

**REQUEST FOR PROPOSAL FOR
IMPLEMENTATION OF
“SMART STREET LIGHTING”**

**For Spine Roads and EESL
Roads in Guwahati**

**On
Design, Build, Operate & Renovation
Basis**



Guwahati Smart City Limited,
Guwahati, Assam

Tender Notice No.SPV/GSCL/DEV/63/2017/Pt-I/300

Dated: 30/05/2019

**Volume III: General Conditions of
Contract (GCC)**

Content Sheet

GENERAL CONDITIONS OF CONTRACT (GCC)	
Description	Page No
A. Contract and Interpretations	
1.0 Definitions	4
2.0 Contract Documents	6
3.0 Interpretation	7
4.0 Notices	8
5.0 Governing Law	9
6.0 Settlement of Disputes	9
7.0 Scope of Services	11
8.0 Time for Commencement and Completion	11
9.0 CONTRACTOR's Responsibilities	11
10.0 Employer's Responsibilities	15
11.0 Contract Price	15
12. 0 Mobilisation Advance	15
13.0 Performance Security	15
14.0 Retention Manoev	15
15.0 Taxes and Duties	15
16.0 Copyright	16
17.0 Confidential Information	16
18. Representatives	16
19.0 Fraud and Corruption	17
20.0 Force Majeure	17
21.0 Termination	18
22.0 Jurisdiction of Court	19
23.0 Indemnity Clause	19
24.0 Site Regulations and Safety	20
25.0 Change in Laws and Regulations	20
26.0 Defect Liability	20
27.0 Environmental Safeguards	21
28.0 Liquidated damage	22
29.0 Closure of the contract	22
30.0 Un-foreseeable Difficulties	22
31.0 Change in Constitution of Firm	23

33.0 Indemnifications	23
33.0 Insurance of Work	23
34.0 Transportation	23
35.0 Additional Conditions	24
36.0 Compliance with labour regulations	25
37.0 Salient features of Some Major Labour Laws Applicable to Establishments Engaged in building and other Construction work	25
38.0 Safety and Welfare Provisions for labour to be employed by the Contractor	27
39.0 Labour Welfare Provisions	30

A. Contract and Interpretations

1.0 Definitions

The following words and expressions shall have the meanings hereby assigned to them:

- 1.1 “Contract” means the Contract Agreement entered into between the Guwahati Smart City Limited (GSCL) and the CONTRACTOR, together with the Contract Documents referred to therein, they shall constitute the Contract, and the term “the Contract” shall in all such documents be construed accordingly.
- 1.2 "Bill of Quantities" means the priced and completed Bill of Quantities forming part of the Bid.
- 1.3 “GCC” means the General Conditions of Contract hereof.
- 1.4 “SCC” means the Special Conditions of Contract.
- 1.5 “Day” means calendar day.
- 1.6 “Month” means calendar month
- 1.7 “Employer” means, Guwahati Smart city Limited (GSCL), Staffed Building, Bhangagarh, Guwahati- 05 and includes the legal successors or permitted assigns of the GSCL.
- 1.8 “Engineer-in-Charge” means the person appointed by the Employer to act as Engineer-in-Charge for the purpose of the Contract, or any other competent person appointed by the Employer and notified to the CONTRACTOR to act in replacement to such person and shall include his authorized representative.
- 1.9 “Engineer” means the person appointed by the Employer to act as Engineer for the purposes of the Contract, or any other competent person appointed by the Employer and notified to the CONTRACTOR to act in replacement to such person and shall include his authorised representative.
- 1.10 “CONTRACTOR” means the person(s) whose bid to perform the Contract has been accepted by the Employer and is named as such in the Contract agreement, and includes the legal successors or permitted assigns of the CONTRACTOR.
- 1.11 “CONTRACTOR’s Representative” means any person nominated by the CONTRACTOR and approved by the Employer in the manner provided in GCC Sub- Clause 17.2 (CONTRACTOR’s Representative and Construction Manager) hereof to perform the duties delegated by the CONTRACTOR.
- 1.12 “Sub CONTRACTOR” including vendors, means any person to whom execution of any part of the Facilities, including preparation of any design or supply of any Plant and Equipment, is sub-contracted directly or indirectly by the CONTRACTOR and includes its legal successors or permitted assigns.
- 1.13 “Adjudicator” means the person or persons appointed by the Employer to make a decision on or to settle any dispute or difference between the Employer and

the CONTRACTOR referred to him or her by the parties pursuant to GCC Sub-Clause 6.1 (Adjudicator) hereof.

- 1.14 "Contract Price" means the sum specified in Clause 11 (Contract Price) of the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
- 1.15 "Facilities" means the Plant and Equipment to be supplied and installed, as well as all the Installation Services to be carried out by the CONTRACTOR under the Contract.
- 1.16 "Specification" means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer.
- 1.17 "Temporary Works" are works designed, constructed, installed, and removed by the CONTRACTOR which are needed for construction or installation of the Works.
- 1.18 "Plant and Equipment" means permanent plant, equipment, machinery, apparatus, articles and things of all kinds to be provided and incorporated in the Facilities by the CONTRACTOR under the Contract (including the spare parts to be supplied by the CONTRACTOR under the contract), but does not include CONTRACTOR's Equipment.
- 1.19 "Installation Services" means all those services ancillary to the supply of the Plant and Equipment for the Facilities, to be provided by the CONTRACTOR under the Contract e.g. transportation and provision of marine or other similar insurance, inspection, expediting, Site preparation works (including the provision and use of CONTRACTOR's Equipment and the supply of all construction materials required), installation, testing, pre-commissioning, commissioning, operations, maintenance, the provision of operations and maintenance manuals, training of GSCL's Personnel etc.
- 1.20 "CONTRACTOR's Equipment" means all plant, facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities that are to be provided by the CONTRACTOR, but does not include Plant and Equipment, or other things intended to form or forming part of the Facilities.
- 1.21 "Site" means the land and other places upon which the Facilities are to be installed, and such other land or places as may be specified in the Contract as forming part of the Site.
- 1.22 "Time for Completion" means the time within which Completion of the Facilities as a whole (or of a part of the Facilities where a separate Time for Completion of such part has been prescribed) is to be attained in accordance with the relevant provisions of the Contract.
- 1.23 "Liquidated Damage"
- If the CONTRACTOR fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Employer may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the appendix "A" of Contract condition for each week or part

thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage as specified in Appendix "A" of Contract condition t. Once the maximum is reached, the Employer may terminate the Contract.

- 1.24 "Completion" means that the Facilities have been completed operationally and structurally, and that all work in respect of Pre-commissioning of the Facilities or such specific part thereof has been completed, and Commissioning has been attained as per Technical Specifications.
- 1.25 "Commencement Date" means the date specified in the notice to commence issued by the Employer to the CONTRACTOR.
- 1.26 "Pre-commissioning" means the testing, checking and other requirement specified in the Technical Specifications that are to be carried out by the CONTRACTOR in preparation for commissioning.
- 1.27 "Commissioning" means trial/initial operation of the Facilities or any part thereof by the CONTRACTOR, which operation is to be carried out by the CONTRACTOR (Commissioning) hereof, for the purpose of carrying out Guarantee Test(s).
- 1.28 "Guarantee Test(s)" means the test(s) specified in the Technical Specifications to be carried out to ascertain whether the Facilities or a specified part thereof is able to attain the Functional guarantees specified in the Technical specifications.
- 1.29 "Operational Acceptance" means the acceptance by the Employer of the Facilities (or any part of the Facilities where the Contract provides for acceptance of the Facilities in parts), which certifies the CONTRACTOR's fulfillment of the Contract in respect of Functional Guarantees of the Facilities
- 1.30 "Defect Liability Period" means and includes the period of validity of the warranties given by the CONTRACTOR which includes manufacturers guarantees commencing at successful completion of Commissioning (Trial Operation) of the Facilities or a part thereof, during which the CONTRACTOR is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in GCC clause 23 (Defect Liability) hereof.

2.0 Contract Documents

- 2.1 Subject to the Contract Agreement, all documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.
- 2.2 The documents forming the Contract shall be interpreted in the following order of priority
- (a) The Contract Agreement (including addenda, clarification, when signed by all parties concerned)
 - (b) The Letter of Acceptance
 - (c) Volume III : General Conditions of Contract
 - (d) Volume II : Works Requirement / Technical Specification & Drawings
 - (e) Volume I : Information to Bidder
 - (f) The Bid (accepted Price Proposal) of the Successful Bidder, Letters and documents including the covering letter of the Successful Bidder, minutes of meeting, clarification letters, if any, and the letter of acceptance and nomination instruction by the Employer

- (g) Volume IV: Price Bid BOQ
- (h) Completed Technical Schedules
- (i) Bidder's Technical Proposal other than Completed Technical Schedules
- (j) Any other documents issued by the GSCL before signing the Contract Agreement and forming the part of the Contract

2.3 All documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.

2.4 Two original Contract Documents shall be made, one for the Employer and the other for the CONTRACTOR. The CONTRACTOR shall make two (2) copies of Contract Document and supply without any charge, to Employer.

3.0 Interpretation

3.1 In interpreting these Conditions of Contract, singular also means plural, word including one gender includes all genders. Headings have no significance.

Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about the Conditions of Contract.

3.2 If partial completion is specified in the Contract Data, references in the Conditions of contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works).

3.3 The documents forming the Contract shall be interpreted in the following order of priority

- (a) The Contract Agreement (including addenda, clarification, when signed by all parties concerned)
- (b) The Letter of Acceptance
- (c) Volume III Special Conditions of Contract
- (d) Volume III : General Conditions of Contract
- (e) Volume II : Works Requirement / Technical Specification
- (f) Volume I : Information to Bidder
- (g) The Bid (accepted Price Proposal)
- (h) Volume IV: Price Bid BOQ
- (i) Completed Technical Schedules
- (j) Bidder's Technical Proposal other than Completed Technical Schedules
- (k) Any other documents issued by the GSCL before signing the Contract Agreement and forming the part of the Contract

3.4 Language

3.4.1 The official language shall be English only.

3.4.2 If any of the Contract Documents, correspondence or communications are prepared in any language other than the governing language under GCC Clause 3.4 above, the English translation of such documents, correspondence or communications shall prevail in matters of interpretation.

3.5 **Headings**

3.5.1 The headings and marginal notes in the General Conditions of Contract are included for ease of reference, and shall neither constitute a part of the Contract nor affect its interpretation.

3.6 **Entire Agreement**

3.6.1 The Contract constitutes the entire agreement between the Employer and the CONTRACTOR with respect to the subject matter of Contract and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

3.7 **Amendment**

3.7.1 No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party here to.

3.8 **CONTRACTOR**

3.8.1 Subject to the provisions of the Contract, the CONTRACTOR shall be solely responsible for the manner in which the Contract is performed. All employees, representatives or Sub CONTRACTOR engaged by the CONTRACTOR in connection with the performance of the Contract shall be under the complete control of the CONTRACTOR and shall not be deemed to be employees of the GSCL, and nothing contained in the Contract or in any subcontract awarded by the CONTRACTOR shall be construed to create any contractual relationship between any such employees, representatives or Sub CONTRACTORS and the GSCL.

3.9 **Joint Venture or Consortium**

Refer Vol I.

3.10 **Non-Waiver**

3.10.1 No relaxation, forbearance, delay or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect or restrict the rights of that party under the contract, nor shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

3.10.2 Any waiver of a party's rights, powers or remedies under the Contract must be in writing, must be dated and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

3.11 **Severability**

3.11.1 If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

3.12 **Country of Origin**

3.13 "Origin" means the place where the materials, equipment and other supplies for the Facilities are mined, grown, produced or manufactured, and from which the services are provided.

4.0 **Notices**

- 4.1.1 Unless otherwise stated in the Contract, all notices to be given under the Contract shall be in writing, and shall be sent by personal delivery, airmail post, special courier, cable, facsimile or Electronic Data Interchange (EDI) to the address of the relevant party set out in the Contract Coordination Procedure to be finalized.
- 4.1.2 Any notice sent by cable, and facsimile or shall be confirmed within 2 (two) days after dispatch by notice sent by airmail/ post or special courier, except as otherwise specified in the contract.
- 4.1.3 Any notice sent by airmail post or special courier shall be deemed (in the absence of evidence of earlier receipt) to have been delivered ten (10) days after dispatch. In proving the fact of dispatch, it shall be sufficient to show that the envelope containing such notice was properly addressed, stamped and conveyed to the postal authorities or courier service for transmission by airmail or special courier.
- 4.1.4 Any notice delivered personally or sent by telegraph, facsimile shall be deemed to have been delivered on date of its dispatch.
- 4.1.5 Either party may change its postal, cable, facsimile or EDI address or addressee for receipt of such notices by ten (10) days' notice to the other party in writing.
- 4.1.6 Notices shall be deemed to include any approvals, consents, instruction orders and certificates to be given under the Contract.

5.0 Governing Law

- 5.1.1 The Contract shall be governed by and interpreted in accordance with laws in force in India. The High Court of Guwahati shall have exclusive jurisdiction in all matters arising under the Contract.

6.0 Settlement of Disputes

6.1.1 Adjudicator

- (a) If any dispute of any kind whatsoever shall arise between the Employer and the CONTRACTOR in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the Facilities whether during the progress of the Facilities or after their completion and whether before or after the termination, abandon end or breach of the Contract—the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference by mutual consultation, then the dispute shall be referred in writing by either party to the Adjudicator, with a copy to the other party.
- (b) The Adjudicator shall give its decision in writing to both parties within twenty-eight (28) Working days of a dispute being referred to it. If the Adjudicator has done so, and no notice of intention to commence Arbitration has been given by the Employer or the CONTRACTOR within fifty-six (56) days of such reference, the decision shall become final and binding upon the Employer and the CONTRACTOR. Any decision that has become final and binding shall be implemented by the parties forthwith.

6.1.2 Arbitration

- (a) If either the Employer or the CONTRACTOR is dissatisfied with the Adjudicator's decision, or if the Adjudicator fails to give a decision within twenty-eight (28) working days of a dispute being referred to it, then either the Employer or the CONTRACTOR may, within fifty-six (56) days of such reference, give notice to the other party, with a copy for information to the Adjudicator, of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.
- (b) Any dispute, in respect of which a notice of intention to commence arbitration has been given, in accordance with GCC Sub-Clause 6.1.2(a), shall be finally settled by Arbitration. Arbitration may be commenced prior to or after completion of the Facilities.
- (c) In case the CONTRACTOR is a Public Sector Enterprise or a Government Department
- In case the CONTRACTOR is a Public Sector Enterprise or a Government Department, the dispute shall be referred for resolution in Permanent Machinery for Arbitration (PMA) of the Department of Public Enterprise, Government of India. Such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary/Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusively. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.
- (d) In case the CONTRACTOR is not a Public Sector Enterprise or a Government Department
- In all other cases, any dispute submitted by a party to Arbitration shall be heard by an Arbitration panel composed of three arbitrators, in accordance with the provisions set forth below.
- (e) The Employer and the CONTRACTOR shall each appoint one Arbitrator, and these two Arbitrators shall jointly appoint a third Arbitrator, who shall chair the Arbitration panel. If the two arbitrators do not succeed in appointing a third Arbitrator within twenty eight (28) days after the letter of the two Arbitrators has been appointed, the third Arbitrator shall, at the request of either party, be appointed by the Employer
- (f) If one party fails to appoint its Arbitrator within forty-two (42) days after the other party has named its Arbitrator, the party which has named an Arbitrator may request the Employer to appoint the second Arbitrator.
- (g) If for any reason an Arbitrator is unable to perform its function, the mandate of the Arbitrator shall terminate in accordance with the provisions of applicable laws as mentioned in GCC Clause **5.0** (Governing Law) and a substitute shall be appointed in the same manner as the original arbitrator.

- (h) Arbitration proceedings shall be conducted in accordance with The Arbitration and Conciliation Act, 1996 or its subsequent thereof. The place of Arbitration shall be Guwahati
- (i) The decision of a majority of the arbitrators (or of the third Arbitrator chairing the arbitration panel, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court. The parties thereby waive any objections to or claims of immunity from such enforcement.
- (j) The Arbitrator(s) shall give reasoned award.
- (k) Notwithstanding any reference to the Adjudicator or arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless otherwise they agree the Employer shall pay the CONTRACTOR any monies due to the CONTRACTOR.

7.0 Scope of Services

Scope of Services under this contract shall be in accordance with that mentioned in Vol I and II of the RFP.

8.0 Time for Commencement and Completion

8.1 The CONTRACTOR shall commence work from the date of Signing of the Agreement and the CONTRACTOR shall thereafter proceed in accordance with the Time Schedule as agreed in the Contract Agreement

8.2 The CONTRACTOR shall attain Completion of the work (or of a part where a separate time for Completion of such part is specified in the Contract) within the time stated in the Contract or within such extended time to which the CONTRACTOR shall be entitled under GCC Clause **8.3**-Extension of Time for Completion hereof.

