rocker and roller bearing where indicated.

10.15.10 Erection Joints:

While erecting, holes to be riveted shall be fitted with temporary bolts and drifts of diameter equal to those of the holes. It is necessary to install drifts for accurate matching of holes. Number of bolts and drifts shall not be less than 40 Percent of total number of holes. Forces applied to drifts shall be same as approved for rivets. Number of drifts shall be 10 percent of number of holes.

10.15.11 The number, size and length of tack welds in erection forces shall be as indicated. For the erection joints which do not bear the erection forces the length of tack welds shall be minimum 10 percent of tube designed weld length of the joint.

10.15.12.1 Welding, riveting and final fastening of permanent bolts shall be done only after the inspection of the structural elements for their positions. Head bolts and nuts shall perfectly be in touch with the surfaces of structures and washers.

10.15.13 Tolerance Allowed in Erection;

10.15.13.1 Building without crane:

The maximum tolerance for-line and level of steel structure shall be ±3 mm on any part of the structure. The structure shall not be out of plumb more than 5 mm on each 10 meter section in height and not more than 8 mm per 30 metre section. These tolerance shall apply to all parts of structure unless otherwise specified.

10.15.13.2.1 Tolerance allowed in erection of steel structure containing cranes shall be as per following table:
### 10.36. ALUMINIUM WORK

**Aluminium Sections:**

Aluminium sections used for fixed/openable windows, ventilators, partitions, frame work & doors etc. shall be suitable for use to meet architectural designs to relevant works and shall be subject to approval of the Engineer-in-Charge for technical, structural, functional and visual considerations. Chemical and mechanical properties of sections shall comply with requirements given in IS 733-1983, Specification for wrought aluminium and aluminium alloys bars, rods and sections, IS 737-1986, Specification for wrought aluminium and aluminium alloys sheet and strip for general engineering purposes and IS 1285-2002, Specification for wrought aluminium and aluminium alloys extruded round tube and hollow sections for general engineering purposes. The stainless steel screws shall be of grade AISI 304. Joining of sections, providing fittings, lugs, method of fixing etc shall be as per IS 1948 - 1961.

The permissible dimensional tolerances of the extruded sections shall be as per IS 6477 and shall be such as not to impair the proper and smooth functioning/operation and appearance of door and windows.

Aluminium glazed doors, windows etc. shall be of sizes, sections and details as shown in the drawings. The details shown in the drawings may be varied slightly to suit the standards adopted by the manufacturers of the aluminium work, with the approval of Consultant and Engineer-in-Charge. Before proceeding with any fabrication work, the contractor shall prepare and submit, complete fabrication and installation drawings for each type of glazing doors, windows, ventilators and partition etc. for the approval of the Consultant and Engineer-in-Charge. If the sections are varied, the contractor shall obtain prior approval of Consultant and Engineer-in-Charge and nothing extra shall be paid on this account.

**Anodising:**

Standard aluminium extrusion sections are manufactured in various sizes and shapes in wide range of solid and hollow profiles with different functional shapes for architectural, structural glazing,

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<th>Component</th>
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<th>Tolerance Allowed</th>
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<tr>
<td><strong>Main Columns and Roof Posts</strong></td>
<td>(a) Shifting of column's axis at foundation level with respect to building line : (i) In longitudinal direction (ii) In lateral direction</td>
<td>+/-5 mm +/-5 mm</td>
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<td>(b) Deviation of both major column axis from vertical between Foundation and other member connection levels: (i) For a column upto and including 10m height, (ii) For a column greater than 10m but less than 40m height</td>
<td>+/-5.00 mm from true vertical +/-5 mm from true vertical for any 10M length measured between connection levels but not more than +/-8.00mm for 30 M length</td>
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<td>(c) For adjacent pairs of columns across the width of the building prior to placing of truss.</td>
<td>+/-5.00 mm on true span</td>
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<td>(d) For any individual column deviation of any bearing or resting level from levels shown on drawings.</td>
<td>+/-5.00 mm</td>
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<td>(e) For adjacent pairs of columns either across the width of buildings or longitudinally level difference allowed between bearing or seating level supposed to be at the same level.</td>
<td>+/-5.00 mm</td>
</tr>
<tr>
<td><strong>Truss</strong></td>
<td>(a) Deviation at centre of span of upper chord member from vertical plane running through centre of bottom chord. (b) Lateral displacement of top chord at centre of span from vertical plane running through centre of supports.</td>
<td>1/500 of the span or 10mm whichever is less 1/250 of depth of truss or 20mm whichever is less</td>
</tr>
</tbody>
</table>

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curtain walls, doors, window & ventilators and various other purposes. The anodizing of these products is required to be done before the fabrication work by anodizing/electro coating plants which ensures uniform coating in uniform colour and shades. The extrusions are anodized up to 30 micron in different colours. The anodized extrusions are tested regularly under strict quality control adhering to Indian Standard IS 1868 and Testing of anodizing coating shall be in accordance with IS 5523-1983.

