



“Engagement of Agency for Geotechnical Investigation Work for 12.576 Km Elevated Viaduct from Canal Road to Badrabad Dead End (from Chainage 6904.984 to 19481.228) of Ahmedabad Metro Rail Project-Phase -III (B)”

TENDER NO.: GMRC/GEOTECH/PH-3(B)/2026

VOLUME - II

Condition of Contract on Safety, Health & Environment

Gujarat Metro Rail Corporation (GMRC) Limited

(SPV of Govt. of Gujarat and Govt. of India)

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PART – I: SAFETY AND HEALTH MANAGEMENT**1.0 General****1.1 Scope**

This document defines the principal requirements of the Employer on Safety and Health associated with the contractor / sub-contractor and any other agency to be practiced in works at all time.

1.2 Definition /languages

In this document

- a) The use of “shall” indicates a mandatory requirement.
- b) The use of “should” indicates a guideline that is strongly recommended.
- c) The use of “may” indicates a guideline that is to be considered.
- d) Employer means Gujarat Metro Rail Corporation Ltd. (GMRC).
- e) Chief Safety Officer means an officer nominated by GMRC who is overall responsible for monitoring all Safety and Health functions prescribed in this document.
- f) BOCWA means Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996.
- g) BOCWR means Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Central Rules, 1998.
- h) DG means Director General of Ministry of Labour, Government of India.

1.3 Application of this document

This document applies to all aspects of the contractor's scope of work, including all aspects conducted by sub-contractors and all other agencies. There shall be no activity associated to the contract, which is exempted from the purview of this document.

1.4 Purpose of this document

The objective of these guidelines is to ensure that adequate precautions are taken to avoid accidents, occupational illness and harmful effects on the environment during work.

2.0 “SHE” Targets and Goals

The SHE targets, goals and aim for the Works are to achieve:

- a) Zero total record able injuries.
- b) Zero reportable environmental incidents
- c) 100% incident recording and reporting
- d) 100% adherence of usage of appropriate PPEs at work.
- e) Executing work with least disturbance to the environment, adjoining road users and traffic.

3.0 Compliance**3.1 GMRC’s Safety and Health Policy and Management Systems**

The works shall be undertaken in accordance with GMRC's Safety and Health Policy and Management Systems as amended from time to time provided in Safety and Health Manual.

3.2 Indian statutory requirements

Contractor shall develop thorough understanding about Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996, Central Rules 1998, Building and Other construction workers Welfare Cess Act, 1996 and Central Rules, 1998.

In addition, the works shall be undertaken in accordance with all applicable legislation and Indian statutory requirements listed below but not limiting to:

- a) Indian Electricity Act 2003 and Rules 1956
- b) National Building Code, 2005
- c) Factories Act, 1948
- d) Gas Cylinder Rules, 2003
- e) The Public Liability Insurance Act 1991 and Rules 1991
- f) Employees Compensation Act, 1923 along with allied Rules
- g) Minimum Wages Act, 1948 and Rules 1950
- h) Contract Labour Act, 1970 and Rules 1971
- i) Child Labour (Prohibitions & Regulations) Act, 1986 and Rules 1950
- j) Environment Protection Act, 1986 and Rules 1986
- k) Air (Prevention and control of Pollution) Act, 1981
- l) Water (Prevention and Control of Pollution) Act, 1974
- m) The Noise Pollution (Regulation & Control) Rules, 2000
- n) Notification on Control of Noise from Diesel Generator (DG) sets, 2002
- o) Recycled Plastic Usage Rules, 1998
- p) Notification, Central Ground Water Board, Act January 1997
- q) Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989
- r) The Hazardous Waste (Management & Handling) Rules, 1989
- s) Hazardous Waste Management Rules 1989 (as amended in 1999)
- t) Batteries (Management and Handling) Rules

4.0 ID Card and First day at work, SHE orientation training

Identity card to each staff shall be issued by the Contractor. The contractor should submit application for this in the prescribed format clearly providing basic details affixing photographs and finger prints of the concerned staff. In the absence of valid identity card, the staff shall not be permitted to enter into the station premises/work sites.

The Contractor shall ensure that all personnel working at the site receive an induction Safety and Health training explaining the nature of the work, the hazards that may be encountered during the work place work and the particular hazards attached to their own function within the operation.