8.3 Extension of time

8.3.1 If the CONTRACTOR shall desire an extension of the time for completion of the work on the ground of his having been unavoidably hindered in its execution or on any other grounds, he shall apply, in writing, to the Engineer within 5 working days for each location with the type and details regarding the hindrance, on account of which he desires such extension as aforesaid.

8.3.2 The Authority Competent to grant extension under the rules / delegations of power or other duly authorized Engineer shall, if in his opinion (which shall be final), reasonable grounds be shown therefore, authorize such extension of time, if any, as may, in his opinion, be necessary or proper.

8.3.3 If the period of completion of contract expires before the expiry of the period of 5 days provided in this clause, the application for extension shall be made before expiry of the period stipulated for completion of the contract.

9.0 CONTRACTOR's Responsibilities

9.1 The CONTRACTOR shall design, manufacture (including associated purchases and/or subcontracting), install and complete the Facilities with due care and diligence in accordance with the Contract.

9.2 The CONTRACTOR confirms that it has entered into this Contract on the basis of a proper examination of the data relating to the tendered work including any data as provided by the Employer, and on the basis of information Site that the CONTRACTOR could have obtained from a visual inspection of the Site and of

other data readily available to it relating to the Facilities as at the date of bid submission. The CONTRACTOR acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Facilities.

9.3 The CONTRACTOR shall acquire in its name all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located that are necessary for the performance of the Contract, including, without limitation, visas for the CONTRACTOR and Sub CONTRACTOR's personnel and entry permits for all imported CONTRACTOR's Equipment. The CONTRACTOR shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer hereof and that are necessary for the performance of the Contract.

9.4 The CONTRACTOR shall comply with all laws in force in the country where the Facilities are installed and where the Installation Services are carried out. The laws will include all national, provincial, municipal or other laws that affect the performance of the Contract and bind upon the CONTRACTOR. The CONTRACTOR shall indemnify and hold harmless the Employer from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the CONTRACTOR or its personnel, including the Sub CONTRACTOR and their personnel hereof.

9.5 Work to be open to inspection: CONTRACTOR to be present

All work, under or in course of execution or executed in pursuance of the contract shall, at all times, be opened to inspection and supervision of the Employer/ Engineer, and his subordinates and any other authorized agency of Employer and the CONTRACTOR shall, at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the Engineer or his subordinate and any other authorized agency of the Employer to visit the works shall have been given to the CONTRACTOR, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for the purpose. Orders given to the CONTRACTOR's agent shall be considered to have the same force as if they had been given to the CONTRACTOR himself.

9.6 The Safety Procedures

9.6.1 The CONTRACTOR Shall:

- (a) Comply with all applicable safety regulations,
- (b) Take care for the safety of all persons entitled to be on the site,
- (c) Provide any temporary works (including roadways, footways, guards and fences) which may be necessary because of the execution of works, for the use and protection of the public and of owners.

9.7 Site office

9.7.1 CONTRACTOR shall have to establish well furnished site office at Guwahati for his supervisory staff and for project meetings with Employer/Engineer. Site office shall be approved by the Employer.

9.8 Planning, Designing and Execution of the Works

- 9.8.1 The CONTRACTOR shall carry out and be responsible for the design of works, including any site surveys, subsoil investigations, material testing and all other things necessary for proper planning and design.
- 9.8.2 Within 10 days from award of the contract, the CONTRACTOR shall start submitting drawings, construction documents etc, for review and approval by the Engineer. The CONTRACTOR will be fully responsible for ensuring that its drawings, designs and construction documents satisfy all requirements for constructing works that are complete and fully functional in all respects.
- 9.8.3 The CONTRACTOR shall prepare and keep up to date, a complete set of "as built" records of the execution of the works, showing the exact as built locations, sizes and details of the work as executed. These records shall be kept on the site and two sets of such records shall be submitted to the Employer.
- 9.8.4 In addition the CONTRACTOR shall supply to the Engineer's representative as built drawings of the works, showing all works executed.
- 9.8.5 CONTRACTOR shall be responsible for preparing baseline Programme, upon acceptance of the Baseline Programme by the Employer, the CONTRACTOR shall adhere to it strictly. The CONTRACTOR shall ensure that preparation, updating and revision of programme of works are carried out by experienced and qualified personnel.
- 9.9 Monthly Reports and Meetings
- 9.9.1 Monthly Reports
- (a) Monthly Progress Reports shall be prepared by the CONTRACTOR and submitted to the Employer. The first report shall cover the period up to the end of the first calendar month following the commencement date. Reports shall be submitted monthly thereafter, each within two working days after the last day of the month to which it related.
- (b) Reporting shall continue during both construction and operation and Maintenance period.
- (c) The reporting format shall be developed by the CONTRACTOR with the approval from Employer within Ten days of commencement of work
- 9.9.2 Meetings
- (a) Meetings shall be held in the office of Employer / Engineer or at any other places as mutually fixed in advance. The proposed agenda for meetings shall be exchanged at least Two days in advance. It is required that a decision maker of the CONTRACTOR is present at the meetings so that binding decisions can be taken about outstanding issues.
- 9.10 Quality Control
- 9.10.1 Employer shall have the right to exercise proper Quality Control measures. The CONTRACTOR shall provide all assistance to conduct such tests.
- 9.11 Operation and Maintenance Manuals
- 9.11.1 Prior to the commencement of the tests on completion, the CONTRACTOR shall supply to the Employer provisional Operation and Maintenance manuals in sufficient details. The work shall not be considered to be completed for the purposes of completion of works until the Employer has received final Operation and Maintenance manuals in such details.
- 9.12 Land for Temporary use

- 9.12.1 Land for labor camps, storage yards, temporary site sheds, casting yard shall be arranged by the CONTRACTOR at the site or nearby plot with the consent of Employer at his own cost.
- 9.13 CONTRACTOR's Materials, Labors, etc.
- 9.13.1 The CONTRACTOR shall provide everything necessary for the proper execution of the works according to the intent and meaning of the drawings, and specifications taken together, whether the same is or is not particularly shown or described therein. If the CONTRACTOR finds any discrepancy therein he shall immediately and in writing refer the same to the Engineer representative. The decision of the Engineer shall be final and binding on the CONTRACTOR.
- 9.14 Power and Water
- 9.14.1 CONTRACTOR shall at its own responsibility and cost arrange for the power supply and water supply required for the construction works at all the sites.
- 9.15 Materials
- 9.15.1 All construction materials like Steel, Cement and other materials necessary for execution of this work shall not be supplied by the Employer and same shall be procured by the CONTRACTOR at his own cost. Procurement and testing certificates for cement and reinforcement steel round bars or high yield strength steel deformed bars as required shall be arranged by the CONTRACTOR at his own cost from standard, reputed manufacturers as approved by the Employer. The CONTRACTOR shall submit statement of sources for procurement of materials.
- 9.15.2 Procurement of all materials shall be arranged by the CONTRACTOR at his own cost from standard, reputed manufacturers/suppliers as may be approved by the Employer. The royalty receipts, challans, etc shall have to be submitted by the CONTRACTOR from time to time to the Employer.
- 9.15.3 The CONTRACTOR will have to make his own arrangement for plants, equipments, machineries to be used in the execution of this work well in time after award of the Contract.
- 9.16 Labor Employment
- 9.16.1 The CONTRACTOR shall furnish to the Engineer every week during the progress of the works classified weekly returns of the number of the people employed on the work during the week. The report of skilled and unskilled labors shall be given in the prescribed form. The CONTRACTOR shall have to obtain labor license from concerned Government Department and shall have to submit to the Employer.
- 9.16.2 During continuance of the contract, the CONTRACTOR and his sub CONTRACTORS shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority
- 9.17 Treasure Trove
- 9.17.1 In the event of the Discovery by the CONTRACTOR or his employees during the progress of the work of any treasure, coins, antiquities, fossils, minerals or other articles or things of value or interest, whether geological, archeological or any

other such treasure or other things shall deemed to be the absolute property of the client.

9.17.2 The CONTRACTOR shall take all reasonable precautions to prevent his workmen or any other persons from removing such things as above and shall immediately upon discovery thereof acquaint the Employer of such discovery.

9.18 CONTRACTOR's General Obligations

9.18.1 The CONTRACTOR shall be responsible for Design, Supply, Installation and Maintenance of Street poles and Luminaries with all fittings and Operation and Maintenance as per Employers requirement and specification given in Bid Document. After the satisfactory completion and commissioning of all Tendered works, the CONTRACTOR is required to take up the Maintenance of the same as approved by the Employer.

10.0 Employer's Responsibilities

10.1.1 The Employer shall give the CONTRACTOR right of access to, and possession of all parts of the Site for commencement of work. The Employer shall provide, at the request of the CONTRACTOR, such reasonable assistance as to allow the CONTRACTOR to obtain properly any permits, licences or approvals required by the Laws of the Country

B. Payment

11.0 Contract Price

The Contract Price shall be as specified in clause 11.0 (Contract Price and Terms of Payment) of the Form of Contract Agreement.

The Contract Price shall be adjusted in accordance with provisions of (Price Adjustment) to the Contract Agreement, if applicable. It will be mentioned in Appendix A General Conditions of Contract

11.1 The Implementing Partner shall be deemed to have satisfied itself as to the hereof, correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.

12.0 Mobilization Advance

Refer Vol-I

13.0 Performance Security

Refer Vol-I

14.0 Retention Money

Refer Vol-I

15.0 Taxes and Duties

15.1 Except as otherwise specifically provided in the Contract, the CONTRACTOR shall bear and pay all taxes, duties, levies and charges applicable to the CONTRACTOR, its Sub CONTRACTOR or their employees by all municipal, state or national government authorities.

15.2 All taxes, duties and levies on works contract, if any, shall be to the CONTRACTOR's account and no separate claim in this regard will be entertained by the GSCL.

15.3 For the purpose of the Contract, it is agreed that the Contract Price is based on the taxes, duties, levies and charges prevailing at the date seven (7) days prior to the last date of bid submission in the country where the Site is located. If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of Contract, which was or will be assessed on the CONTRACTOR in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction there-from, as the case may be, in accordance with GCC Clause 22 (Change in Laws and Regulations) hereof.

C. Intellectual Property
16.0 Copyright

16.1 The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the CONTRACTOR herein shall remain vested in the CONTRACTOR or, if they are furnished to the Employer directly or through the CONTRACTOR by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party. The Employer shall however be free to reproduce all drawings, documents and other material furnished to Employer for the purpose of the contract including, if required, for operation and maintenance of the facilities.

17.0 Confidential Information

17.1 The Employer and the CONTRACTOR shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the CONTRACTOR may furnish to its Sub CONTRACTOR such documents, data and other information it receives from the Employer to the extent required for the Sub CONTRACTOR to perform its work under the Contract, in which case even the CONTRACTOR shall obtain from such Sub CONTRACTOR undertaking of confidentiality similar to that imposed on the CONTRACTOR under this GCC clause 16.

17.2 The Employer shall not use such documents, data and other information received from the CONTRACTOR for any purpose other than the operation and maintenance of the Facilities. Similarly, the CONTRACTOR shall not use such documents, data and other information received from the GSCL for any purpose other than the design, procurement of Plant and Equipment, construction or such other work and services as are required for the performance of the Contract.

18.0 Representatives

18.1 CONTRACTOR's representative

18.1.1 The CONTRACTOR shall appoint the CONTRACTORs representative and shall give him all authority necessary to act on CONTRACTORs behalf under the contract. Unless the CONTRACTORs representative is named in the Contract, the CONTRACTOR shall prior to the commencement date, submit to the Employer for consent the name and particulars of the person the

CONTRACTOR proposes to appoint as CONTRACTORs representative. If the consent is withheld or subsequently revoked, or if the appointed person fails to act as CONTRACTOR's representative, the CONTRACTOR shall similarly submit the name and particulars of another suitable person for such appointment. The CONTRACTOR shall not, without prior consent of Employers representative revoke the appointment of CONTRACTORs representative or appoint a replacement.

- 18.1.2 The CONTRACTOR's Representative shall represent and act for the CONTRACTOR at all times during the currency of the Contract and shall give to the Engineer all the CONTRACTOR's notices, instructions, information and all other communications under the contract.
- 18.1.3 All notices, instructions, information and all other communications given by the Employer to the CONTRACTOR under the Contract shall be given to the CONTRACTOR's Representative or, in its absence, its deputy, except as herein otherwise provided.
- 18.1.4 The CONTRACTOR shall not revoke the appointment of the CONTRACTOR's Representative without the Employers prior written consent, which shall not be unreasonably withheld. If the Employer consents thereto, the CONTRACTOR shall appoint some other person as the CONTRACTOR's Representative, pursuant to the procedure set out in GCC Sub- Clause 18.1.1
- 18.1.5 The CONTRACTOR's Representative may, subject to the approval of the Employer (which shall not be unreasonably withheld), at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the CONTRACTOR's Representative and delivered to the Employer, and shall specify the powers, functions and authorities thereby delegated or revoked.
- 18.1.6 Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GCC Sub-Clause 18.1.5 shall be deemed to be an act or exercise by the CONTRACTOR's Representative.
- 18.1.7 Notwithstanding anything stated in GCC Sub-clause 18.1.1 above, for the purpose of execution of contract, the Employer and the CONTRACTOR shall finalize and agree to a Contract Co-ordination Procedure and all the communication under the Contract shall be in accordance with such Contract Co-ordination Procedure.
- 18.1.8 The Employer may by notice to the CONTRACTOR object to any representative or person employed by the CONTRACTOR in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under GCC 21.0. The Employer shall provide evidence of the same, whereupon the CONTRACTOR shall remove such person from the Facilities.
- 18.1.9 If any representative or person employed by the CONTRACTOR is removed in accordance with GCC Sub-Clause 18.1.5, the CONTRACTOR shall, where required, promptly appoint a replacement.

19.0 Fraud and Corrupt Practices

Refer Vol I

20.0 Force Majeure

- 20.1 “Force Majeure” shall mean any event beyond the reasonable control of the Employer or of the CONTRACTOR, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:
- (a) War, hostilities (whether war be declared or not), invasion, act of foreign enemies,
 - (b) Rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts;
 - (c) Munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the CONTRACTOR’s use of such munitions, explosives, radiation or radio-activity, and
 - (d) Natural catastrophes such as earthquake, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster
- 20.2 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within Fifteen (15) days after the occurrence of such event.
- 20.3 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party’s performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with GCC Clause.
- 20.4 If the performance of the Contract is substantially prevented, hindered or delayed for a single period of more than thirty (30) days or an aggregate period of more than seventy five (75) days on account of one or more events of Force Majeure during the currency of the Contract, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other, but without prejudice to either party’s right to terminate the Contract.
- 20.5 The CONTRACTOR shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that it’s delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

21.0 Termination

21.1 Termination for Default

- 21.1.1 The Employer, without prejudice to any other remedy for breach of Contract, by fifteen (15) days Notice of default sent to the CONTRACTOR, may terminate the Contract in whole or in part:
- (a) If the CONTRACTOR fails to deliver any or all of the Works/Goods within the period specified in the Contract, or within any extension thereof granted by the Employer or if the CONTRACTOR fails to perform any other obligation under the contract.

(b) If the CONTRACTOR, in the judgment of the Employer has engaged in fraud and corruption, as defined in GCC Clause 19.0, in competing for or in executing the Contract.

21.1.2 In the event the Employer terminates the Contract in part, pursuant to GCC Clause 21.1, the Employer may procure, upon such terms and in such manner as it deems appropriate, Work/Goods or Related Services similar to those undelivered or not performed, and the CONTRACTOR shall be liable to the Employer for any additional costs for such similar Goods or Related Services. However, the CONTRACTOR shall continue performance of the Contract to the extent not terminated.

21.1.3 In the event of termination of the Order, Employer shall make payment of the price payable for the items delivered and services completed by the CONTRACTOR and accepted by Employer. The CONTRACTOR shall not be entitled to any further compensation for any termination of the Order.

21.2 Termination for Insolvency

21.2.1 The Employer may at any time terminate the Contract by giving Notice to the CONTRACTOR if the CONTRACTOR becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the CONTRACTOR, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Employer.

21.3 Failure or Breach of Contract

21.3.1 In case of the breach of the Contract full/part of the performance Guarantee can be forfeited and action against CONTRACTOR may be taken like Blacklisting, Suspension of Business, Banning of Business etc. along with the termination of contract by Employer without any compensation to the CONTRACTOR.