**Powder Coating**

**Material:**

The powder used for powder coating shall be Epoxy/polyester powder of make approved by the Engineer-in-Charge. The contractor shall give detailed programme for powder coating in advance, to facilitate the inspection by Engineer-in-Charge or his authorized representative.

**Pre-treatment:**

Each aluminium alloy extrusion or performed section shall be thoroughly cleaned by alkaline or acidic solutions under the conditions specified by chemical conversion coating supplier and then rinsed. A chemical conversion coating shall be applied by treatment with a solution containing essentially chromate ions or chromate and phosphate ions as the active components as applicable. The amount of the conversion coating deposited depends on the type used by the conversion coating chemical supplier. The conversion coating shall be thoroughly rinsed either with the solution specified by the conversion coating chemical supplier or with de-mineralized water and then dried at the temperature for the time specified by the conversion coating chemical supplier. The contractor shall submit the detail specifications and application procedure for application of conversion coating for approval of Engineer-in-Charge. The metal surface after the conversion coating pretreatment and prior to the application of the coating shall be free from dust or powdery deposits.

**Process:**

The polyester powder shall be applied by electrostatic powder spray method. Before start of powder coating the contractor shall submit detail specification for application of polyester powder from manufacturer of the polyester powder for approval of Engineer-in-Charge. The powder coating shall be applied as per the specification approved by Engineer-in-Charge.

**Thickness:**

The thickness of the finished polyester measured by micron meter shall not be less than 55 micron and not more than 120 micron at any point.
ALUMINIUM FRAME WORK :

Frame Work:

First of all the shop drawings for each type particulars shall be prepared by using suitable sections based on architectural drawings, adequate to meet the requirement specifications and by taking into consideration varying profiles of aluminium sections being extruded by approved manufacturers. The shop drawings shall show full size sections of glazed doors, windows, ventilators etc. The shop drawings shall also show the details of fittings and joints. Before start of the work, all the shop drawings shall be got approved from the Engineer-in-Charge.

Actual measurement of openings left at site for different type of door/window etc. shall be taken. The fabrication of the individual door/windows/ventilators etc. shall be done as per the actual sizes of the opening left at site. The frames shall be truly rectangular and flat with regular shape corners fabricated to true right angles. The frames shall be fabricated out of section which have been cut to length, mitered and jointed mechanically using appropriate machines. Mitered joints shall be corner crimped or fixed with self tapping stainless steel screws using extruded aluminium cleats of required length and profile. All aluminium work shall provide for replacing damaged/broken glass panes without having to remove or damage any member of exterior finishing material.

Fixing of Frames:

The Frame work of particulars shall be fixed to Ceiling or wall with supporting materials and devices for rigidity as approved by the Consultant and the Engineer – in – Charge. The main and the Cross members shall be jointed with angle bracket as indicated in the fabrication Drawing, if not indicated it shall be 15mm x 15mm x 1.5mm, fixed with suitable bolts, nuts and washers etc., The panel size shall be as per the approved drawings. Fixing of Glazing Clips shall be done carefully and no hammer markings shall be seen on the same and only wooden mallet shall be used.

The holes in concrete/masonry/wood/any other members for fixing anchor bolts/fasteners/screws shall be drilled with an appropriate electric drill. Windows/doors/ventilators etc. shall be placed in correct final position in the opening and fixed to Sal wood backing using stainless steel screws of star headed, counter sunk and matching size groove. of required size at spacing not more than 250 mm c/c or dash fastener. All joints shall be sealed with approved silicone sealants.

In the case of composite windows and doors, the different units are to be assembled first. The assembled composite units shall be checked for line, level and plumb before final fixing is done. Engineer-in-Charge in his sole discretion may allow the units to be assembled in their final location if the situation so warrants. Snap beadings and EPDM gasket shall be fixed as per the detail shown in the shop drawings.

Where aluminium comes into contact with stone masonry, brick work, concrete, plaster or dissimilar metal, it shall be coated with an approved insulation lacquer, paint or plastic tape to ensure that electrochemical corrosion is avoided. Insulation material shall be trimmed off to a clean flush line on completion.

The contractor shall be responsible for the doors, windows etc. being set straight, plumb, level and for their satisfactory operation after fixing is complete

Before fabrication the size of the windows and opening shall be ascertained

Performance Requirements for the Finish

(i) Surface appearance:

The finish on significant surfaces shall show no scratches when illuminated and is examined at an oblique angle, no blisters, craters; pinholes or scratches shall be visible from a distance of about 1 m. There shall not be any visible variation in the colour of finished surfaces of different sections and
between the colours of different surfaces of same section.