5.0 Safety and Health Training

5.1 The contractor shall organize quality SHE training to engage Managers, supervisors and other personnel in behavioral change and improve safety performance.

The Contractor shall analyse the training requirements for all the employees and initiate a training program to demonstrate that all persons employed, including subcontractors, are suitably qualified, competent and fit. This will include:

- i) Detailed Job descriptions for all personnel, to include their specific SHE responsibilities
- ii) Specification of qualifications, competency and training requirements for all personnel
- iii) Assessment and recording of training needs for all personnel, including subcontractors' employees in the workforce, vendor representatives and site visitors

- iv) A system for assessing new hirers e.g. previous training
 - v) A means of confirming that the system is effective
 - vi) A matrix and schedule of training requirements, covering general, task-specific and SHE-related training, showing the training frequency and interval between refresher courses
 - vii) Timely, competent delivery of training courses
- 5.2 The contractor shall arrange behavioral-based training program me for all the executives to identify recognise and eliminate unsafe act and unsafe conditions.
The refresher-training program me to all employees shall be conducted once in six months.
- 5.3 Tool box talk as given in the Employer's Project SHE manual shall be conducted to all high-risk work men every day.
- 5.4 On-the spot practical skill development training on height safety including scaffold safety, crane safety, welding safety, electrical safety, traffic safety for marshals shall also be conducted to all foremen/ workmen who are associated to the concerned jobs.

6.0 Accident reporting.

All accidents and dangerous occurrences shall immediately be informed verbally to the Employer. Reports of all accidents (fatal / injury) and dangerous occurrences shall also be sent within 24 hours as per format provided.

No accident / dangerous occurrences is exempted from reporting to the Employer. Any willful delay in verbal and written reporting to the Employer shall be penalized as per relevant clause.

PART – II: SAFETY

7.0 House keeping

- i) Contractor shall understand and accept that improper is the primary hazard in any work place and ensure that a high degree of is always maintained. Indeed "Cleanliness is indeed next to Godliness"
- ii) General shall be carried out by the contractor and ensured at all times at Work place, Labour Camp, Stores, Offices and toilets/urinals.
- iii) All stairways, passageways and gangways shall be maintained without any blockages or obstructions. All emergency exits passageways, exits fire doors, break-glass alarm points, fire-fighting equipment, first aid stations, and other emergency stations shall be kept clean, unobstructed and in good working order.
- iv) Water logging on work places shall not be allowed.
- v) Proper and safe stacking of material needs to be ensured.
- vi) All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from work place to identified location(s).
- vii) Some DO"s and DONT"s for Working Staff

DO'S AND DON'TS FOR STAFF DO'S

- a In case of fire / anything unusual on electric traction equipment or wires, inform the station controller/Manager.
- b Extinguish fire by special extinguishers (carbon tetrachloride or carbon dioxide type, if available).
- c Ensure no water jet to be directed at the fire under any circumstances.
- d Before taking up the work on a line running parallel to 750 DC system, the line shall be earthed on both sides. Ensure that the distance between the two earths used for protection does not exceed 1km.
- e Keep clear of the track and avoid contact with the rails when electric train within 250m.
- f Special care should be taken to carry long pipes, poles or ladders so that it should not come in contact with or within 2 meters of live third rail.
- g Cleaning work other than that of surface (i.e. of beam, pillars etc.) should be done during block period only.
- h Whenever washing or cleaning using water jets is done, take appropriate power block.
- i Cases of electric shock arising out of contact with 750 DC traction equipment shall be reported immediately to TPC (Traction Power Control).

DON'Ts

- a. Do not approach within 2 meters of any traction wires or live equipment.
- b. Do not work on or near traction wires or any live equipment unless they are made dead, earthed and shut down notices/ permit to work obtained.
- c. Do not enter any switching station or remote control center unless specially permitted.
- d. Do not touch a person in contact with live traction wires. Remove body only after power supply is switched off & earthed.
- e. Do not touch any traction wire hanging from the mast or fallen on the ground and do not allow anyone else to touch it.
- f. Cleaning work with conducting materials like Aluminum/ Steel rods should be avoided at all times when power block is not availed.
- g. Do not lift or raise your tools towards traction wires.
- h. Do not damage the plinth continuity, connection to BEC, OPC and handrail continuity.
- i. Do not use steel tape or metallic tape or tape with woven metal reinforcement in electrified area.
- j. Do not forget to give artificial respiration to the victim as per the prescribed procedure laid down at shock treatment charts.
- k. Metallic telescopic rods are prohibited for use in the GMRC station.
- l. Do not throw garbage in haste. Dispose it properly at designated place.
- m. Do not dispose dirty water into

8.0 Working at Height

The contractor shall ensure that work at height is

- a. properly planned for any emergencies and rescue
- b. appropriately supervised; and
- c. carried out in a manner, which is reasonably practicable safe.