21.4 Consequences of Termination by Employer

21.4.1 If the Employer with reasonable grounds, terminates the Contract the Performance guarantee and any other sums of the CONTRACTOR with the Employer shall be forfeited and action shall be taken against him as per GCC, if deemed appropriate.

22.0 Jurisdiction of Court

22.1 The Bidding Process shall be governed by, and construed in accordance with, the laws of India. The courts at Guwahati shall have the exclusive jurisdiction over all disputes arising under, pursuant to and/ or in connection with the Bidding Process and implementation of RFP.

23.0 Indemnity Clause

23.1 The CONTRACTOR/agency shall defend, indemnify, release and hold harmless the GSCL from and against any and all loss, damage, injury, liability, demands and claims for injury to or death of any person (including an employee of the CONTRACTOR/agency or GSCL) or for loss of or damage to property (including CONTRACTOR/agency or GSCL property), in each case whether directly or indirectly resulting from or arising out of CONTRACTOR/agency performance under this RFP document / Contract agreement. This indemnity shall apply whether or not GSCL was or is claimed to be passively, concurrently, or actively negligent, and regardless of whether liability without fault is imposed or sought to be imposed on one or more of the GSCL. Such indemnity shall not apply to the extent that it is void or otherwise unenforceable under applicable law in effect on or validly retroactive to the date of this RFP document / Contract agreement and,

shall not apply where such loss, damage, injury, liability, death or claim is the result of the sole negligence or willful misconduct of the GSCL.

24.0 Site Regulations and Safety

24.1 The Employer and the CONTRACTOR shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. The CONTRACTOR shall prepare and submit to the Employer, proposed Site regulations for approval, which approval shall not be unreasonably withheld.

24.2 Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety of the Facilities, gate control, sanitation, medical care, and fire prevention.

24.3 Safety regulations to be followed shall be as per Safety Annexures- A & B.

25.0 Change in Laws and Regulations

25.1 If, after the date seven (7) days prior to the date of Bid submission, in the country where the Site is located, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the costs and expenses of the CONTRACTOR and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the CONTRACTOR has thereby been affected in the performance of any of its obligations under the Contract.

25.2 Bidder to note that any subsequent changes in Tax structure by government will be compensated (Plus or Minus) on availability or submission of actual documentation. CONTRACTOR has to intimate Employer regarding changes occurred in Tax structure after bid submission. If the CONTRACTOR fails to provide such information and if any financial obligation may arise due to change in Tax structure, same will be recovered from CONTRACTOR. The CONTRACTOR shall apply fair means of Stock maintenance and shall adopt accounting standards as may be prescribed under Goods and Service Tax-GST. For arriving at the difference in procurement prices, due to change in GST it will be open for Employer to ask for original invoices, LR, weigh bridge slips, payment details and such other documents as may be required for the purpose. If there is reduction in overall tax burden then proportional benefit of that shall be passed on to the Employer.

26.0 Defect Liability

26.1 The CONTRACTOR warrants that the Facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Plant and Equipment supplied and of the work executed.

26.2 The Defect Liability Period shall be from the date of Completion of the Facilities (or any part thereof) from the date of Operational Acceptance of the Facilities (or any part thereof), whichever first occurs, unless specified otherwise. During defect liability period any faulty or non- working/non-functioning goods/materials or work shall be rectified as well as all defective components shall be replaced. Non-response to any such defect occurs within 48 hours, GSCL may deduct an amount of 0.005 (%)percent on the O&M cost.

- 26.3 If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Plant and Equipment supplied or of the work executed by the CONTRACTOR, the CONTRACTOR shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good such defect as well as any damage to the Facilities caused by such defect..
- 26.4 The Employer shall give the CONTRACTOR a notice stating the nature of any such defect together with all available evidence thereof, The Employer shall give all reasonable opportunity for the CONTRACTOR to inspect any such defect.
- 26.5 The Employer shall give the CONTRACTOR all necessary access to the Facilities and the Site to enable the CONTRACTOR to perform its obligations under this GCC Clause 23. The CONTRACTOR may, with the consent of the Employer , remove from the Site any Plant and Equipment or any part of the Facilities that are defective if the nature of the defect, and/or any damage to the Facilities caused by the defect, is such that repairs cannot be expeditiously carried out at the Site.
- 26.6 If the repair, replacement or making good is of such a character that it may affect the efficiency of the Facilities or any part thereof, the Employer may give to the CONTRACTOR a notice requiring that tests of the defective part of the Facilities shall be made by the CONTRACTOR immediately upon completion of such remedial work, whereupon the CONTRACTOR shall carry out such tests. If such part fails the tests, the CONTRACTOR shall carry out further repair, replacement or making good (as the case may be) until that part of the Facilities passes such tests. The tests in character shall in any case be not less than what has already been agreed by the Employer and the CONTRACTOR for the original equipment/part of the Facilities.
- 26.7 If the CONTRACTOR fails to commence the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the CONTRACTOR, proceed to do such work, and the reasonable costs incurred by the Employer in connection therewith shall be paid to the Employer by the CONTRACTOR or may be deducted by the Employer from any monies due to the CONTRACTOR or claimed under the Performance Security.

27.0 Environmental Safeguards

- 27.1 The CONTRACTOR shall take action of following points and note the stipulations as under, in regards to Environmental Safeguards as stipulated by the Ministry of Environment and Forests.
- 27.2 Appropriate measures shall be undertaken while undertaking digging activities to avoid degradation of water quality.
- 27.3 Borrow pits and other scars created during the road construction shall be properly leveled and treated.
- 27.4 Adequate provision for Infrastructure facilities, i.e, water supply, fuel, sanitation etc, shall be ensured for laborers during construction period in order to avoid damage to the environment.
- 27.5 No excavation from or dumping of waste materials into any water body/wetlands shall be done.

- 27.6 Borrow sites for earth, quarry sites for road construction and dump site shall be identified keeping in view:
- 27.7 No excavation or dumping on private property is carried out without written consent to the owner.
- 27.8 No excavation or dumping shall be allowed on wetlands, forest areas or other ecologically valuable or sensitive locations.
- 27.9 Any approvals required for the same shall be arranged by the CONTRACTOR
- 27.10 The time allowed for carrying out the work as mentioned above, shall be strictly obeyed by the CONTRACTOR
- 27.11 If the CONTRACTOR does not commence the work within the period specified above, the CONTRACTOR shall stand liable for the forfeiture of the performance Security.
- 27.12 If the CONTRACTOR shall desire an extension of the time for completion of the work on the ground of unavoidably hindered in its execution or on any other grounds, the CONTRACTOR shall apply, in writing, to the authority within 5 working days for each location of the date of the hindrance, on account of which the CONTRACTOR desires such extension as aforesaid.
- 27.13 Employer grants extension of the time of completion after examine the reason of extension, if the period of completion of contract expires before the expiry of the period of 5 working days, the application for extension shall be made before the expiry of contract period.

28.0 Liquidated Damage

- 28.1 If the CONTRACTOR fails to deliver any or all of the product or does not perform the services within the time period(s) specified in the Contract, authority shall without prejudice to its other remedies under the contract, deduct from the contract price, as liquidated damages, a sum equivalent to 0.5 % of the price of the undelivered product at the stipulated rate for each week or part thereof during which the delivery of such product may be delayed subject to a maximum limit of 10% of the Contract amount. Such penalty is to be deducted always by the authority from the bill of the firm. Once the maximum of the damages above is reached, authority may consider termination of contract.
- 28.2 Employer may debar the Bidder from taking part in future proposals for a specified period or black list him. The work shall, throughout the stipulated period of completion of the contract, be proceeded with all due diligence, time being essence of the contract, on the part of the Bidder.

29.0 Closure of the Contract

- 29.1 Employer will issue the satisfactory completion certificate on execution of the project with compliance of all terms and condition mentioned in this RFP to close the contract.

30.0 Un-foreseeable Difficulties

- 30.1 The Bidder shall be deemed to have obtained all necessary information as to risk, contingencies and other circumstances that may influence or affect the works;
- 30.2 By signing the contract, the Bidder accepts the total responsibility for having sustained all difficulties and costs of successfully completing the work

30.3 The contract rates shall not be adjusted to take account of any unforeseen difficulties or costs.

31.0 Change in Constitution of Firm

31.1 Any change in the constitution of the firm/company etc. shall be notified forthwith by the firm in writing to the authority within a period of 30 days from the date of its occurrence & such changes shall not relieve any new member or the member of the firm at the time of proposal from any liability under the contract.

31.2 No new partner/partners shall be accepted in the firm/company by the Bidder in respect of the contract unless he/they agree(s) to abide by all its terms and conditions and deposit with the authority on a written agreement to this effect. The firm's receipt of acknowledgement or that of any partner(s) subsequently accepted as above shall bind all of them and will be sufficient to discharge any liability under this contract.

32.0 Indemnifications

32.1 The CONTRACTOR to indemnify the authority against the following:

32.2 The CONTRACTOR shall at its own expense make good any physical loss or damage occasioned by it in the course of the performance of its obligations under this Contract if and to the extent such loss or damage is caused by the willful misconduct or failure to follow good engineering practices of the Bidder,

32.3 The CONTRACTOR shall indemnify, defend and hold harmless the authority and its officers, employees, agents and affiliates against any and all claims of loss, damage and expense of whatever kind and nature, including all related costs and expenses incurred in connection therewith, in respect of personal injury to or death of third parties and in respect of loss of or damage to any third party to the extent that the same arises out of:

32.4 Any breach by the CONTRACTOR of its obligations here under,

32.5 Any negligent act or omission on the part of the CONTRACTOR, its Sub-Contractors or their respective agents or employees, and

32.6 Any willful misconduct or breach of statutory duty on the part of the Contractor, its Sub -CONTRACTORS or their respective agents and employees.

33.0 Insurance for work

33.1 The CONTRACTOR shall effect and maintain during the Contract execution all insurance against accident to worker as may be required to insure the CONTRACTOR's personnel and any other persons employed by it on the work from and against any liability incurred.

33.2 The CONTRACTOR's personnel/any person employed by the CONTRACTOR shall include the Sub- CONTRACTOR and its personnel.

33.3 The CONTRACTOR may also insure itself from any Third Party claims which may have been affected by the action of the CONTRACTOR either directly or indirectly.

33.4 The material supplied under this Contract shall be fully insured by the CONTRACTOR against loss or damage during transportation, storage, and delivery to site.

34.0 Transportation :

34.1 The bidder is required under the contract to transport required material from place of manufacturing to the site. Transport of material to the site, including all required permits, permissions, other incidental costs shall be in the scope of the CONTRACTOR. The CONTRACTOR shall consider same in his quoted price.

35.0 Additional Conditions

35.1 Any damage caused to either private or public property services, structures, etc shall be made good by CONTRACTOR without any extra cost to the Employer.

35.2 CONTRACTOR need to ensure proper and adequate traffic safety signboards, barricades, lighting at night shall be displayed during day and night to ensure that no accidents take place.

35.3 No excavated materials shall allowed to be stacked on roadside/ footpaths/public premises without written permission from Competent Authority.

35.4 The CONTRACTOR shall arrange Security & Storage of their materials to avoid any theft or losses until installation at site. GSCL shall, in no case, shall be responsible for providing any security/storage for the materials & equipments lying at site during or before execution of work. CONTRACTOR shall be responsible for any loss or damage until the completion of the Installation of the street lights.

35.5 That the work to be carried out with diligence and all work is to be done in workmen like manner. The material used by the CONTRACTOR is subject to approval from Engineer, whose decision with rate of progress and to the quality of work and material shall be final.

35.6 That no claim or application for revision in the contract rate will be considered due to sudden rate fluctuation of labor and materials or carriage in market at any stage of work under progress and during the tenure of the Contract.

35.7 That the CONTRACTOR will be responsible for delay in supplying or unavailability of any materials. No claim or damage from the CONTRACTOR shall be entertained by GSCL.

35.8 The CONTRACTOR shall execute extra item of works only after receiving instructions from Engineer and after getting approval for same.

35.9 That after completion of the work the CONTRACTOR will remove and cart away all unwanted material, debris etc, at designated location as approved by the Employer at his own cost and leave the site clean and tidy.

35.10 That the CONTRACTOR will have to make his own arrangement to carry water at site at his own cost.

35.11 The CONTRACTOR shall make good all the bituminous / concrete roads if excavated for laying the DWC pipes and cables. The finish shall be made same as before excavation. In case the road made good by CONTRACTOR caves in or settles down than the rest of the road level or breaks down with seasonal changes then the CONTRACTOR shall make it good again right from ground preparation at no extra cost.

35.12 That all facilities for inspecting the works will be provided by the CONTRACTOR and damage in process of inspection will be made good by the CONTRACTOR.

35.13 That if any vehicle is engaged in the work, all rules and regulations issued in connection with Motor Vehicle Act will have to be followed.

- 35.14 That the work to be completed in all respect within stipulated time and no extension of time shall be recommended in normal condition. In special condition, time extension may be granted for valid reason as mentioned elsewhere in the Contract.
- 35.15 That the CONTRACTOR will have to arrange all necessary tool & plants required as per nature of work.
- 35.16 That the quarries for the stone materials of all types and size will be arranged by the CONTRACTOR and the Quality of the materials will be approved by GSCL.
- 35.17 If any defect is detected in defect liability period the CONTRACTOR have to rectify the same of his own cost failing which the repair work will be done by the Employer and cost involved will be deducted from performance security or the amount payable to the CONTRACTOR and necessary action will be taken against the CONTRACTOR.
- 35.18 That the CONTRACTOR will arrange for photography at site after completion of job at his/her/their own cost and the same will be submitted to the Employer along with the bill.

36.0 Compliance With Labour Regulations :

- 36.1 During continuance of the contract, the CONTRACTOR and his sub CONTRACTORs shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The CONTRACTOR shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-
- 36.2 Observance of the provisions stipulated in the notifications / bye laws/Acts/Rules/regulations including amendments, if any, on the part of the CONTRACTOR, the Engineer/Employer shall have the right to deduct any money due to the CONTRACTOR including his amount of performance security. The Employer/Engineer shall also have right to recover from the CONTRACTOR any sum required or estimated to be required for making good the loss or damage suffered by the Employer. The employees of the CONTRACTOR and the Sub-CONTRACTOR in no case shall be treated as the employees of the Employer at any point of time.

37.0 Salient Features Of Some Major Labour Laws Applicable To Establishments Engaged In Building And Other Construction Work

(The law as current on the date of bid opening will apply)

- 37.1 Workmen Compensation Act 1923: The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- 37.2 Payment of Gratuity Act 1972: Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more or on death the rate of 15 days wages for every

completed year of service. The Act is applicable to all establishments employing 10 or more employees.

- 37.3 Employees P.F. and Miscellaneous Provision Act 1952 (since amended): The Act Provides for monthly contributions by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are :
- (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement/death etc.
- 37.4 Maternity Benefit Act 1951: The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- 37.5 Contract Labour (Regulation & Abolition) Act 1970: The Act provides for certain welfare measures to be provided by the CONTRACTOR to contract labour and in case the CONTRACTOR fails to provide, the same are required to be provided, by the Principal Employer by Law. The Principal Employer is required to take Certificate of Registration and the CONTRACTOR is required to take license from the designated Officer. The Act is applicable to the establishments or CONTRACTOR of Principal Employer if they employ 20 or more contract labour.
- 37.6 Minimum Wages Act 1948: The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, and Runways are scheduled employments.
- 37.7 Payment of Wages Act 1936: It lies down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- 37.8 Equal Remuneration Act 1979: The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
- 37.9 Payment of Bonus Act 1965: The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs.3500/-per month or less. The bonus to be paid to employees getting Rs.2500/- per month or above up to Rs.3500/- per month shall be worked out by taking wages as Rs.2500/-per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.
- 37.10 Industrial Disputes Act 1947: The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- 37.11 Industrial Employment (Standing Orders) Act 1946: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying

down rules governing the conditions of employment by the Employer on matters provided in the Act and gets the same certified by the designated Authority.

- 37.12 Trade Unions Act 1926: The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
- 37.13 Child Labour (Prohibition & Regulation) Act 1986: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.
- 37.14 Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home up to the establishment and back, etc.
- 37.15 The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996: All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
- 37.16 Factories Act 1948: The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

38.0 Safety & Welfare Provisions for labour to be employed by the CONTRACTOR

All necessary personal safety equipment as considered adequate by the Engineer shall be available for use of persons employed on the Site and maintained in a condition suitable for immediate use; and the CONTRACTOR shall take adequate steps to ensure proper use of such equipment by those concerned.

Safety Provisions:

- 38.1 The CONTRACTOR shall comply with all the precautions as required for the safety of the workmen.
- 38.2 All workmen at site shall be provided with safety helmets and yellow/orange jackets.