(ii) **Adhesion:**

When a coated test piece is tested using a spacing of 2 mm between each of the six parallel cuts (the cut is made through the full depth of powder coating so that metal surface is visible) and a piece of adhesive tape, approximately 25 mm x 150 mm approved by the Engineer-in-Charge is applied firmly to the cut area and then removed rapidly by pulling at right angles to the test area, no pieces of the finish other than debris from the cutting operation shall be removed from the surface of the finish.

**Protection of Powder Coated / Anodizing Finish :**

It is mandatory that all aluminium members shall be wrapped with self adhesive non-staining PVC tape, approved by Engineer-in-Charge.

**Measurement:**

All the aluminium sections including snap beading fixed in place shall be measured in running meter along the outer periphery of composite section correct to a millimeter. The weight calculated on the basis of actual average (average of five samples) weight of composite section in kilogram correct to the second place of decimal shall be taken for payment. (Weight shall be taken after anodizing). The weight of cleat shall be added for payment. Neither any deduction nor anything extra shall be paid for skew cuts.

**Rate:**

The rate shall include the cost of all the materials, labours involved in all the operations as described in nomenclature of item and particular specification.

**FALSE CEILINGS, PARTITIONS AND LININGS**

12.1 **Indian Standards** The following IS with latest revision apply to this section.

<table>
<thead>
<tr>
<th>I.S. No</th>
<th>Subject</th>
</tr>
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<tbody>
<tr>
<td>373-1975</td>
<td>Specification for plywood for general purposes (second revision)(with Amdt No.1 to 3).</td>
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<tr>
<td>451-1972</td>
<td>Technical supply conditions for wood screws (second revision)</td>
</tr>
<tr>
<td>723-1972</td>
<td>Specification for steel countersunk head wire nails (first revision)</td>
</tr>
<tr>
<td>749-1978</td>
<td>Specification for hand loom cotton dungri cloth, grey (first revision)</td>
</tr>
<tr>
<td>'848-1974</td>
<td>Synthetic resin adhesive for plywood</td>
</tr>
<tr>
<td>1328-1982</td>
<td>Specification for veneered decorative plywood (second revision)</td>
</tr>
<tr>
<td>1658-1977</td>
<td>Specification for fibre hard-boards (second revision)</td>
</tr>
<tr>
<td>1659-1979</td>
<td>Specification for block boards (second revision)</td>
</tr>
<tr>
<td>2046-1969</td>
<td>Specification for decorative thermosetting synthetic resin bonded laminated sheets (first revision)</td>
</tr>
<tr>
<td>2098-1964</td>
<td>Specification for asbestos cement building boards.</td>
</tr>
<tr>
<td>3087-1985</td>
<td>Specification for wood particle boards (medium density) for general purposes (first revision)</td>
</tr>
<tr>
<td>3129-1965</td>
<td>Specification for particle board for insulation purposes</td>
</tr>
</tbody>
</table>
| 3348-1965     | Specification for fibre insulation boards"
<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8183-1976</td>
<td>Specification for bonded mineral wool</td>
</tr>
<tr>
<td>12406-1988</td>
<td>Medium density fibre board for general purposes.</td>
</tr>
</tbody>
</table>

### 12.2 FITTINGS AND ACCESS PANELS

Lighting fittings, access panels and similar components are incorporated as part of the design requirements, consideration must be given to maintaining the integrity of the ceiling when fire resistance and sound insulation are also important factors.

#### 12.3 DELETED

#### 12.4 DELETED

#### 12.5 Fibre Insulation Boards:

Fibre insulation boards shall conform to the requirements of IS 3348. Specification for fibre insulation boards. The boards shall be ordinarily type except where flame retardant type is indicated. The mean density of the boards shall not exceed 0.4 gm / cu.cm. Flame retardant boards may be treated on one face or both the faces, as indicated.

12.5.1.1 In the case of flame retardant boards on one face only, the face which is treated shall be clearly marked.

12.5.1.2 **Tolerance:** Permissible tolerance on the thickness of the fibre insulation board shall be as under:

- 12 mm thick boards : +/- 0.75 mm
- 18 mm thick boards : +/- 1.0 mm

#### 12.6 Particle Boards for Insulation Purposes:

Particle boards for insulation purposes shall conform to the requirements of IS 3129-1985, Specification for particle board for insulation purposes. Boards shall have either flame retardant chemical mixed during manufacture or shall be impregnated with a solution of flame retardant chemical. The density of the board shall not exceed 0.4 gm/cu.cm and shall not vary from board to board by more than +/- 10 percent.

12.6.1 The permissible tolerances on the nominal thickness of finished boards shall be as follows: -.

- For boards upto 25 mm thick ± 0.8 mm
- For boards above 25 mm thick ± 1 mm

#### 12.7 Medium Density Fibre Board:

Medium density fibre board shall conform to the requirement of IS 12406-1988. Grade of the board shall be indicated.

Designate

- Exterior grade phenol formal EGSB
- Interior grade IGSB

Thickness of the board shall be indicated.

#### 12.8 Decorative Laminates:

Decorative Laminates shall be type 1 having only one side bearing the decorative surface and the other side being roughened or given appropriate treatment to promote adhesion to the base and shall conform to the requirements of IS 2046-1995, Specification for decorative thermosetting synthetic resin bonded laminated sheets. IS 2046 does not cover 1 mm thick decorative laminates which when specified, shall be of approved make.
12.8.1.1 The type of surface finish colour and pattern shall be as directed. The sheets shall be reasonably free from local deformation. Since sheets may vary slightly in colour and appearance, the sheets for anyone scheme shall be matched.

12.8.1.2 Tolerance:

Tolerance on thickness of sheets shall not exceed +/- 0.25 mm.

12.8.1.3 Sheets shall not split or crack when sawn, milled, drilled and tapped.

12.9 DELETED

12.10 DELETED

12.11 Plywood:

Plywood shall conform to requirements of IS 373-1975, Specification for plywood for general purposes. Plywood shall be of grades BWP (boiling water proof) or BWR (boiling water resistant), as indicated. The quality requirement of each face of the plywood as given in Table 1 of the IS, shall not be inferior than type B. Along with the thickness of plywood, the number of plies shall also be indicated.

12.11.1 Plywood boards shall be uniform thickness and free from warp and cracks. The faces of plywood boards shall be reasonably smooth with face veneers of uniform thickness. The edges of the boards shall be trimmed square.

12.11.2.1 Tolerance:

Permissible tolerance on the thickness of plywood boards shall be as under:

- For boards upto 5 mm thick ±10 percent
- For boards nom 6 mm to 9 mm ±7 percent
- For boards exceeding 9 mm thick ± 5 percent

12.12 Decorative Plywood:

Decorative plywood shall be of Type 1 quality conforming to IS 1328-1996, Specification for veneered decorative plywood. Decorative plywood shall have decorative veneers of the specified species of timber and on one or both the faces, as indicated.

12.12.1.1 The adhesive for bonding of veneers shall be synthetic resin adhesive, confirming to IS 848-1974.

12.12.1.2 Tolerance: Permissible tolerances on the thickness shall be as under:

- Positive: 10 percent of nominal thickness.
- Negative: 5 percent of nominal thickness.

12.13 Block Boards:

Block boards shall conform to the requirements of IS 1959-2004, Specification for block boards. Block Boards shall be of grade 1 quality, exterior grade or grade 2 quality, interior grade and of decorative or commercial type as indicated. In case of decorative type it shall be indicated if one or both the faces shall have decorative face veneer. Strips of wood in the core may be laid separately or glued or otherwise jointed.

12.13.1 Block Boards shall be flat and square. Both faces of block board shall be sanded to a smooth even surface. Block boards shall be uniform in thickness with in the tolerance specified.

12.13.2 Tolerance permissible on the thickness of block boards shall be +/- 5 percent for boards upto 25 mm thickness and +/- 2.5 percent for boards above 25 mm thickness.

12.14 Particle Boards

Particle Boards shall conform to the requirements of IS 3087-2005, Specification for wood particle boards (medium density) for general proposes. Adhesive used for bonding purpose shall phenol formaldehyde as indicated.
12.14.1 Particle boards may be either Flat Pressed single layer type or Flat pressed there layer type, unless a particular type has been indicated. In case of three layer particle boards the construction shall be well balanced about the central plane. In the case of single layer particle board the particles shall be uniformly distributed.

12.14.2.1 Particle boards shall be of uniform thickness and uniform density throughout the board. Both faces of particle boards shall have sanded smooth finish.

12.14.3 Density

Mean density of the board shall be between 500 to 900 Kg / cum. The density shall not very from one board to another by more than 10 Percent of the mean density.

12.14.4 Particle boards shall not crack or split when drilled, sawed or nailed perpendicular to the surface.

12.14.5 Tolerance

Tolerance permissible on the thickness of particle boards shall be ±5 Percent boards upto 25 mm thick and ±2.5 Percent for boards above 25 mm thick.

12.15 Veneered Particle Boards

Veneered particle boards shall conform to the requirements of IS:3097-1980, Specification for veneered particle boards. The boards shall be of interior or exterior grade with solid core, and shall be general purpose type or decorative type, as indicated. In case of decorative type it shall be indicated if one or both faces shall have decorative face veneer. Face veneers of commercial type veneered boards shall be not inferior then exterior grade phenol formaldehyde.

12.16 Finish & Tolerance

Finished and tolerance permissible on the thickness of veneered particle boards shall be same as specified under 'Block boards'.

12.17 Nails & Screws

Nails shall conform to IS 723-1972, specification for steel countersunk head wire nails. The nails shall be diamond pointed. Screw shall conform to IS 451-1999. Technical supply conditions for wood screws. Special nails recommended by the manufacturer, if any, shall be invariably used.