- 38.3 Workmen required on site during night hours shall be provided with fluorescent yellow jackets with reflective lopes.
- 38.4 Workers employed on mixing asphaltic materials, cement, lime mortars, concrete etc. shall be provided with protective footwear, protective goggles.
- 38.5 Those engaged in handling any material, which is injurious to the eyes, shall be provided with protective goggles protective goggles.
- 38.6 Those engaged in welding works shall be provided with welder's protective eye shield.
- 38.7 Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- 38.8 Suitable scaffolds shall be provided for workmen for all work that cannot safely be done from the ground, or from solid construction except for such short period work as can be done safely from ladders. When a ladder is used, an extra labourer shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable foot-holds and hand-holds shall be provided on the ladder, which shall be given an inclination not steeper than 1/4 to 1.
- 38.9 Scaffolding or staging more than 3.25 metres above the ground or floor, swung or suspended from an overhead support or erected with stationary support, shall have a guard rail properly attached, bolted, braced and otherwise secured at least 1 metre 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 openings 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 support or structure.
- 38.10 Working platforms, gangways, and stairways shall be so constructed that they do not sag unduly or unequally, and if the height of any platform or gangway or stairway is more than 3.25 metres above ground level or floor level, it shall have closely spaced boards, have adequate width and be suitably provided with guard rails as described in above.
- 38.11 Every opening in the floor of a structure or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of one metre.
- 38.12 Safe means of access and egress shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 metres in length. The width between side rails in a rung ladder shall in no case be less than 30 cm for ladders up to and including 3 metres in length. For longer ladders the width shall be increased at least 6 mm for each additional 30 cm of length. Spacing of steps shall be uniform and shall not exceed 30 cm.
- 38.13 Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites 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 accidents and shall be bound to bear the expenses of defending every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs 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 compromise any claim by any such person.

- 38.14 Excavation and Trenching: All trenches, 1.5 metres or more in depth shall at all times be supplied with at least one ladder for each 20 metres in length or fraction thereof. Ladders shall be extended from the bottom of the trench to at least 1 metre above the surface of the ground. The sides of a trench, which is 1.5 metres or more in depth shall be stepped back to provide a suitable slope, or be securely held by timber bracing so as to avoid the danger of side collapse. Excavated material shall not be placed within 1.5 metres of the edge of any trench or half the depth of the trench, whichever is more. Excavation shall be made from the top to the bottom. Under no circumstances shall undermining or undercutting be done.
- 38.15 When workers are employed in sewers and manholes, which are in use, the CONTRACTOR shall ensure that manhole covers are open and manholes are ventilated at least for an hour before workers are allowed to go into them. Manholes so open shall be cordoned off with suitable railing and provide warning signals or boards to prevent accidents to the public.
- 38.16 Demolition: Before any demolition work is commenced and also during the process of the work:
- 38.17 All roads and open areas adjacent to the work site shall either be closed or suitably protected.
- 38.18 No electric cable or apparatus, which is liable to be a source of danger other than a cable or apparatus used by operators, shall remain electrically charged:
- 38.19 All practical steps shall be taken to prevent danger to persons employed by the Employer, from risk of fire or explosion, or flooding. No floor, roof or other part of a building shall be so overloaded with debris or materials as to render it unsafe.
- 38.20 When work is performed near any place where there is risk of drowning all necessary equipment shall be provided and kept ready for use and all necessary steps taken for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
- 38.21 Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following:
- (a) These shall be of good mechanical construction, sound material and adequate strength and free from patent defects and shall be kept in good working order be regularly inspected and properly maintained.
 - (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 defects.
 - (c) For every hoisting machine and every chain hook, shackle, swivel and pulley block used in hoisting, lowering or as means of suspension, safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with safe working load. In case of a hoisting machine or a variable safe working load, each safe working load and conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to in the paragraph above shall be loaded beyond safe working load except for the purpose of testing
 - (d) Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards; hoisting appliances shall be provided with such means as will reduce the risk of

accident during descent of load to the minimum. Adequate precautions shall be taken to reduce to the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energised, insulating mats, working apparel such as gloves, sleeves and boots, as may be necessary, shall be provided. Workers shall not wear any rings, watches and carry keys or other material which are good conductors of electricity.

- (e) All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.
- (f) These safety provisions shall be brought to the notice of all concerned by displaying on a notice board at a prominent place at the work location. Persons responsible for ensuring compliance with the Safety Code shall be named therein by the CONTRACTOR.
- (g) To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the CONTRACTOR shall be open to inspection by the Engineer or his Representative.
- (h) Notwithstanding anything contained in condition above, the CONTRACTOR shall remain liable to comply with the provisions of all acts, rules, regulations and bylaws for the time being in force in India and applicable in this matter. The CONTRACTOR shall be responsible for observance, by his sub-CONTRACTORS, of the foregoing provisions.
- (i) The following road safety materials must be used during the time of execution/diversion of traffic.
 - (i) Traffic cone (385mm x 385mm base) x 722mm
 - (ii) Safety jackets for labours/officers
 - (iii) Safety helmets for labours/officers
 - (iv) Safety reflective gloves
 - (v) Pollution masks for labours & engineers
 - (vi) Hand hold search light
 - (vii) Led batons.
 - (viii) The display boards on development activities of the work shall be made as per relevant guidelines of Central / State / Local Authorities

39.0 Labour Welfare Provisions:

39.1 First Aid:

At every workplace, there shall be maintained in readily accessible place first aid appliances including an adequate supply of sterilised dressings and sterilised cotton wool as prescribed in the Factory Rules of the State in which the work is carried on. The appliances shall be kept in good order and, in large work places; they shall be placed under the charge of a responsible person who shall be readily available during working hours.

39.2 Accommodation for Labour:

The CONTRACTOR shall during the progress of the work provide, erect and maintain necessary temporary living accommodation and ancillary facilities for labour at his own expense to standards and scales approved by the Engineer.

39.3 Drinking Water:

- (a) In every workplace, there shall be provided and maintained at suitable places easily accessible to labour, a sufficient supply of cold water fit for drinking. Where drinking water is obtained from an intermittent public water supply each workplace shall be provided with storage tanks where drinking water shall be stored. Every water supply storage shall be at a distance of not less than 15 metres from any latrine, drain or other source of pollution. Where water has to be drawn from an existing well, which is within such proximity of any 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 proof and waterproof.
- (b) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done at least once a month.

39.4 Washing and Bathing Places:

Adequate washing and bathing places shall be provided separately for men and women. Such places shall be kept in clean and drained condition.

39.5 Scale of Accommodation in Latrines and Urinals:

- (a) There shall be provided within the precincts of every workplace, latrines and urinals in an accessible place, and the accommodation, separately for each for these, shall not be less than at the following scale:
- (b) No. of Seats
 - (i) Where number of persons does not exceed 50 2
 - (ii) Where number of persons exceed 50 but does not exceed 100 3
 - (iii) For additional persons per 100 or part thereof 3

In particular cases, the Engineer shall have the power to increase the requirement, wherever necessary.

39.6 Latrines and Urinals:

39.6.1 Except in workplaces provided with water-flushed latrines connected with a water borne sewage system, all latrines shall be provided with dry-earth system (receptacles) which shall be cleaned at least four times daily and at least twice during working hours and kept in a strictly sanitary condition. Receptacles shall be tarred inside and outside at least once a year.

39.6.2 If women are employed, separate latrines and urinals, screened from those for men and marked in the vernacular in conspicuous letters "For women only", shall be provided. Those for men shall be similarly marked "For men only". A poster showing the figure of a man and a woman shall also be exhibited at the entrance to latrines for each sex. There shall be adequate supply of water, close to latrines and urinals.

39.7 Construction of Latrines:

- 39.7.1 Inside walls shall be constructed of masonry or other non-absorbent material and shall be cement washed inside and outside at least once a year. The dates of cement washing shall be noted in a register maintained for the purpose and kept available for inspection. Latrines shall have at least a thatched roof.
- 39.8 Disposal of Excreta:
- 39.8.1 Unless otherwise arranged for by the local sanitary authority, arrangement for proper disposal of excreta by incineration at the workplace shall be made by means of a suitable incinerator approved by the local medical health and municipal or cantonment authorities. Alternatively, excreta may be disposed of by putting a layer of night soils at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn into manure).
- 39.8.2 The CONTRACTOR shall, at his own expense, carry out all instructions issued to him by the Engineer to effect proper disposal of soil and other conservancy work in respect of CONTRACTOR's work-purpose 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.
- 39.9 Provisions of shelters during rest:
- 39.9.1 At every workplace, there shall be provided, free of cost, four suitable sheds, two for meals and two others for rest, separately for use of men and women labour. The height of each shelter shall not be less than 3 metres from floor level to lowest part of roof. Sheds shall be kept clean and the space provided shall be on the basis of at least 0.5 sq.m. per head.
- 39.10 Crèches:
- 39.10.1 At a place where women are ordinarily employed, there shall be provided at least one hut for use of children under the age of 6 years belonging to such women. Huts shall not be constructed to a standard lower than that of thatched roof, mud floor and wall with wooden planks spread over mud floor and covered with matting. Huts shall be provided with suitable and sufficient openings, for light and ventilation. There shall be adequate provision of sweepers to keep the places clean. There shall be a maidservant in attendance.
- 39.10.2 Sanitary utensils shall be provided to the satisfaction of local medical, health a municipal or cantonment authorities. Use of huts shall be restricted to children, their attendants and mothers of children.
- 39.11 Canteen:
- 39.11.1 A cooked food canteen on a moderate scale shall be provided for the benefit of workers wherever it is considered necessary.
- 39.12 Anti-malarial precautions:
- 39.12.1 The CONTRACTOR shall, at his own expense, conform to all anti malarial instructions given to him by the Engineer, including filling up any borrow pits which may have been dug by him.
- 39.13 Awareness and Education of HIV/AIDS
- 39.13.1 The CONTRACTOR shall provide/carryout HIV/AIDS awareness and training programme to its labour and management, at least twice per year during the construction period.

39.14 Child Labour Prohibition

39.14.1 The CONTRACTOR shall not employ Child Labour for any works or in any manner under the Contract at any time. In the event that the CONTRACTOR uses child labour, the Employer shall terminate the Contract.

39.15 Amendments:

39.15.1 The Employer may, from time to time, add to, or amend these Rules and issue such directions as it may be considered necessary for the proper implementation of these Rules or for the purpose of removing any difficulty, which may arise in the administration thereof.

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 1 OF 15
<p>1.0 <u>SCOPE</u></p> <p>This document gives broad guidelines to be followed by the CONTRACTOR for ensuring safe working conditions in and around the site.</p> <p>2.0 <u>SAFETY ORGANISATION</u></p> <p>2.1) Each CONTRACTOR at site shall establish a Safety organization set up at site consisting of qualified safety officers, safety supervisors and stewards as per requirement. Safety officer who shall be responsible for administering safety functions like planning and implementing site inspections, audits, examination / testing, safety surveys, providing supervision, monitoring safe working conditions at all times for their workers. The Safety Officer shall have a degree or diploma in engineering, and diploma in Industrial Safety from recognised central/state government approved institute and also field experience of minimum 03 years in case of degree in engineering or minimum 05 years in case of diploma in engineering, in the relevant discipline. The safety officer shall also have the authority to stop / suspend the unsafe practices and works taken up in unsafe conditions.</p> <p>2.2) CONTRACTOR shall define the roles and responsibilities of all the personnel at different levels in the safety organization in the CONTRACTOR's Site Safety Plan.</p> <p>2.3) CONTRACTOR shall take active interest and participate in the development and operation of safety programs at site. His responsibility does not cease with establishment of Safety Group and approval of its various activities. He shall demonstrate his involvement by regular participation in safety meetings, review of safety records and taking corrective action where required, introduction of safety promoting bulletins, posters, suggestions and awards and by setting example by strictly observing safety rules. CONTRACTOR shall remove all waste material and debris from and around the work area and properly clean up the area at the end of each day before leaving the work site.</p> <p>2.4) CONTRACTOR shall take all necessary precautions not only for safe working of his own workmen but also deploy all precautions to ensure safety of structures, equipment and workmen of other agencies in and around his work site.</p>		
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		ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 2 OF 15

2.5) CONTRACTOR shall ensure that his workmen do not trespass into prohibited/restricted work areas.

2.6) EMPLOYER/CONSULTANT shall have the right to inspect at any time, all items of machinery, plant and equipments (owned, borrowed / sub-contracted, leased, rented) brought to site by the CONTRACTOR or his agents or workmen and to prohibit the use on the site of any item, which in the opinion of the EMPLOYER/CONSULTANT is or may be detrimental to the safety of the site. The exercise of such right or the omission to exercise it in any particular case shall not absolve the CONTRACTOR or his agents or workmen of their responsibility of adhering to the safe working practices.

2.7) CONTRACTOR shall execute the work in a manner causing the least possible interference with the business of the EMPLOYER/CONSULTANT, or with the work of any other CONTRACTOR who may be engaged on the premises and shall at all times co-operate with the other CONTRACTORS working at site.

2.8) CONTRACTOR shall obtain daily work permit from the EMPLOYER/CONSULTANT before start of any work at site. The work permits are issued to prevent the CONTRACTOR from working in unauthorised areas and shall be valid for specific area for a stipulated period.

2.9) CONTRACTOR shall ensure at all times that his workers do not lie down or sleep under or around any machine, equipment, vessel or vehicle in his work area at any time.

2.10 RESPONSIBILITIES OF THE CONTRACTOR'S SAFETY OFFICER

The duties of a safety officer shall be to advise and assist the CONTRACTOR's management in the fulfilment of its obligations, statutory or otherwise concerning prevention of personnel injuries and maintaining a safe working environment. These duties shall include the following namely:

- a) To advise the building workers in planning and organising measures necessary for effective control of personal injuries.
- b) To advise on safety aspects in a construction work and to carry out detailed safety studies of selected activities.
- c) To check and evaluate the effectiveness of action taken or proposed to be taken to prevent personal injuries.
- d) To advise purchasing and ensuring quality of personal protective equipment confirming to national standards.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 3 OF 15

- e) To carry out safety inspections of construction work in order to observe the physical conditions of work and the work practices and procedures followed by construction workers and to render advise on measures to be adopted for removing unsafe physical conditions and preventing unsafe actions by construction workers.
- f) To investigate the near misses, incidents and major accidents and submit the detail report to EMPLOYER/CONSULTANT.
- g) To promote the working of safety committees and to act as an advisor to such committees.
- h) To design and conduct, either independently or in collaboration with other agencies, suitable training and educational programmes for prevention of accidents to building workers.
- i) To frame operational control measures, safe rules and safe working practices in consultation with senior officials of the establishment.
- j) Supervise and guide safety precautions to be taken in construction work of the establishment.
- k) Ensure compliance to legal and contractual requirements affecting safety, health, and welfare of his workmen.
- l) Keeping up-do-date with recommended codes of practice and safety literature. Circulating information applicable to each level of employees.
- m) Fostering within the company an understanding that injury prevention and damage control are an integral part of business and operational efficiency.
- n) Attending job progress meetings where safety is a point on the agenda. Report on job safety performance.

3.0 Entry and Exit procedures:

- 3.1) CONTRACTOR must follow Entry / Exit to the project premises for all the project employee and materials will be from the designated entrance / exit point only.
- 3.2) CONTRACTOR must follow entry / exit systems through Photo ID card / bio-metric.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 4 OF 15

- 3.3) CONTRACTOR must follow Entry to the project premises with mandatory PPE's (safety helmet, shoe & reflective jackets).
- 3.4) The record of Entry / Exit of the personnel will be maintained by the security / time keeper at the gate by CONTRACTOR.
- 3.5) Vehicles of the CONTRACTORs must be parked only at the designated parking lots in the project premises.
- 3.6) General Safety awareness posters to be displayed at the entrance and exit gate points by CONTRACTOR.
- 3.7) CONTRACTOR must provide separate access for pedestrian/vehicles movement at the entry / exit Points.
- 3.8) ID cards should be displayed by all contract workmen at the entry / exit points.
- 3.9) CONTRACTOR must provide one full time ambulance and it must be parked near the Entry gate or at the First aid center manned by an experienced driver.
- 3.10) CONTRACTOR's Plant and Equipments will be screened at the gate before being deployed at site by Employer/Consultant.
- 3.11) Permission for Entry/Exit of CONTRACTOR's Plant and Equipments into project premises must be through Employer/Consultant.
- 3.12) The CONTRACTOR shall arrange to separate pedestrian and vehicular (including material handling equipment) traffic wherever possible and maintain the routes clear of obstruction. To ensure safety of users' clear painted demarcation is encouraged as a discipline to be enforced.