12.18 DELETED

WORKMANSHIP

12.18 MATERIAL

The type of boarding etc. in ceiling and lining, their thickness/density and finish shall be as indicated.

12.19 Fixing Generally

12.19.1 When handling, boards and sheets shall be carried on edge and not flat to percent buckling and cracking.

12.19.2 Before fixing, the board shall be conditioned to the humidity of the atmosphere by stacking then loosely on edge for a period of 24 hrs so that air can have free access to both sides of each sheets during the period. Hardboards shall be conditioned as specified under 'Fixing Hardboards'.

12.19.3 Before fixing the boards, sheeting tiles, etc. to the Framework, the framework shall be checked with regard to the level, position and vertically of its out side surface and for proper fixture and joints.

12.19.4 Boards, sheeting, tiles etc. shall be checked for corrected sizes, squareness of adjacent sides and laying patterns.
12.19.5 Boards shall be cut to the required size and to conform to the pattern of panels as directed. Each panel shall be in one whole piece. The board should be sawn with the face-side up and a fine and even edge obtained. The joints in the boards shall be with the square or slightly rounded edges as directed. The edges shall be lightly sandpapered to make them smooth.

12.19.6 Fixing

Unless otherwise directed, boards shall be fixed with length parallel to all joints, centered over farming members. Where the joints are to be covered, the boards shall be closed butt jointed or spaced 3 to 6 mm apart as per manufacture's instructions or as directed. Where joints are to be left exposed, the boards shall be butt jointed with a minimum clearance of 3 mm or as directed. The boards shall be supported and held tight to the background with timber pieces, these being marked outwards as the fixing proceeds. The boards are first fixed to the intermediate framing member proceeding from the center of the boards outwards, the edges being fixed last.

12.19.7 Where boards are fixed with nails, they shall be countersunk into the boards with suitable punch. Care shall be taken in driving the nails that the boards/sheets are not marked by hammer blows.

12.19.8 The screws shall be rustless and oiled before fixing.

12.19.9 Finishing

The exposed side of the board fixed in ceiling shall be truly level and plane except, in the case of sloped ceiling and truly vertical when fixed in wall lining without any local bulges or sags. The joints shall be truly parallel and/or perpendicular to the walls. The width of joints shall be uniform.

Care shall be taken to ensure that the boards are not made dirty and uniformity of the colour or the boards is not spoiled during the fixing operations. Ceiling boards and wall linings, when fixed, shall present a neat and uniform appearance.

12.20 DELETED

12.21 Fixing of Plywood, Block board, Particle Board and Veneered particle Board

12.21.1 Decorative veneers shall be matched or mismatched to achieve a decorative effect in colour, figure and grain. Where directed decorative veneers boards shall be matched to particular design, for example quartered, centered, diamond or V matched or shall be arranged to from a group to give an overall general effect. The pattern and figure matching shall be decided, put on paper and boards preferably numbered for their positions. Any board so required shall be cut to the required plan.

12.21.2 The boards shall be carefully lifted and fixed to the frame-work with wood screws. All the edges shall be fixed to the frame members by screws spaced 7.5 cm center for 4 mm to 6 mm thick plywood, for thicker boards, the center-to-center spacing of screws maybe at about 15 times the thickness. The screws shall have a clearance of 10 mm from the edge line. At the line of intermediate support, the screws shall be countersunk. The screws shall be fixed starting from one corner and, extending to both sides to fix the board flat and level. The length of the screws shall be as follows:

- a) For boards up to 7 mm thick 25 mm
- b) For boards above 7 mm up to 12 mm thick 35 mm
- c) For boards above 12 mm thick Thickness +20 mm

12.21.3 The joints, if left open, shall be filled with painters putty and brought to level or may be cut to “V” shape. They may also be left open” beveled or parallel grooved using plane and chisel or grooving cutter. The boards may also be pre-cut and edges rounded before fixing. In the case of decorative boards, the joints may be coloured to match the general colour and pattern of the ceiling boards. Alternatively, the open joints shall be covered by a beading or strips as indicated.

12.22 Galvanised Steel framework for false ceiling work

12.22.1 (a) Materials

i) Galvanised steel sections incorporated in framework shall conform relevant IS codes.
ii) The grid shall consist of galvanized steel main Tees of size 33 (H) mm x 24mm.

(b) Workmanship

i) Grid framework shall be suspended/fixed from RCC/Structural steel roof using 3mm dia GI rod, 6mm nylon rawl plug and 6mm J bolt at every 1200mm intervals with necessary bolts, nuts and washers all as per manufacturer’s instruction.

ii) The main Tees shall be provided at every 1.2M center to center, stitched cross Tee at 0.6m center to center fixed with suitable GI bolts, nuts and washers all as per manufacturer’s instruction.

iii) The grid (main / cross tee section) shall be supported at ends all along the wall with GI angle as per consultant.

iv) GI coating shall conform to IS277 class coating for respective thickness and testing shall be all as directed.

v) PVC protected sheeting shall be used to avoid scratches, damage to the framework while fixing to ceiling.

vi) Powder coating to the exposed surface shall not be less than 22 microns.

12.23 Calcium silicate false ceiling

Metal framed suspended ceiling comprises of G.I perimeter channel having two unequal flanges of 20 and 30 mm and web of 27 mm is fixed to surrounding walls /Partition using nylon sleeves and screws at 450 mm centres. Then intermediate channel having two equal flanges of 15 mm each and a web of 45 mm is suspended from the soffit at 1220 mm centre with ceiling angle of width 25 mm x 10 mm x 0.55 mm thick, fixed to soffit with G.I cleat and steel expansion fasteners. Ceiling section of 0.55 mm thickness having knurled web of 50.5 mm and flanges of 26 mm each with lips of 10.5 mm are then fixed to the intermediate channel with connecting clips across to the Intermediate channel, at 457 mm centers. 8 mm thick square/tapered edge Calcium Silicate Boards are then screw fixed across the ceiling sections with 25 mm long self drilling & tapping screws having Phillips head with under head cutter, at 200 mm c/c through the Calcium Silicate Board fillets.

Openings for light fittings, access panels and A/C grills

Openings for the above to be made by using perimeter channel around the opening and suitably suspending this area by using extra sections to maintain the integrity of the ceiling

Access Panel:

Access panels are provided in suspended ceilings for repairs/maintenance purpose of the air condition ducts etc. These to be made by providing additional perimeter channel around the opening and other sections to maintain the integrity of the ceiling. Calcium Silicate Board is then fixed to the frame work with self drilling screws.

Frame Work:

First of all ceiling level is marked on to the wall/Partition as per the drawing, leaving a scope for board thickness. G.I. perimeter channel is fixed to the perimeter of the wall/Partition with nylon sleeves and wood screws(38 mm long)at 457 mm centres, at the above level. Intermediate channel is suspended from the soffit at 1220 mm c/c with the help of rawl plug, sofit cleat and the ceiling angle, in one direction. Ceiling sections are attached to the intermediate channel, across to it, by connecting clips at 457 mm centres. The length of ceiling sections or intermediate channels, can be increased by providing an overlap of 6” and are screw fixed at four places.

Board Fixing
Calcium Silicate tapered edge boards of size, 6’ x 4’ are fixed to the under side of ceiling sections by 25 mm long self drilling & tapping screws having Phillips head with under head cutter at 200 mm c/c. The screws should be 15 mm away from the edges and 40 mm from the corners. The square edges of the boards are made tapered (40 x 1.5 mm) or chamfered by 4 x 3 mm at site before fixing. The joints between boards are staggered in brick work style to make the ceiling rigid and properly aligned to the required level.

Jointing & Finishing:

Calcium Silicate Board joints are finished with specially formulated jointing compound and 48 mm wide, fiber tape to get seamless finish. Cement primer (Oil based) to be provided on entire surface before putty / painting.

12.24 Rock Wool Insulation

Density - 48 kgs/cum and 96 Kg/Cum

Thickness – 50 mm

Thermal conductivity - 0.038 W/mk

Fixing method: Fixing with MS hollow tubes, channels, Weld mesh

GLAZING

16.1 Indian Standards

The following IS apply to this section:

<table>
<thead>
<tr>
<th>IS. No</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>419-1967</td>
<td>Specification for putty for use on window frames (First revision)</td>
</tr>
<tr>
<td>2835-1987</td>
<td>Specification for flat transparent sheet glass (Third revision)</td>
</tr>
<tr>
<td>5437-1994</td>
<td>Specification for wired and figured glass (First revision)</td>
</tr>
</tbody>
</table>

16.2 Sun Control Polyester Film-Reflective Type

16.2.1 Sheet Glass

Sheet Glass for glazing shall conform to IS 2835-1987 Specification for that transparent sheet glass and shall be of the following qualities:

(a) 'A' quality or selected quality (SQ) for selected glazing, where indicated.
(b) 'B' quality or ordinary quality (OQ) for glazing purposes.
(c) 'C' quality or greenhouse quality (GQ) for strips for flooring.

16.2.2 Sheet glass shall be flat transparent and clear as judged by the naked eye. It may, however, possess a light tint when viewed edgewise. It shall be free from any cracks and other defects.

16.2.3 Tolerance on the thickness of glass sheet shall be as under: Normal thickness

<table>
<thead>
<tr>
<th>Normal thickness</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0, 2.5, 3.0 and 4.0 mm</td>
<td>± 0.2mm</td>
</tr>
<tr>
<td>4.8, 5.5 and 6.3 mm</td>
<td>± 0.3mm</td>
</tr>
</tbody>
</table>

16.3 Frosting or Obscuring

The grinding of glass shall be done uniformly and evenly so as to avoid any patchy look. The ground
glass shall be thoroughly cleaned so that it does not catch stains.