4.0 STACKING AND STORAGE PRACTICE

- 4.1) All construction materials should be stored in designated areas. The CONTRACTOR shall submit a detailed scheme of construction and other hazardous materials' storage, stacking, dispensing and disposal also considering the physical and chemical properties along with the statutory requirements.
- 4.2) The CONTRACTOR shall ensure stacked material is bonded on a stable and level footing capable of carrying the mass of the stack. Adequate clearances

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 5 OF 15

shall be provided between the sides of the stack and top to facilitate unimpeded access to service equipment like overhead wiring, cranes, forklifts and fire fighting equipment, and hoses. Circular items shall be sufficiently choked with wedges not with odd bits of materials. Free-standing stacks of gunny bags and sacks such as cement bags shall be stacked to prescribed safe-stack heights with layers formed for stable bonding, preventing slippage causing accidents. Stacking against walls shall not be permissible.

4.3) The CONTRACTOR shall maintain the premises and surrounding areas in clean and clear manner with safe access and egress.

5.0 STORAGE OF HAZARDOUS MATERIALS

5.1) CONTRACTOR shall store the Hazardous materials on solid bases. Solid bases shall include compacted earth, pallets, concrete or asphalt platforms or paving. Hazardous materials shall be stored, stacked and secured to prevent toppling, Spillage or other unintended dislodgement. Aisles and clearances shall be detailed as per requirement. Hazardous materials shall be stacked in such a manner that an observer standing in the aisle can read their labels and legend.

5.2) CONTRACTOR must provide each hazardous material contained be identified by a legible or legend as per governing statute, code or regulation. The label shall identify the item, quantity and appropriate warnings.

5.3) Hazardous materials which if brought in contact with each other could react or pose equal or greater hazard than either material stored alone shall be stored at a distance not lesser than twenty feet apart by CONTRACTOR.

5.4) CONTRACTOR shall display/post the Warnings and maintain it in a legible condition at all access points clearly defining the specific hazardous nature of the stored materials such as 'Explosive', 'Compressed Gas' , 'Flammable', 'Oxidising', 'Corrosive' or other hazardous nature.

5.5) Where hazardous materials are unloaded in the CONTRACTOR's storage maintained at site in a semi-permanent installation, such installations shall be approved by relevant statutory bodies. Copies of licences for storage shall be lodged with the EMPLOYER. The containers and storage shall display quantities stored with name of the hazardous material and the UN hazard classification label in prescribed colour code prominently painted in a conspicuous manner.

5.6) The CONTRACTOR shall inspect the hazardous storages and installations on a daily basis and shall undertake any requisite preventive action necessary to avoid safety risks.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 6 OF 15

6.0 STORAGE OF FLAMMABLE AND EXPLOSIVE MATERIALS

- 6.1) CONTRACTOR shall secure flammable and or explosive materials against accidental ignition.
- 6.2) CONTRACTOR storage facilities for flammable liquids such as petrol, diesel, kerosene and lubricants as well as the quantities stored shall meet the legal and statutory requirements. These shall be stored in approved fire-resistant rooms with a sump of sufficient volume to contain any spillage.
- 6.3) CONTRACTOR shall provide the electrical fittings with flame proof and follow a strict maintenance schedule. Containers shall be appropriately bonded in receptacles into which low flash point fuel is decanted.

7.0 COMPRESSED GAS CYLINDERS

CONTRACTOR should store the compressed gas cylinders and secure it in the upright position at safe distances shielded from welding and cutting operations/hot work. Compressed gas cylinders in storage shall be shut off and torches, hose and manifolds removed and capped. Cylinders shall be periodically checked for leakages, if any. Compressed gas storages shall be provided with safety relief valves, Safety valves and rupture disc to protect them from overpressures.

8.0 VEHICLES/MACHINERY MOVEMENT IN PROJECT PREMISES

- 8.1) CONTRACTOR vehicles shall have valid registration , insurance, PUC, and road permit in conformance with regulations and always keep copies of valid travelling documents in the vehicle (Driving license, registration, insurance, and identity card and contact details).
- 8.2) CONTRACTOR vehicles (Four Wheelers) shall be equipped with seat belts both in front and rear seats, first aid box, portable fire extinguisher, standard stopper (wheel choke), emergency reflective triangles, etc. The drivers should be trained to use fire extinguishers.
- 8.3) CONTRACTOR vehicles operating on site shall be fitted with reverse horn, rear view mirror and driver shall always be accompanied by trained co-driver / helper.
- 8.4) CONTRACTOR vehicles shall be well maintained and kept in perfect working order and fully equipped with the proper safety gear. Conduct regular checks of the vehicle’s condition and report defects immediately. Any defect has to be

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 7 OF 15

removed as soon as practicable, before the vehicle is put in use. Toeing of vehicle with the help of Hydra or back push from other vehicle is strictly prohibited on site.

- 8.5) CONTRACTOR shall have driver/operator medical fitness report as per regulation; at least once a year and copy of medical report shall be available with driver/operator.
- 8.6) CONTRACTOR drivers shall have an experience of minimum 5 years and age should be between 25 and 58 years (holding Heavy vehicle license).
- 8.7) All employees including CONTRACTOR shall wear crash helmet and shoes while driving motorbike. Safety helmets provided for project / site work shall not be worn as crashed helmets, as they are not adequate to withstand the impact caused during accident of vehicle (two-wheeler). Two wheel drivers shall use adequate crash helmets of approved ISI mark.
- 8.8) Any new CONTRACTOR driver before starting driving shall attend authorized training program for safe driving as per regulation.
- 8.9) CONTRACTOR drivers shall have his journey schedule showing expected date and time to complete the journey.
- 8.10) CONTRACTOR drivers shall ensure to take minimum 15 minutes rest for every 4 hrs of continuous journey. Also shall not drive more than 12 hrs in a day.
- 8.11) CONTRACTOR drivers shall operate only those vehicles for which they are trained, authorized and licensed.
- 8.12) Without proper authorization by EMPLOYER/CONSULTANT CONTRACTOR respective drivers/operators shall not operate any vehicle other than they are authorized to operate, even if they are capable of such operation.
- 8.13) CONTRACTOR shall ensure that the person in the driver's seat as well as others in the vehicle shall keep seat belts fastened, while the vehicle is in motion.
- 8.14) CONTRACTOR shall specify and safe speed limits to be observed and maintained at all times.
- 8.15) CONTRACTOR must specify vehicle operating instructions.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 8 OF 15

- 8.16) CONTRACTOR must ensure safe driving during bad weather conditions (rain showers, winds, snow, etc.) with utmost care.
- 8.17) CONTRACTOR must ensure that, mobile phones are not to be used whilst driving or operating a vehicle.
- 8.18) CONTRACTOR must display that Driving under the influence of alcohol or any sedative drug (including prescribed medication) is strictly prohibited.
- 8.19) CONTRACTOR shall ensure that eating, drinking (even non-alcoholic beverages), etc. during driving inside the project premises be avoided. Such activities increase the risk of accident due to distraction and lack of concentration.
- 8.20) When loading and unloading, the CONTRACTOR shall observe relevant guidelines and requirements to avoid danger to any person or damage to any property.
- 8.21) Drivers/Operators shall not attend to mobile calls/listen to music while driving the vehicles/machinery.

9.0 Excavation

- 9.1) As built drawings of underground services must be referred by the CONTRACTOR before starting the excavation activity.
- 9.2) CONTRACTOR should make detail excavation methodology and submit the Methodology for approval to EMPLOYER/CONSULTANT.
- 9.3) CONTRACTOR must ensure the stability of structure adjoining the workplace or other areas to be excavated by providing safety measures like Sheet piling, shoring or other similar means to support structure.
- 9.4) CONTRACTOR should provide a safe access by providing ladders, staircase or ramps.
- 9.5) CONTRACTOR should ensure at a construction site that any machinery used in excavation is positioned and operated in such a way that such machinery does not endanger the operator of such machinery.
- 9.6) In the event of an excavation or removing a manhole cover, the CONTRACTOR should ensure that any opening, sump or pit caused is securely fenced and covered before leaving the workplace for the day.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 9 OF 15

9.7) Hard barricading should be provided around excavation area by CONTRACTOR.

9.8) Excavated earth must be placed 2m away from the excavated area and Suitable warning boards and signs should be put up by CONTRACTOR near excavation work area.

10.0 Scaffolds

10.1) Before erecting scaffold at site, CONTRACTOR has to get approved the scaffold design/drawings from EMPLOYER / CONSULTANT.

10.2) Scaffold materials must be as per IS standard.

10.3) Competent person must be involved in scaffold erection.

10.4) CONTRACTOR must use Mandatory scaffold components Base plate, ladders, Steel platform (tied with the scaffold), mid rail, Hand rail, Toe board (150 MM), bracings while erecting the scaffold.

10.5) EMPLOYER/CONSULTANT will inspect the CONTRACTOR scaffolding whether erected scaffold is as per the approved design.

10.6) SCAFF tag must be followed (Red Tag- Unsafe/Not to use, Green Tag – Safe to use).

10.7) CONTRACTOR must ensure usage of mobile scaffold is strictly prohibited.

10.8) CONTRACTOR must provide the scaffold with proper fall protection system intact and display the suitable warning boards.

10.9) CONTRACTOR must ensure area to be barricaded during erection and dismantling of scaffolds.

11.0 WORKING AT HEIGHTS

11.1) CONTRACTOR workmen engaged must undergo medical fitness examination before deploying them for work at heights.

11.2) CONTRACTOR workers should wear safety full body harness with double lanyard with hook properly fastened.

11.3) CONTRACTOR workmen engaged on work at heights should be experienced in such work.

ISSUE

R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 10 OF 15

- 11.4) Steel scaffold staging should be erected as per IS code and the design for Scaffold staging must be submitted to EMPLOYER/CONSULTANT for approval.
- 11.5) Wherever multiple work activities CONTRACTOR must use safety nets beneath the place of work for safety.
- 11.6) CONTRACTOR when working over equipments or tanks, Full body safety harness with double lanyard, safety lifeline and safety nets should always be used whether or not staging and scaffolding is provided.
- 11.7) Safe access to all points of works should be provided in the form of Suitable Ladders /stairways/ boom lifts by CONTRACTOR.
- 11.8) Area around the work place should be barricaded suitably or fenced off to avoid Injuries to personnel passing by. Suitable warning boards and sign should be put up by CONTRACTOR.
- 11.9) Life line and fall protection arrangements should be provided for working at heights by CONTRACTOR
- 11.10) CONTRACTOR must ensure loose materials should be cleared on daily basis from scaffolds.
- 11.11) Man-basket not permitted for height works.

12 Hot Work (Welding / Gas cutting work)

- 12.1) Only qualified welders should be employed at the work site. The CONTRACTOR should organise the qualifying test at site for his welders and the EMPLOYER / CONSULTANT should approve the welders. All welders should have to undergo qualifying test and only on passing the test, they should be allowed to work at site.
- 12.2) CONTRACTOR must organise for all welding work at site, Rectifier / Thyristor sets instead of AC transformer sets. AC transformer sets are banned for welding jobs (both open and closed top type).
- 12.3) CONTRACTOR should get his welding sets certified by the EMPLOYER/CONSULTANT before start of the work. These certificates should have to be renewed every month. A copy of the certificates should be displayed on respective welding sets.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 11 OF 15

- 12.4) Only cables in good condition and insulated holders should be used. The length of supply cable to welding site should not exceed 8 metres and the welding set body should be properly earthed.
- 12.5) CONTRACTOR welder should not use a building structure, pipeline or railway track etc. as a return path of the current. Adequately rated circuit breaker should be provided in the power circuit for human protection on all power supply points.
- 12.6) Before starting any Hot work like Gas cutting, welding and grinding etc., the CONTRACTOR should obtain hot work permit from the EMPLOYER/CONSULTANT. The permit should be renewed on day-to-day basis.
- 12.7) CONTRACTOR should ensure purging of piping and equipment to make it totally safe before carrying out any hot work.
- 12.8) No combustible material should be stored on or near any source of heat like hot pipes, welding or gas. Before leaving the place of work or the CONTRACTOR's sheds, the CONTRACTOR's workmen should ensure that no material or item that could start a fire is left at site. Special attention should be paid to collection and disposal of oil soaked cotton waste or rags. On no account are these to be dropped into corners, pushed below equipment or left hanging on pipes.
- 12.9) CONTRACTOR must use gas cylinders in a safe manner. These should not be dropped from heights or dragged on the floor. Trolley with rubber rimmed wheels should be used for transporting gas cylinders within the site. All cylinders should be kept in upright position. Oxygen cylinders should not be kept near inflammable materials like oil etc.
- 12.10) Standard colour codes for the cylinder must be followed (Oxygen-Black, Acetylene-Maroon) by CONTRACTOR.
- 12.11) CONTRACTOR must provide the gas cutting sets with flash back arrestor at both ends (Cylinder and Torch) and gas cutting rubber tube ends fixed with the clamps.
- 12.12) CONTRACTOR must provide the fire blankets for fire protection and not tarpaulins in the vicinity of welding and gas cutting jobs.
- 12.13) CONTRACTOR must provide charged fire extinguisher of DCP / CO2 type with each welding/gas cutting set.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 12 OF 15

12.14) LPG shall not be used for cutting / heat treatment purpose (strictly prohibited).

13 ERECTION, LIFTING APPLIANCE AND GEAR

13.1) CONTRACTOR shall submit detail erection methodology and shall get the same approved by EMPLOYER / CONSULTANT.

13.2) CONTRACTOR shall mobilize the lifting appliance and gear in good working condition.

13.3) CONTRACTOR shall submit a valid Test Certificate to the EMPLOYER / CONSULTANT, from approved certifying authorities for all of his lifting gear and hoists, slings, chains, wire ropes, hooks, chain-pulley blocks, winches, hoists and cranes etc. before commencing work.

13.4) These third party test shall be carried out at site by the CONTRACTOR

13.5) These certificates shall be available at site in the CONTRACTOR office for inspection as and when required.

13.6) Full time mechanic shall be deployed to maintain all the lifting appliance and gear at site.

14 CLEANLINESS

CONTRACTOR must ensure cleanliness as an integral part of plant / project site outlook; the main obstacle to cleanliness in concrete batching plants, hot mix plants, grout mix plants, crushing plants, mine works, is the emission of fugitive dust. This must be fought by special care taken of the following:

- a) Material unloading & handling systems
- b) Equipments and workshops
- c) Unloading / Storage / handling of the materials
- d) Road systems.

It must be emphasized that the proper design and sizing of dust removal / extraction equipments is of utmost importance to ensure cleanliness; adequate & special care while designing & selection of machinery to be taken in the following dust prone areas:

- a) Cement Bag packing area.
- b) Cement Truck loading area.

ISSUE

R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 13 OF 15

- c) Adequate sizing of all dust preventing, dust collecting and dust suppression / recovery devices.
- d) Proper design, positioning, use and maintenance of dust control equipment.
- e) Proper design, positioning and maintenance of storage bins like silos, bunkers, screw conveyors etc.

15 MATERIAL HANDLING SYSTEMS

CONTRACTOR shall have Material handling systems such as loading and unloading areas, conveyor belts and transfer points used to handle materials as raw meal, additives, solid fuels, clinker, and cement, these be equipped with dust removal devices. While designing the conveyor systems CONTRACTOR must take special care to minimize transfer points & provide dust suppression to control fugitive emission.

16 EQUIPMENT AND WORKSHOP

CONTRACTOR shall ensure that all dusty work areas such as cement bagging, truck/wagon loading, mixing or weigh hopper landing must be properly ventilated and filtered adequate care of dust suppression to be taken while designing.

Also important to allow for cleaning away dust produced by various types of equipment if they breakdown or are taken apart. This capacity of cleaning must be included in equipment design and selection criteria. It must also be accounted for when designing work-areas.

17 STORAGE OF FINE MATERIALS

CONTRACTOR should ensure that fine materials stored in silos, must be equipped with adequate dust filtering equipment. Storage of fine materials in the open air or open buildings is only accepted at exceptional locations. These storage zones must be protected from the dominant winds either by strategic positioning or through artificial protection (walls, barns). Areas where fine materials are stored in the open must be equipped or designed in such a way that potential runoff from rain/storm water does not contaminate the environment; this means that runoff waters must be collected and settled before release to off-site receiving bodies.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 14 OF 15

18 SCRAP AND REFUSE BINS-REMOVAL SYSTEM

The CONTRACTOR shall ensure that he has sufficient waste bins that are identified for different wastes and maintained in clearly demarcated areas. Wastes with oily or other ignitable materials such as oily cotton wastes and hand gloves shall be stored separately with covers to prevent fires and shall be made of metal. Different wastes shall be segregated and stored separately and disposed off. These shall be emptied at routine intervals to prevent that they do not overflow with wastes.