16.4 Grinding, Polishing and Rounding of Edges

The edges of glass when rounded shall present a uniform and neatly finished edge.

16.5 Workmanship

The surface should be free from dust and oil. Sun control polyester film shall be fixed on glass as per manufacturer's instructions.

16.6 Glazing in Steel Surrounds

16.6.1 Glazing with Beads

The glass shall be back puttied and secured in the rebates as specified under "Glazing with putty". Beads shall be bedded against the glass with putty and secured to frame with screws. An adequate number of screws shall be used so as to prevent flexing or movement of the beads.

16.6.2 Cleaning of glazing

Glass shall be washed with warm water and soap or mild detergent followed by a clean water rinse and dried with cloth or wash leather. Glass with broken or textured surface shall be cleaned with a stiff plastic or bristle brush. For removing any obstinate dirt, glass shall be polished with whiting in water or spirit. Organic solvents may be used for special purposes. Such as petrol or benzene for removing tar, turpentine for paint that has not dried hard and paraffin for grease. The solvent shall be carefully cleaned off the glass afterwards. Plaster or mortar splashes on the glass shall be removed with thin razor blade.

16.7 Anodised Aluminium Doors, Windows, Ventilators, Partitions, Composite units etc.

(e) Glazing:- Glass panes shall be as indicated. Unless otherwise indicated, fixing of glass panes shall be done with aluminium beading with CP brass or stainless steel screws spaced not more than 10 cm from each corner and intermediate not more than 20 cm apart. When glass panes are fixed with aluminium beading having mitred joints, epoxy resin or silicon sealant shall be applied between glass panes and sash bars and also between glass panes and beading. Aluminium beading shall also be from firm of sections used for fabrication of aluminium Doors, Windows, Ventilators, Partitions, Composite units etc. Joints shall be filled with PVC/ neoprene felt, cleats etc as indicated.
<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Item</th>
<th>Approved Make /manufacturer</th>
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<tr>
<td>1</td>
<td>Cement</td>
<td>Ultra Tech, ACC, Century, Grasim, Ambuja</td>
</tr>
<tr>
<td>2</td>
<td>Reinforcement Steel</td>
<td>SAIL, TISCO, RINL</td>
</tr>
<tr>
<td>3</td>
<td>Structural Steel</td>
<td>TISCO, SAIL, RINL</td>
</tr>
<tr>
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<td>Grouts/Admixtures/Water proof Chemicals/Construction Chemicals</td>
<td>BASF ,FOSROC, PIDILITE, SIKA, SWC,</td>
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<td>Epoxy Flooring/PU</td>
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<td>6</td>
<td>False Ceiling / Vinyl sheets / Carpets</td>
<td>Armstrong, Daiken</td>
</tr>
<tr>
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<td>Galvalume Sheet And Accessories</td>
<td>Era, Tata BlueScope, Octamec Engineering, Jindal, Interarch, Japan building systems</td>
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<td>8</td>
<td>Deck Slab/Cold Rolled Steel Sections</td>
<td>Era build system, Llyod Insultaions, Kirby, Octamec, Pennar Industries Limited</td>
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<td>Rock Wool Insulation</td>
<td>Llyod Insulations, Rock wool (India) Ltd, Shreeram Rock wool.</td>
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<td>Aluminium Sections</td>
<td>NALCO, JINDAL</td>
</tr>
<tr>
<td>11</td>
<td>Glazing/Toughened Glass</td>
<td>Saint Gobin, Atul, Modi, Asai, Hindustan, IHG,</td>
</tr>
<tr>
<td>12</td>
<td>Brass / Copper Mortice Lock</td>
<td>GODREJ, Europa, ACME</td>
</tr>
<tr>
<td>13</td>
<td>Door Closer</td>
<td>Hardwin, Everite, Dorma, Godrej</td>
</tr>
<tr>
<td>15</td>
<td>Handles</td>
<td>Diana, Jyothi</td>
</tr>
<tr>
<td>16</td>
<td>Tower Bolts</td>
<td>Jyothi, Diana</td>
</tr>
<tr>
<td>17</td>
<td>Rolling Shutter</td>
<td>Srima Sales Corpn., ABAQS, SenHarvic, Radiant Eng. Gandhi Automation, Rama Rolling shutter, Swastik Rolling shutter</td>
</tr>
<tr>
<td>18</td>
<td>Ceramic Tiles</td>
<td>Kajaria, Nitco, Johnson</td>
</tr>
<tr>
<td>19</td>
<td>Vitrified Ceramic Tiles</td>
<td>Asian, Marbito, Kajaria, Nitco</td>
</tr>
<tr>
<td>20</td>
<td>PVC Flooring</td>
<td>Krishna Vinyle, Rikvin, Armstrong, FORBO Switzerland, LG Floors.</td>
</tr>
<tr>
<td>21</td>
<td>MS Tubes</td>
<td>Jindal, TATA, Indian Tube, Zenith</td>
</tr>
<tr>
<td>22</td>
<td>PVC Pipes</td>
<td>Finolex, Sudhakar, Jain, Kisan</td>
</tr>
<tr>
<td>23</td>
<td>Particle Board</td>
<td>Novapan, Indian plywood, Kitply, Green ply.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Brands/Models</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>24</td>
<td>Plywood/ Shuttering plywood</td>
<td>Century, Kit ply, Green ply</td>
</tr>
<tr>
<td>25</td>
<td>Paints/Distemper</td>
<td>Asian Paints, Berger, Jenson Nicholson, ICI</td>
</tr>
<tr>
<td>26</td>
<td>Laminate</td>
<td>Fevicoal, Unicoal, vamicoal</td>
</tr>
<tr>
<td>27</td>
<td>Cast iron pipes and CI fittings</td>
<td>Kesoram, Electro steel( IS 210, IS 1536, IS 1538)</td>
</tr>
<tr>
<td>28</td>
<td>Cast iron gate valves</td>
<td>Kirloskar, Kilburn, Sarkar (IS 780)</td>
</tr>
<tr>
<td>29</td>
<td>G.I. pipes</td>
<td>Leader, Zoloto, Sant (IS 778, IS 5352)</td>
</tr>
<tr>
<td>30</td>
<td>Polysulphide Sealants</td>
<td>Leader, Zoloto, Sant (IS 778, IS 5352)</td>
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<tr>
<td>31</td>
<td>Welding Electrodes</td>
<td>Leader, Zoloto, Sant (IS 778, IS 5352)</td>
</tr>
<tr>
<td>32</td>
<td>White cement</td>
<td>JK, Birla</td>
</tr>
<tr>
<td>33</td>
<td>Shalitax Board</td>
<td>Shalimar Industries</td>
</tr>
<tr>
<td>34</td>
<td>Paver Blocks</td>
<td>Endura, Aeon, Besser</td>
</tr>
<tr>
<td>35</td>
<td>Poly propylene fibres</td>
<td>Reliance industries limited, Nina, JB Associates</td>
</tr>
<tr>
<td>36</td>
<td>General Steel doors/Acoustic Door/ Fire Door</td>
<td>Leader, Zoloto, Sant (IS 778, IS 5352)</td>
</tr>
<tr>
<td>37</td>
<td>CP brass bib cocks, stop cocks, pillar cocks</td>
<td>ISI Marked, Jaquar, ESSCO, MARC (IS 8931, IS 781, IS 1711)</td>
</tr>
<tr>
<td>38</td>
<td>CP brass shower</td>
<td>ISI Marked, Jaquar, ESSCO, MARC</td>
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<tr>
<td>39</td>
<td>Hume pipes NP2</td>
<td>IS 458</td>
</tr>
<tr>
<td>40</td>
<td>Water closets</td>
<td>Parryware, Hindware, Cera</td>
</tr>
<tr>
<td>41</td>
<td>Wash basins</td>
<td>Parryware, Hindware, Cera</td>
</tr>
<tr>
<td>42</td>
<td>Urinal</td>
<td>Parryware, Hindware, Cera</td>
</tr>
<tr>
<td>43</td>
<td>Mirror</td>
<td>Modi, Saint gobain</td>
</tr>
<tr>
<td>44</td>
<td>WC seat cover</td>
<td>Commander, Parryware, Cera (IS 2548)</td>
</tr>
<tr>
<td>45</td>
<td>Auto flush system for urinal</td>
<td>AOS system, ROBO auto flush system</td>
</tr>
<tr>
<td>46</td>
<td>Ceramic flush tank</td>
<td>Parryware, Hindware, Cera</td>
</tr>
<tr>
<td>47</td>
<td>PVC flush tank</td>
<td>Parryware, Commander, Cera</td>
</tr>
<tr>
<td>48</td>
<td>Pig lead</td>
<td>Hinustan Zinc</td>
</tr>
<tr>
<td>49</td>
<td>Pump sets</td>
<td>Kirloskar, Crompton greaves, CRI, Texmo</td>
</tr>
<tr>
<td>50</td>
<td>non return valves, foot valves</td>
<td>Kalapakam, Leader, Zoloto, Sant</td>
</tr>
<tr>
<td>51</td>
<td>UV resistant polyethylene film(silpaulin sheet)</td>
<td>Supreme industries limited, or approved equivalent</td>
</tr>
<tr>
<td>52</td>
<td>Stud Anchors , chemical adhesives for rebar fixing</td>
<td>HILTI, FISHER, or any approved</td>
</tr>
</tbody>
</table>