18.1) Solid Waste Management

The CONTRACTOR shall ensure that he has sufficient waste collection bins categorised as hazardous and non-hazardous waste with specific names. Non-hazardous waste shall be disposed in environment friendly manner. CONTRACTOR shall maintain adequate records of hazardous waste disposed.

The waste collection bins should be covered properly.

18.2) Vehicle Wash bay

The CONTRACTOR shall establish a wash bay near each entrance to the project site. All trucks/vehicles moving outside the site shall have the tyres washed prior to the site leaving the project site. This is to ensure that the roads outside the site are not dirtied / defaced by construction muck. The wash bays shall have submersible pump (1+1 backup) and a hose jet along with recyclable water for washing tyres. Dedicated workers would be manning the wash back at each time. Dump trucks to have lift covers on top to prevent muck/dirt/smell from flowing across roads.

18.3) Sedimentation tank

The CONTRACTOR shall establish that the trade effluent generated as a result of maintenance of concrete batch mixing plant / grout mix plant or washing any residuals of tests conducted on concrete, be properly routed to a designed and approved sedimentation tank. The CONTRACTOR shall also periodically monitor and ensure the compliance to acceptable limits of the vital parameters of the treated water like pH, oil and chemical contents, BOD, COD, TDS, Turbidity etc or as prescribed under the conditions of consent to operate the plant before discharging.

ISSUE R3

SPEC.NO TCE.M4-917	TATA CONSULTING ENGINEERS LIMITED	SECTION: WRITE-UP
	Safety Conditions for undertaking site work	SHEET 15 OF 15

19 PROTECTION OF WATER

Both surface water and underground water resources must be protected from all possible pollution be it chronic or accidental.

20 NOISE REDUCTION

CONTRACTOR must ensure noise does not represent a nuisance to neighbours, all measures must be taken to reduce emission of noise from equipment (crushers and/or grinders must be enclosed, as well as compressors, diesel generators; care must be taken in selection of low-noise blowers). Noise reducing devices / acoustical enclosures must be installed systematically on the noisiest equipment. CONTRACTOR must follow the statutory legislation for noise levels. Timely preventive and break-down maintenance of the equipment and machinery shall be carried out by CONTRACTOR in order to reduce the noise generation.

21 WASTE MINIMIZATION

CONTRACTOR must avoid or minimize production of waste with an objective to aim towards zero-waste. Production facility must be provided with all the necessary equipment to manage its wastes; storage, sorting, cleaning, pre-processing, and recycling. Temporary waste storage facilities should be designed in such a way as to control emissions to the atmosphere (volatile organics, fugitive dust) and to protect surface and underground water.

22 ASBESTOS

- 22.1) Use of asbestos under any form is strictly forbidden in all construction activities and facilities.
- 22.2) Only CONTRACTOR trained in removal of asbestos should be eligible for asbestos removal. All removal work should be managed and approved by the EMPLOYER / CONSULTANT.

ISSUE R3

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED Contractors Safety and Health programme	SECTION:WRITE-UP SHEET 1 OF 23
<p>1.0 <u>SAFETY ORGANISATION</u></p> <p>1.1 <u>SAFETY AND HEALTH POLICY</u></p> <p>The CONTRACTOR's organisation shall have a written SAFETY AND HEALTH POLICY issued by the Chief Executive of the organisation, appropriate to the scale and nature of the risks involved in the CONTRACT works. A copy of the policy shall be made available to the PURCHASER at the time of the award of the CONTRACT in evidence of the CONTRACTOR's commitment to management of employee's safety & health and compliance to statutory and regulatory requirements. The policy along with its component operation procedures shall be evidenced as working document publicised among the CONTRACTOR's and his SUB-CONTRACTORS' employees through appropriate languages. All the CONTRACTOR's employees shall be familiar with the policy and their role and obligations in its implementation. The policy shall meet the relevant statutory and regulatory requirements and other requirements of the PURCHASER/CONSULTANT. The policy shall periodically be reviewed for updating with respect to new and emerging legal and other requirements.</p> <p>1.2 <u>SITE SPECIFIC SAFETY PLAN</u></p> <p>The CONTRACTOR shall make detailed Site specific Safety Plan which should include the nature of work, time frame, work force involved, hazards and control measures and shall get the same approved by the Employer/consultant. Method statements shall be attached with Site Safety plan and the approved Safety Plan shall be displayed prominently in the Contractor's site office.</p> <p>1.3 <u>SAFETY OFFICER :</u></p> <p>1.3.1) <u>SAFETY OFFICERS QUALIFICATION:</u></p> <p>A person shall not be eligible for appointment as Safety officer unless he</p> <p>(i) Possesses a recognized Degree in any branch of Engineering or Technology and had practical experience of working in industrial projects in a supervisory capacity for a period of not less than 3 years or possesses a recognised Diploma in any branch of engineering or technology and has had practical experience of working in industrial projects in a supervisory capacity for a period of not less than 5 year.</p>		
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		<p>ISSUE</p> <p>R2</p>

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 2 OF 23

(ii) Possesses a recognised degree or Advanced diploma in industrial safety. (Approved by the EMPLOYER/CONSULTANT on the basis of his adequate Safety qualification [Advanced Diploma in Industrial Safety approved by State Board of Technical Education] and his/ her experience in safety field).

(iii) Has adequate knowledge of the language spoken by majority of construction workers from the construction site in which he is deployed.

1.3.2) The CONTRACTOR shall also nominate in writing competent Safety Appointees from various disciplines to assist the Safety Officer in implementation of safety measures in their routine contract works. The Safety Officer shall have sufficient authority to direct the CONTRACTOR's or his SUB-CONTRACTOR's personnel to meet Safety and Health requirements and to stop performance of work until such requirements are met.

1.4 EMPLOYEE CONSULTATIONS,SAFETY COMMITTEE&COMMUNICATION

1.4.1) The CONTRACTOR shall ensure full involvement of all his employees recognising their right to consultation on Safety, Health and Environment matters. The Safety officer shall be responsible for ensuring employees' involvement through routine Safety inspections, Hazard and Risk assessment in new and any changes in the work and their control. The CONTRACTOR shall maintain appropriate operating procedures to guide these requirements. The contractor shall plan, maintain and implement for entire Project duration, Training / matrix for regular SHE induction, job specific and specialized training programmes for all working levels.

1.4.2) The CONTRACTOR shall also appoint a Safety Committee comprising of the Safety Appointees from the various areas under the chairmanship of the Safety officer. Safety Officer shall report to Authority one level above the Contractor's Project In-charge. The committee should also include representatives of Sub-contractors. The committee shall meet minimum once in month to discuss the status and adequacy of the safety management, and any safety concerns of the employees. The committee shall also formulate and validate the safety procedures incorporating controls to prevent or mitigate hazards and risks before submission for approval by the EMPLOYER/CONSULTANT. Safety Officer shall maintain the records of the meetings and minutes of the Safety Committee meeting shall be submitted to the Employer/CONSULTANT.

1.4.3) The CONTRACTOR shall communicate to the employees regularly on job hazards applicable to their tasks in hand and hazards present on Project site. The Safety Appointees shall hold 'Toolbox Talks' or pep talks for this purpose on a routine basis before undertaking any safety critical and/or non-routine activities. Weekly meetings of the CONTRACTOR and his SUB-

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 3 OF 23

CONTRACTORS attended by the Safety Officer and the Safety Appointee shall include safety as a key item in the agenda to discuss hazards and risk assessments, job safety analysis and control procedures and to review accidents and incidents (Near-miss) for remedial measures to prevent reoccurrence. The minutes of the meeting shall be submitted to the EMPLOYER/CONSULTANT. The Safety Officer shall maintain the records.

1.5 Insurance, Statutory Requirements:

1.5.1) CONTRACTOR should obtain Contract Labour License from Inspector of labour/Inspector of factories as per Contract labour act 1970.

1.5.2) All the Contractor's workmen should be covered by Site Specific Workmen compensation insurance or Group Workmen compensation insurance with site name endorsed for the project duration (Workmen Compensation Act 1923) or should cover under ESI(If the project location is in ESI Zone).

1.5.3)All the Contractor's workmen should be covered under EPF (Employee Provident Fund Act 1952).

1.5.4) All CONTRACTORS should comply with local statutory requirement:

- (i) Building and other Construction workers Act, 1996.
- (ii) Environmental protection Act, 1986.
- (iii) Factories Act, 1948.
- (iv) Indian Electricity Act, 2003.
- (v) Indian Boilers Act, 1923.
- (vi) Petroleum Act, 2002.

1.5.5) CONTRACTOR shall obtain CAR Policy / ESIC policy for the entire project value / duration.

1.5.6) Other Statutory requirements:

- (i) Electrical Equipment's, Scaffold materials, Gas cylinders, mechanical equipment and machineries which are deployed at site are as per IS code.
- (ii) Storage of combustible materials inside the project premises must be as per the allowable limits mentioned in the Petroleum act/Gas cylinder storage act.
- (iii) PPE's must be as per IS standard.

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 4 OF 23

(iv) CONTRACTOR is accountable for any statutory violations observed by the enforcement/inspecting govt authorities.

(v) In case of accidents, inside the project premises, the accountability lies with the CONTRACTOR.

1.6 CONTRACTOR'S MONTHLY SAFETY REPORTS

1.6.1) CONTRACTOR shall submit a monthly written report to the EMPLOYER/CONSULTANT, which shall be due on the fifth workday of every month. The Safety and health of all full time, part-time, permanent, temporary, contract employees and any outsourced employee undertaking any part of the CONTRACT works shall be included in the safety report. The report shall include the total number of working hours for the month, the number of recordable accidents and the number of lost-time injury /accidents. A cumulative trend plot of the monthly severity and frequency rate of the reportable incidents/ accidents shall be included in the Monthly safety report.

1.6.2) CONTRACTOR shall arrange to display the safety statistics and the cumulative plot of severity and frequency of accidents mentioned above painted on a board prominently displayed, as a means of encouragement and assurance to all interested parties and for publicising the safety achievements.

1.7 CONTRACTOR'S ACCIDENT/INCIDENT REPORTS/PENALTY SYSTEM

1.7.1) CONTRACTOR shall report orally, to the EMPLOYER/CONSULTANT regardless of their extent, duration and severity, immediately on occurrence of all incidents/accidents resulting in:

- (a) Personal injury / Dangerous Occurrences
- (b) Property damage
- (c) Near misses

1.7.2) CONTRACTOR shall submit the accident / incident report in writing to the EMPLOYER/CONSULTANT within 24 hours of its happening in the form as prescribed by the governing statute or in the absence of which, in the form prescribed by the EMPLOYER/CONSULTANT. The CONTRACTOR shall detail in the 'Accident / Incident Report', the particulars of the dangerous occurrence leading to the accident, lost time of absence due to accident, root cause analysis and the corrective and preventive actions to prevent such recurrence. In addition, the CONTRACTOR shall include his estimate of the impact of accident on project schedule. Incident including near miss cases shall also be reported in the same manner identifying root cause(s) to eliminate such potential occurrence or risks. The CONTRACTOR shall ensure that corrective & preventive action is

ISSUE

R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 5 OF 23

taken so that recurrence of the accident / incidents at one location on site shall not take place at other locations/sites.

1.7.3) Penalty clauses applicable to contractor/ sub contractor against non-compliance of SHE norms, requirements, terms, clauses and instructions given by employer / consultant / applicable statutory laws & requirements.

1.8 FIRST-AID PERSONNEL AND FACILITIES

1.8.1) CONTRACTOR shall ensure first-aiders (person who is well trained and can administer first aid) are available on site. The Contractor shall ensure that adequate numbers of first-aid boxes and or first- aid stations as per statutory requirements. The persons holding current certificates of competency of recognised institutions in prescribed numbers as per any governing statute. First-aiders' names shall be prominently displayed.

1.8.2) The First-aid boxes shall display contents of medical and medicinal articles with quantity maintained, which shall be in accordance with governing statute. Nominated first-aiders shall replenish stock of first aid boxes promptly.

1.9 OCCUPATIONAL HEALTH CENTRE

1.9.1) CONTRACTOR should establish and maintain an Occupational Health Centre. (In case, Where the CONTRACTOR out-sources such facility, it shall meet the statutory requirements and shall be approved by the EMPLOYER /CONSULTANT and the statutory body).

1.9.2) Occupational Health Centre shall be served by a full time medical officer holding a medical degree in allopathic medicine with a minimum of five years experience in Occupational Health/Medicine. A male nurse, one dresser/compounder and one sweeper-cum-ward boy who will all be available during working hours.

1.9.3) Occupational Health Centre shall be capable of undertaking emergency care services or emergency treatment facilities which shall include emergency life saving aids and appliances to handle head and spinal injuries, severe fractures, snake bites, burns of all nature, electric shocks, cases of asphyxiation and such other severe injuries as could be reasonably anticipated at the facilities and shall meet provisions of any governing statute.

1.9.4) AMBULANCE ROOM AND AMBULANCE VANS: The CONTRACTOR shall arrange for an ambulance room and an ambulance van directly or outsource the facilities meeting the governing statutory needs for prompt transportation of

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 6 OF 23

serious cases of accident and or sickness to the hospital. Such facilities shall be maintained in good repair and equipped with facilities such as dry powder type extinguishers, flashlights, portable oxygen unit, self-contained breathing apparatus etc. as prescribed by the governing statute. Ambulance van shall be available round the clock.

1.10 INDUCTION AND JOB-SAFETY TRAINING

1.10.1) The CONTRACTOR shall maintain a procedure for identification of the training needs and training his employees to create a Safety and Health conscious work-force that will comply with the law and safety requirements of the organisation. He shall also maintain a procedure for safety induction and initial training as well as follow-up training on the job safety for new entrants. All employees shall receive effective training and periodic refresher training on the operation control procedures specific to their tasks designed to control the job-safety risks. A booklet of such operation control procedures and safety rules with need based pictorial illustrations shall be made available to all employees who are to learn and be familiar with such procedures. All training shall be monitored for effectiveness as per established procedures. The CONTRACTOR shall maintain records of all such training.

The induction program shall include the following:

- i) Site Safety and Health policy
- ii) Site entry and access.
- iii) Standard conditions of work in the site.
- iv) Site layout and arrangements such as rest rooms, storage and facilities.
- v) Emergency response procedures and escape routes.
- vi) Incident and near miss reporting.
- vii) Medical and welfare facilities.
- viii) Details of Work permit.

1.10.2) The safety officer shall conduct regular fortnightly or monthly mock-safety drills for different imaginary accident scenarios, in premeditated work areas to provide on-job training such as:

- i) Use of safety appliances such as water monitors, fire hydrants, fire hydrant pumps, fire-hoses, extinguishers, breathing apparatus and safety harness for working at height,
- ii) Response to health and safety emergencies,
- iii) Fighting fires using various equipment and
- iv) First-aid

1.10.3) Participants shall receive training during mock-drills through role-play of their normal expected tasks during emergencies and fire fighting. The degree of

ISSUE
R2

demonstrated ability in the chosen tasks during such safety drills shall be recorded as participants' competence level for planning his further training.

1.10.4) The Safety officer shall be trained on a standardised comprehensive advanced training programme covering safety management, legal aspects, techniques of Hazard identification and Risk assessment and specific Job-safety in various disciplines such as Civil, Electrical, Instrumentation and Mechanical plant and equipment of the CONTRACTOR. The training records shall be maintained subject to audit by the EMPLOYER/CONSULTANT. Training effectiveness shall be assessed and recorded and used as input for further training plans of the employee.

1.11 SAFETY PROMOTION

Safety Posters, Banners and Slogans displayed for safety promotion shall be rotated at frequent intervals at the site locations. The CONTRACTOR is encouraged to have safety promotion as an item in the Safety Committee agenda. The CONTRACTOR is encouraged to include safety promotion programmes such as: safety competitions in slogan and poetry writing on safety, screening of safety films, celebration of National safety and Environmental day, safety suggestion schemes and safety library etc.

1.12 PURCHASE AND PROCUREMENT CONTROL

1.12.1) CONTRACTOR shall maintain a procedure for control of his purchases to ensure that all safety requirements are appropriately vetted by the safety personnel during all stages of procurement including planning of specifications, inspection for acceptance and commissioning in order that threats to safety are not overlooked and appropriate attention is paid to the training of personnel in the operation of the Contractor's new or changed machinery and their Operation & control procedures, to prevent/control risks.

1.12.2) CONTRACTOR shall exercise due diligence in appointing his SUB-CONTRACTORS and outsourcing contract services, that no new safety or Health threats are created. The CONTRACTOR shall ensure personnel of SUB-CONTRACTORS and outsourced contract services are competent in Safety, Health and Environmental management to meet the POLICY requirements. They shall be made aware of the safety rules, emergency procedures and any information that will have a bearing on the safety, health and related contractual obligations.

1.13 HAZARD IDENTIFICATION AND RISK ASSESSMENT (HIRA)

ISSUE

R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 8 OF 23

1.13.1) CONTRACTOR shall ensure that his key personnel and safety personnel are trained to be competent in Hazard identification, Risk assessment and risk control processes. The CONTRACTOR shall on a routine basis identify, evaluate and control all safety & health risks especially in the hazardous work activities and also to validate the previous risk assessments. Elements such as hazard identification, evaluation of risks with existing control measures in place and estimate of tolerability of the residual risks shall be an ongoing process. Any additional/new control measures shall be designed based on this process on need basis.

1.13.2) CONTRACTOR shall maintain a Hazard Identification, Risk Analysis and Control Manual (HIRAC) pertaining to all his activities duly updated as detailed above. The HIRAC for activities shall be made available to the EMPLOYER/CONSULTANT during regular inspections and audits.

1.14 WORK PERMITS

The CONTRACTOR shall maintain a work permit procedure. Essential features of the work permit system are as follows:

1.14.1) Clear identification of who may authorize particular jobs and who is responsible for specifying the necessary safety precautions.

1.14.2) Communication of instructions on the issue and use of permits.

1.14.3) Monitoring and auditing to ensure that the system works as intended.

1.14.4) The types of jobs requiring the control of a work permit are:

- (i) Hot work of any type (e.g. Hot metal riveting, gas cutting, brazing, grinding, gouging, gas and electric welding) and Work which may cause uncontrolled hydrocarbon release, including any disconnection or opening of a closed pipeline, vessel or equipment containing flammable material.
- (ii) Work at height above 1.2m / 4ft or those works at unprotected elevations that demands fall protection to prevent from falling or involving danger of dropped objects.
- (iii) Work involving electrical isolation or work on live electrical systems and equipment.
- (iv) Work involving the use of dangerous substance (Radioactive materials).
- (v) Demolitions and Excavations.
- (vi) Pressure testing.
- (vii) Maintenance operations.
- (viii) Entry into confined spaces.

The work permit issued under the procedure shall be valid for a specified period and shall be issued only after all safety precautions are fulfilled and duly

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 9 OF 23

verified by the concerned department engineer and safety officer (EMPLOYER/CONSULTANT).If deemed necessary the same work permit sheet may be revalidated to extent beyond the specified period provided the site conditions and the persons on job remain the same.

1.15 Job Safety Inspection:

1.15.1) Employer/Consultant will conduct planned inspections of the contractors work area and activities. The inspections will verify the contractor`s safety records. The Contractor safety inspection will cover the safe behaviour of contractor employees, safe work condition of equipment in use and the safety and housekeeping of area where work is carried out.

1.15.2) Contractor also shall maintain a procedure for safety inspection at routine intervals to provide assurance that the instituted safety procedures are in place to prevent deviations from established standards that could lead to a safety hazard and consequential risk. The Contractor shall establish appropriate standardised checklist for systematic job safety verification to ensure

- i) Set standard are followed without deviation.
- ii) Employees are competent to perform as prescribed operational control procedure.
- iii) Monitoring of safety of the various work areas/tasks.
- iv) Adequacy of existing operation reports and proposed remedial measures shall be submitted to the employers/Consultant.

1.16 Safety Audits

1.16.1) The Employer/Consultant shall retain their rights to audit the contractor`s safety management system either directly by their employees or his nominated representatives for its effectiveness.

1.16.2) The contractor shall undertake periodic safety audits to confirm through investigative methods the effectiveness of the measures set out in policy. In order to be effective such safety audit shall be comprehensively covering all aspects detailed in the specification to ensure effective loss-control/accident prevention programme. Safety audits shall take into account the safety inspection records, remedial measures and effectiveness of the safety programme shall be based on the contractor`s effective hazard identification and risk assessment processes for design of operational control procedures and on the safety statistics. Audit reports and preventive actions and safety improvement programmes shall be submitted to the Employer/Consultant.

ISSUE R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 10 OF 23

2.0 EQUIPMENT, SUBSTANCES AND PERSONAL SAFEGUARDING

2.1 MECHANICAL SAFETY

- 2.1.1) The CONTRACTOR shall ensure that all his equipments and machinery are safe to use while in motion or working. Operators shall have received training or instruction on operation of the machinery and the regulatory requirements. The CONTRACTOR shall have adequate procedure to ensure the stability and securing of his working machinery during operation. He shall restrict repair and maintenance of the machinery to trained personnel and maintain records of repairs and maintenance. The equipment shall have appropriately designed means of isolating from sources of energy and shall have emergency stop control, which is easily accessible. All controls shall be clearly and uniformly marked. All operation controls, interlocks, sensing devices and guards on tools and equipment shall be functional and their status shall be regularly checked and recorded. The CONTRACTOR shall provide evidence of compliance to these requirements in any contractual write-ups submitted to the EMPLOYER/CONSULTANT for approval in respect of critical construction/contract works.
- 2.1.2) The CONTRACTOR shall provide only good quality Hand tools and ensure control of condition, storage, routine inspection and use of such hand-tools. Unsafe tools such as with cracked or broken handles, mushroomed chisels and punches, worn screwdrivers, hardened hammer heads; power tools with unsafe resistance to earth or without safety guards shall be strictly prohibited.
- 2.1.3) All safety ladders, scaffolding and such access equipment shall meet requirements of IS 3696 and IS 4014:1967 and such standards as the EMPLOYER/CONSULTANT may stipulate. The safety work permits shall be issued only after ensuring that all safety requirements of access equipment are complied with. Access equipment shall be inspected on a routine basis to prevent injuries caused by falls. It shall be the responsibility of the Contractor to provide safe work access to all work places.
- 2.1.4) The CONTRACTOR shall ensure safety of all those concerned with lifting and those who may be affected by material hoisting, lifting and handling using various mechanical aids. All lifting equipment such as cranes, hoists, lifting tools and tackles, shackles, hooks chains and links shall be designed as per appropriate international codes of construction. Operators shall have been trained in operation and maintenance of such equipment besides training on standard hand signals to be employed during the hoisting and lifting operations. Safe Working Loads (SWL) shall be marked on equipment prominently. SWL shall be evidenced to have been established by test procedures in accordance with acceptable codes of practices. Medical Examination of Operator & Signaller is mandatory.

ISSUE

R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 11 OF 23

- 2.1.5) Riding on construction equipment, forklifts and cranes shall be prohibited unless such vehicles are provided with passenger seats.
- 2.1.6) Pressurized gas and air systems shall be maintained safe in good working order and shall meet the requirements of the Factories Act 1948, The Static and Mobile Pressure Vessels Rules 1984 and the Gas Cylinder Rules 1934 as applicable. The safety relief valves, safety appurtenances and isolation systems shall be compliant with safety code of practices. Any statutory register of pressure vessel records and the code of practices shall be subject to periodic auditing by the EMPLOYER/CONSULTANT. The CONTRACTOR shall ensure the pressurized gas and air systems are periodically tested by competent authority and records are maintained properly.
- 2.1.7) The areas of highly dangerous activities like hoisting, lifting and rock blasting, and radiation, shall be appropriately barricaded to protect personnel and machinery and guided by work permit discipline. Emergency plans shall cater to emergencies arising out of such activities.
- 2.1.8) Signs, barricades, barrier tapes and warning or entry restriction devices or accessories shall be provided to minimise work related risks of accidents and injuries. Signage shall meet all regulatory requirements such as under The Building and Other Construction Workers Act, 1996; Factory Act, 1948; Manufacture, Storage and Import of Hazardous Chemicals Rules under Environmental Protection Act 1986; Indian Explosives Act 1984 and Gas Cylinder Rules, 1981 and Indian Electricity Act, 1910 and Rules there of and any other safety requirements of the EMPLOYER/CONSULTANT.
- 2.1.9) CONTRACTOR shall follow the Environment Act 1986 and Rules framed there under. Devise and adopt appropriate noise control measure to maintain noise level at site reasonably below the acceptable statutory noise levels. Work area monitoring & Ambient Air monitoring for various parameters [i.e. Noise, Dust Water, SPM, SO₂, NO₂ etc.] to be checked through approved laboratory.

2.2 ELECTRICAL SAFETY

- 2.2.1) CONTRACTOR shall provide only such equipment for work that is electrically Safe to work. The CONTRACTOR shall have a procedure to identify and record all his electrical equipment in a register, with provisions to record his periodic inspections of such equipment. Inspection shall cover cables, extension leads, all electrical equipment drawing power from socket outlet. He shall identify and maintain in good working order all electrical installations such as distribution panels and major switchgear ensuring safe accessibility. A clear area shall be maintained around panels and switchgears. The installed equipment shall be periodically inspected by qualified personnel to ensure their continued safe operating condition. Inspection shall include earth polarity

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 12 OF 23

checks, continuity checks and earth resistance checks. The CONTRACTOR shall ensure use of flameproof and explosion proof switchgears and lighting fittings where required as per governing codes.

2.2.2) Approved earth leakage relays or alternative safety devices to relevant are and International codes shall be used on all portable electrical hand tools. Where possible low-voltage electric power supply shall be used for hand tools, earth leakage units shall protect electrical installations in workshops, kitchens, cafeterias, first-aid rooms, laboratories and offices. Record of regular checks shall be maintained. The CONTRACTOR shall comply with 'Code of Practice for Earthing as per IS: 3043.

2.2.3) Safety rubber matting of appropriate voltage rating conforming to IS 5424 entitled 'Rubber Mats for Electrical Purposes' shall be provided in front of all switchgears and power distribution panels for the safety of personnel operating such equipment.

2.2.4) CONTRACTOR shall arrange displaying signage under Indian Electricity Act 1910, such as:

(i) Danger notices as per IS 2551 in conspicuous places on all Low, Medium and High voltages as per Rule 35,

(ii) Instruction of restoration of persons suffering from electric shock in English and local languages as per Rule 44 in switchgear rooms, substations and places where electricity is used and

(iii) Notice prohibiting unauthorized entry in areas where electrical apparatus are used.

2.2.6) All power cables providing construction power to various construction machinery and the connectors shall be in safe and sound condition. Cables shall be routed through cable trays supported on appropriately designed structures, duly clamped, secured and identified. Road crossing cables shall be laid in conduits buried at least 600 mm below the surface to prevent damage due to vehicular traffic. All cables shall be off the floor to avoid damage or tripping hazard. Cables shall be terminated at the switchgear and sockets in a workman like manner to prevent loose contacts and flashover. Only safety receptacles shall be used for providing power connection to hand-tools. All switches and distribution boards shall be clearly marked. All electrical distribution and panel wiring diagrams shall be available with the electrical maintenance personnel. The CONTRACTOR shall maintain a safe electrical isolation/Lockout – Tagout (LOTO) procedure.

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 13 OF 23

2.2.7) The CONTRACTOR shall ensure lighting circuits are not used for hand-tools. No electrical equipment shall be overloaded. Tools and test equipment used on electrical systems shall be insulated.

2.3 SUBSTANCES ABUSE PROGRAMME

2.3.1) The CONTRACTOR is encouraged to have a 'Substance Abuse Programme'. Drinking during working hours shall be strictly prohibited. The CONTRACTOR shall promote through poster and other publicity, awareness on abuse of substances such as alcohol and such depressant drugs that slows the activity of brain and spinal cord on abusive usage endangering the safety and health of users and others affected by their work.

2.3.2) No tobacco in any form shall be allowed in EMPLOYER project premises.

2.4 HAZARDOUS SUBSTANCES CONTROL

2.4.1) CONTRACTOR shall prevent all injuries, illnesses and damage to property or the environment caused by any article or substance, which proves to be hazardous. The code of practices of construction and operation and maintenance and control procedures shall meet required statutory and regulatory requirements. Personnel shall be trained on use, handling, storage, disposal and emergency spillage procedures.

2.4.2) CONTRACTOR shall detail and deploy operational controls to reduce hazardous wastes and their disposal as required by the statute 'Hazardous Waste (Management and Handling) Rules 2000'. Oil wastes, used oils, soil and cotton soaked in oil consequent to handling operations, grease and many class of paints and asbestos sheets and gaskets are typical hazardous wastes.

2.4.3) CONTRACTOR shall identify, contain and control all sources of radiation. Appropriate regulatory approvals shall be obtained before commencement of work involving radiation sources. Radiation protection advisors suitably qualified and experienced shall be appointed whose names shall be submitted to EMPLOYER/CONSULTANT. Surveillance of personnel engaged in such work shall be maintained in accordance with regulatory requirements.

2.4.4) CONTRACTOR shall prominently display Material Safety Data Sheets (MSDS) of all chemical, and hazardous substance used, handled, stored on site, and should ensure that these MSDS are available for reference to all employees at all times and displayed at site (preferably in local language) understandable by the workmen / labour.

ISSUE R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 14 OF 23

3.0 **PERSONAL SAFGUARDING**

3.1) **PERSONAL PROTECTION EQUIPMENT (PPE)-General**

The CONTRACTOR shall provide his employees required PPE meeting the requirements of the stated IS specifications and guidelines or equivalent International Standards as may be prescribed by the EMPLOYER / CONSULTANT from time to time. The CONTRACTOR shall have instituted good working procedures and practices in providing PPEs, maintenance, issue and training on their usages. All PPE shall be periodically checked to ensure worn, damaged equipment are replaced expeditiously.

3.1.1) **Control Issue, Use and Maintenance of the PPE**

Employees shall be responsible for the PPE issued to them. The CONTRACTOR shall meet requirements of IS 8519 entitled 'Guide for Selection of Industrial Safety Equipment for Body Protection' or any equivalent international specification that the PURCHASER/CONSULTANT may prescribe.

3.1.2) **Head Protection**

CONTRACTOR shall comply with requirements of IS 2925. Hard hats with chin strip shall be used and worn. Hard hats intended for use by visitors shall have replaceable paper lining.

3.1.3) **Eye and Face Protection**

Eye protection shall be worn during all operations by operators and people in the vicinity, where there is a danger of flying particles of metal such as generated during use of hand tools such as chisels, grinding, welding and cutting - lathe work on brass and cast iron, acid and alkali splash, high pressure jet cleaning or insulation removal from heights using high pressure jets. The CONTRACTOR shall meet the requirements of IS 8520 entitled 'Guide for Selection of Industrial Safety Equipment for Eye, Face and Ear Protection'.

3.1.4) **Footwear**

Safety shoes, boots and gumboots fitted with steel toe-caps of approved quality conforming to prescribed Indian or international standards. Wearing of unsafe safety shoes such as jogging shoes, tennis shoes, slippers and sandal etc. are prohibited. The CONTRACTOR shall meet the requirements of IS 10667 entitled 'Guide for Selection of Industrial Safety Equipment for Protection of Foot and Leg'.

ISSUE

R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 15 OF 23

3.1.5) **Protective Clothing**

CONTRACTOR shall prevent hazards of loose clothes worn by workmen getting caught in moving machine parts. Loose and thin garments such as dhoti and pyjamas are prohibited. While the CONTRACTOR shall ensure that all workmen wear long sleeved shirts, jackets or the like with the sleeves rolled down and secured at the cuff, long pants/ trousers extending upto the top of the safety shoes so as to prevent injuries caused by contact with heat, cold abrasive and sharp surfaces shall be strictly enforced. Such protective clothing shall be mandatory in hazardous areas especially during start-up operations involving hot, inflammable, and other chemical hazards, furnaces and boilers and such fired equipment and asphaltting plants. Personnel exposed to acids and alkalies hot fluids and steam during such operations shall be provided with appropriate heat or corrosion resistant clothing. The CONTRACTOR shall meet the requirements of IS 8990 entitled 'Maintenance and Care of Industrial Safety Clothing'.

3.1.6) **Hand Protection**

CONTRACTOR shall provide appropriate hand gloves as per IS 8807 entitled 'Guide for Selection of Industrial Safety Equipment for Protection of Arms and Hands' to prevent injuries to hands during work. The CONTRACTOR shall maintain appropriate inventory of gloves for different applications like acid and alkali handling, general-purpose work gloves and asbestos or heat resistant hand gloves etc.

3.1.7) **Safety Harness**

CONTRACTOR shall provide Full body Safety harness with double lanyard to workmen engaged for work in heights such as open-sided floors, open-sided scaffoldings, floor and roof openings, overhead construction works of various nature etc. where there is a falling hazard of two meters or above. Storage, issue, wearing and maintenance of full body safety harness with double lanyard shall be under strict supervision and records shall be maintained. Practices for safety harnesses and fall arrests shall conform to IS 4912, IS 11972 and IS 8519 or equivalent international codes.

3.1.8) **Falling Object Protection**

Where work is in progress in elevated areas, barricades, barrier tapes, signs and such entry restriction devices shall be used to keep area below clear of personnel to prevent injury due to falling objects. If work is required in the area below elevated work area, it shall be scheduled at a time different from elevated works. The workmen below shall be protected from falling objects by the debris net or a catch platform with an adequate toe board to prevent material from falling off. Use of safety net for elevated works shall be considered in the work-permits where appropriate. Where a lift is made above

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 16 OF 23

a working area, the area below the path of the lift shall be cleared of personnel during the lift and barricaded and guarded to prevent entry of persons generally in conformity with IS 4912, IS 11972 and IS 13416 for protective barriers in and around building and preventive measures against safety hazards in work places and safety requirements for floor and wall opening, railings and toe-boards.

3.1.9) **Respiratory Equipment**

CONTRACTOR shall maintain where appropriate, procedures for training and use of Self-Contained Breathing Apparatus (SCBA). The SCBA shall be provided together with lifelines and rescue teams to safeguard personnel working in areas where gases such as carbon monoxide, methane chlorine and such life endangering atmospheres are present. The CONTRACTOR shall meet requirements of IS 9623 for 'Selection, Use and Maintenance of Respiratory Protective Devices'. The CONTRACTOR shall have trained adequate number of personnel including the identified fire fighting teams, hose teams and SAs in the use of the SCBA. The CONTRACTOR shall use the periodic safety drills to demonstrate, train and establish competence of personnel in the use of SCBA.

3.1.10) **Hearing Conservation**

CONTRACTOR shall ensure reasonable precautions are taken to avoid injury to the hearing of the employees. All noise levels shall be controlled within 85 dBA. The CONTRACTOR shall identify noise areas and display caution boards in such noise areas where noise levels exceed prescribed safe level, the CONTRACTOR shall arrange for appropriate engineering control measures to minimise the noise level in such high noise level areas. Where this is not feasible, appropriate earmuffs or ear protectors (ear plugs) shall be provided to workmen ensuring these are worn by those exposed to noise levels beyond safe levels. Periodic hearing acuity tests shall be conducted on such persons exposed to high noise levels to ensure that they do not suffer any hearing impairment as per requirements of IS 8520:1977, The contractor shall also maintain records of such medical tests. The CONTRACTOR shall devise training programme for awareness on effects of high noise hazards and control measures for all the employees.

3.2) **MANUAL MATERIAL HANDLING AND ERGONOMICS**

3.2.1) CONTRACTOR shall have procedures to identify risks involved in manual / material handling operation and tasks. The CONTRACTOR shall ensure

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 17 OF 23

appropriate training to prevent any possible injury. Full use of mechanical aids shall be made to avoid risks arising out of such manual handling. Employees shall be adequately trained on such manual tasks and related safety precautions to reduce the risk of injury to personnel engaged in such work.

3.2.2) CONTRACTOR shall undertake ergonomic study of manual operations to prevent musculoskeletal injury during manual handling, besides visual fatigue and mental stress giving considerations to matters such as seating, lighting and ventilation, etc.

4.1) FIRE PROTECTION AND PREVENTION

4.1.1) CONTRACTOR shall arrange to train his personnel meeting the prescribed qualifying competence needs, in requisite numbers in the operation of such fire protection equipment and systems.

4.1.2) Risk assessments shall be carried out to identify potentially vulnerable areas to provide sufficient quantities of correct type of extinguishers and ancillary equipment to deal with various types of fire hazards.

4.1.3) Where required under the CONTRACT the CONTRACTOR shall provide appropriate type of extinguishers close to areas of fire hazard but not too close they are cut off from use during a fire. Water based extinguishers shall not be positioned close to or used on electrical equipment.

4.1.4) Extinguishers shall be marked / labeled and recorded with location particulars in a register. These shall be inspected at monthly intervals to ensure they are in operable sound condition. There shall be a systematic plan for servicing, repairing and recharging fire extinguishers and for recording such dates on the register and equipment.

4.1.5) The location of fire fighting equipment shall quickly and easily be identifiable especially in emergencies in a conspicuous manner painted as high as possible to identify the location of the extinguisher to prevent it from being obscured by machinery and goods stacked in front and to return the equipment to its location after emergency use in other locations. In order to ensure this, 'Keep Clear' area shall be demarcated and maintained. Location plans of extinguishers and fire-fighting equipment shall be prominently displayed when desired by the EMPLOYER/CONSULTANT.

ISSUE R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 18 OF 23

4.1.6) Safety Officer / Security shall be trained on fire fighting techniques who shall co-ordinate and control Fire protection and prevention programmes.

4.1.7) Where required under the CONTRACT, the CONTRACTOR shall maintain alarm systems powered by mains and by battery for back-up. Where required under the CONTRACT, emergency lighting shall be provided to aid evacuation in poor lighting conditions following the alarm. The alarm system shall be made known to all employees. When the EMPLOYER extends these facilities for use by the CONTRACTOR, he shall provide appropriate training to his personnel in the use of such emergency facilities and duties.

4.1.8) A clear written procedure for action in the event of fire should be produced. Fire teams and hose teams shall be identified and their responsibilities during emergencies shall be detailed in writing. Personnel shall be trained on their fire duties and use of fire-fighting equipment. Regular drills shall be conducted to test procedures and to validate them. Fire instructions and emergency procedures shall be displayed throughout the premises. Emergency response procedures are detailed under para 5.0 below.

4.1.9) A means of escape shall be provided in all work areas and storages and maintained and kept free from obstruction. All exits shall be clearly marked and kept unlocked whilst the premises are in use. Escape routes shall be protected from fire.

4.1.10) When a hot work permit is issued, the CONTRACTOR shall ensure:

- (i) Identification of combustibles such as paper, cardboard and wood and moving away from area where hot work is undertaken using open flame or electric arc.
- (ii) Determination that flammable vapours and liquids are not present.
- (iii) Protection of floor and wall openings to keep out sparks.
- (iv) Determination that sprinkler and hydrant and other installed fire systems are functional.
- (v) Establishing a fire-watch with fully loaded extinguishers or charged Water-hoses throughout the operation and 30 minutes after completion of operation
- (vi) Adequate ventilation for welders, by means of natural air movement
Local exhaust ventilators or air-line respirators as required.
- (vii) Workmen performing the task are adequately briefed on job safety analysis, hazards and risks and the safeguards against risks.

4.2) SECURITY

4.2.1) Where required under the contract, security personnel shall do all that is reasonably practicable to ensure the safety of employees and property of the company in the face of accidents by fighting fires and containing losses due to pilferage, theft, vandalism and industrial espionage both by employees and external elements. Security personnel shall be appropriately competent and receive adequate safety training. Security personnel shall routinely report on a

ISSUE R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 19 OF 23

standardized basis on aspects such as violation of fire-protection rules, use of alcohol and narcotic drugs, condition of security fencing, floodlighting and storages etc.

4.2.2) Where the project is located where a number of other companies are in operation, the CONTRACTOR shall plan for mutual assistance /off site programmes in cases of emergencies, as are practiced in the area in conjunction with the EMPLOYER.

4.2.3) Where common boundaries exist between companies, the CONTRACTOR in conjunction with the EMPLOYER shall co-ordinate security control over factors common: such as floodlights, fencing, pipelines containing gas, fuel and electricity.

4.2.4) Security personnel shall be represented in the Safety Committee through the Safety Appointees nominated from the area.

5.0) **EMERGENCY PLANNING / EMERGENCY RESPONSE**

5.1) CONTRACTOR shall plan to deal with on site emergencies. An emergency planning/emergency response specific to the job site shall be written and communicated to all employees. The emergency planning/emergency response shall identify for the potential for and responses to incidents and emergency situations and for preventing and mitigating the likely illness and injury that may be associated with them.

5.2) CONTRACTOR shall review his emergency preparedness and response plans and procedures in particular after occurrence of incidents or emergency operations.

5.3) CONTRACTOR shall designate his emergency team with their duties during emergencies defined, including those of the hose teams, medical personnel, first-aiders and security. The CONTRACTOR shall maintain a procedure as to how his emergency organization shall liaise with the EMPLOYER/CONSULTANT representatives in the emergency planning/emergency response.

5.4) CONTRACTOR shall also periodically test such emergency procedures by conducting mock-drills and use the experience for updating the emergency planning/emergency response and for training the employees on the perceived competence needs.

5.5) The Emergency Planning/Emergency Response of the CONTRACTOR shall be under the control of the Safety Representative who shall be able to co-

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 20 OF 23

ordinate with the EMPLOYER/CONSULTANT for liaising with government agencies, neighboring industries and community.

5.6) The Emergency Planning/Emergency Response shall be designed to allow people to work under disaster conditions when normal services such as telephone water, light power, transport and sanitation are not available and first aid and fire fighting facilities are not able to cope with sudden demand on services.

5.7) The Telephone numbers of Ambulance, Police, Fire , Hospitals/ medical centers, Managers and the Employers key executives shall be prominently displayed in the identified Emergency Response Centre.

6.0) **PREMISES AND HOUSE-KEEPING**

6.1) **ORDERLY WORK-PLACE**

CONTRACTOR shall maintain a well-managed safe working place in sound clean condition. The CONTRACTOR shall ensure that there is a place for everything and everything in its place so that optimum use is made of valuable floor space with commensurate cleanliness and reduced handling time. He shall ensure that his entire infrastructure including temporary and semi-temporary buildings are kept clean and good repair.

6.2) **GOOD LIGHTING-NATURAL AND ARTIFICIAL**

CONTRACTOR shall provide lighting natural or artificial to enable work Processes are carried out safely. Artificial lighting shall be adequate especially in the nights and emergencies. The lumen levels shall meet the statutory requirements.

6.3) **VENTILATION-NATURAL AND ARTIFICIAL**

CONTRACTOR shall ensure that workplaces are ventilated with at least prescribed amount of clean or cleaned fresh air of a suitable temperature, especially where toxic or irritating substances are present such as welding, vehicle exhaust fumes, irritating dusts, organic solvents or any other inimical atmosphere creating health hazards or safety.

6.4) **WELFARE AND HYGIENE FACILITIES**

CONTRACTOR shall provide Welfare facilities to ensure a high standard of cleanliness for all activities and rest. The CONTRACTOR shall provide facilities for his employees such as ablutions, toilets change rooms, kitchens and cafeterias adequate and in a clean and hygienic state.

6.4.1) **DRINKING WATER**

ISSUE
R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 21 OF 23

The Contractor shall make in every place where building or other construction work is in progress, effective arrangements to provide and maintain at suitable points conveniently situated for all persons employed therein, a sufficient supply of wholesome drinking water.

6.4.1.1) All such points shall be legibly marked "Drinking Water" in a language understood by a majority of the persons employed in such place and no such point shall be situated within six meters of any washing place, urinal or latrine.

6.4.1.2) Container used to distribute drinking water shall be hygienic and clearly marked as to the nature of its contents and not used for any other purpose.

6.4.2) LATRINE AND URINAL ACCOMODATION.

Latrines or urinals, as the case may be, required to be provided shall be of the types as specified below.

6.4.2.1) Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a door and fastenings;

6.4.2.2) Where both male and female building workers are employed there shall be displayed outside each block of latrine or urinals a notice containing therein " :

(i)For Men Only" or "For Women Only", as the case may be, written in the language understood by majority of such workers;

(ii) Such notice shall also bear the figure of a man or a woman, as the case may be.

(iii) Every latrine or urinal shall be conveniently situated and accessible to site workers at all the times;

(iv) Every latrine or urinal shall be adequately lighted and shall be maintained in a clean and sanitary condition at all the times;

(v) Every latrine or urinal other than those connected with a flush sewage System shall comply with the requirements of public health authorities.

(vi) Water shall be provided by means of a tap or otherwise so as to be conveniently accessible in or near latrine or urinal;

(vii)Wall, ceilings and partitions of every latrine or urinal shall be white washed or color washed once in every period of four months.

(viii)Hand soap or similar cleaning agent shall be provided in each latrine.

6.4.2) CANTEENS:

6.4.2.1) CANTEENS AT LABOUR CAMPS:

(i) In every place wherein not less than two hundred and fifty building workers are ordinarily employed, contractor of such building workers shall provide an adequate canteen.

(ii) The canteen shall consist of a dining hall with furniture sufficient to accommodate building workers using such canteen, a kitchen, and store

ISSUE

R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 22 OF 23

room, pantry and washing places separately for building workers and for utensils.

- (iii) The canteen shall be sufficiently lighted at all the times when any person has access to it.
- (iv) The floor of canteen shall be made of smooth and impervious material and inside the walls of such canteen shall be lime-washed or colour-washed at least once every six months.
- (v) The precincts of canteen shall be maintained in a clean and sanitary condition;
- (vi) Waste water from canteen shall be carried away in suitable covered drains and shall not be allowed to accumulate in the surrounding of such canteen.
- (vii) Suitable arrangements shall be made for collection and disposal of garbage from canteens.
- (viii) Building of canteen shall be situated at the distance not less than 15.2 metres from any latrine or urinal or any source of dust, smoke obnoxious fumes.
- (ix) Site where workers can not avail canteen facility due some reason and are need to take food close to work place, at such locations contractor shall provide a separate place for food serving facility with sound hygienic principles and shall meet the applicable laws.

6.4.2.2 CANTEN AT PROJECT PREMISES

- (i) Workers must not cook in the project premises.
- (i) Workers shall carry the food from labour camps and shall have at designated lunch shed made by the contractor.
- (ii) Contractor should make shed for workers having lunch in designated location approved EMPLOYER/CONSULTANT.
- (iii) Workers having food in open / work location are strictly prohibited.

6.4.3 SAFETY , HEALTH AND WELFARE AT LABOUR CAMPS

- (i) The Contractor shall provide free of charge as near to it as may be possible, temporary living accommodation to all building workers employed by him for such period, as the building or other construction work is in progress.
- (ii) The temporary accommodation provided by the contractor shall have separate cooking place, Bathing, washing & lavatory facilities.
- (iii) As soon as may be, after the building or other construction work is over, the CONTRACTOR shall, at his own cost, cause removal or demolition of the temporary structures erected by him for purpose of providing living accommodation, cooking place or other facilities to the building workers and restore the ground in good level and clean condition.
- (iv) Colony/shelters constructed shall be situated at suitable heights where danger of water (waste or rainy) accumulation does not exists; as water accumulation ultimately leads to breeding ground for mosquitoes.
- (v) Shelters constructed at labour camp shall protect labourer/workers from rain, cold and heat. And shall be so constructed, equipped and maintained, so far as

ISSUE

R2

SPEC.NO TCE.M4-918	TATA CONSULTING ENGINEERS LIMITED	SECTION:WRITE-UP
	Contractors Safety and Health programme	SHEET 23 OF 23

reasonably practicable, as to prevent the entrance or harbour of rodent, insect, and other vermin. A continuing and effective extermination program shall be instituted where their presence is detected.

- (vi) Electric supply shall be provided at labour camps for illumination purpose.
- (vii) Safe and Adequate potable water shall be provided at camps. The quantity of water shall be decided after taking number of persons residing in camp into consideration.
- (viii) Proper access shall be provided to the shelters.
- (ix) Labourers residing at camp shall be encouraged to maintain their camp clean by providing waste bins and waste disposal system.
- (x) Facility shall be created to drain out waste water. Drainage of camps/colony shall be connected to drainage system or soak tanks to avoid water accumulation.
- (xi) Adequate toilets and washing facilities shall be provided for the labourers inside the camp.
- (xii) Safety & Health related posters shall be placed in the camp to increases safety and health awareness amongst the labourers.
- (xiii) First-aid facility shall be provided in the camp. Also few workers should be trained to render first-aid and fire fighting in case of emergencies.

6.4 **POLLUTION TO GROUND, AIR AND WATER**

- (i) The CONTRACTOR shall strive to exceed established minimum performance norms in waste and pollution control. All drains shall be identified as clean water and foul water to aid non-armful disposal. The CONTRACTOR shall ensure safe collection and disposal of solid, liquid and other waste, and ensure periodical cleaning of disposal bins, septic tanks and shall maintain the records.
- (ii) The CONTRACTOR shall have a System in place to segregate waste during construction and subsequent reuse or recycling.
- (iii) The CONTRACTOR shall take necessary measures to prevent construction activity pollution by controlling soil erosion and sedimentation as per the National Building Code (NBC) 2005 guidelines. The Top soil shall be staked and reused for land scaping, wherever applicable/ reused suitably.
- (iv) The CONTRACTOR shall take necessary measures to control dust generation at site and roads by sprinkling water at regular interval.
- (v) The CONTRACTOR shall conduct periodic ambient air quality monitoring through approved lab to check the pollution levels at the site particularly in areas where batching plant shall be maintained by the CONTRACTOR and produced to EMPLOYER/ CONSULTANT.

ISSUE
R2