8.1 Falling objects

- i) The contractor shall, where necessary to prevent injury to any person, take suitable and sufficient steps to prevent, so far as is reasonably practicable, the fall of any material or object.
- ii) Every contractor shall take suitable and sufficient steps to prevent any person being struck by any falling material or object which is liable to cause personal injury.
- iii) The contractor shall ensure that no material or object is thrown or tipped from height in circumstances where it is liable to cause injury to any person.
- iv) Every contractor shall ensure that, every workplace where chances of fall of material or other may exist shall be properly barricaded or provided with suitable safety net as well as fall catch arrestors etc.

8.2 Danger areas

Every contractor shall ensure that

- i) where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work,
 - a) falling a distance; or
 - b) being struck by a falling object,which is liable to cause personal injury, the workplace is so far as is reasonably practicable equipped with devices preventing unauthorized persons from entering such area; and such area is clearly indicated.

8.3 Inspection of work equipment

The contractor shall ensure that, all work equipment used at work place and exposed to conditions causing deterioration shall be inspected regularly and recorded.

8.4 Requirements for all Working Platforms

Every contractor shall ensure that whenever necessary proper, safe and adequate to the working requirement, working platforms is provided

- 8.5 Every contractor shall ensure that fall protection measures are provided for safety means of access as well as safe working.

8.6 Requirements for Ladders

Every contractor shall ensure that a ladder is used for work at height only if a risk assessment has demonstrated that the use of more suitable work equipment is not justified because of the low risk.

- i) Only metal ladders shall be allowed. Bamboo ladders are prohibited.
- ii) Any surface upon which a ladder rests shall be stable, firm, of sufficient strength and of suitable composition safely to support the ladder so that its rungs or steps remain horizontal, and any loading intended to be placed on it.
- iii) A ladder shall be so positioned as to ensure its stability during use
- iv) A portable ladder shall be prevented from slipping during use by-
 - a. securing the stiles at or near their upper or lower ends;
 - b. an effective anti-slip or other effective stability device; or
 - c. any other arrangement of equivalent effectiveness.
- v) A ladder used for access shall be long enough to protrude sufficiently above the place of landing to which it provides access, unless other measures have been taken to ensure a firm handhold.
- vi) No interlocking or extension ladder shall be used unless its sections are prevented from moving relative to each other while in use.
- vii) A mobile ladder shall be prevented from moving before it is stepped on.
- viii) Where a ladder or run of ladders raises a vertical distance of 9 meter or more above its base, there shall, where reasonably practicable, be provided at suitable intervals sufficient safe landing areas or rest platforms.
- ix) Every ladder shall be used in such a way that
 - (a) a secure handhold and secure support are always available to the user; and
 - (b) the user can maintain a safe handhold when carrying a load unless, in the case of a step ladder, the maintenance of a handhold is not practicable when a load is carried, and a risk assessment has demonstrated that the use of a stepladder is justified because of
 - (i) the low risk; and
 - (ii) the short duration of use.

8.7 Fragile surfaces

The contractor shall ensure that no person at work passes across or near, or working on, from or near, a fragile surface where it is reasonably practicable to carry out work safely and under appropriate ergonomic conditions without his doing so.

Where it is not reasonably practicable to carry out work safely and under appropriate ergonomic conditions without passing across or near, or working on, from or near, a fragile surface, every contractor shall,

- (a) ensure, so far as is reasonably practicable, that suitable and sufficient platforms, coverings, guard rails or similar means of support or protection are provided and used so that any foreseeable loading is supported by such supports or borne by such protection;
- (b) where a risk of a person at work falling remains despite the measures taken under the preceding provisions of this regulation, take suitable and sufficient measures to minimize the distances and consequences of his fall.

Where any person at work may pass across or near, or work on, from or near, a fragile surface, every contractor shall ensure that

- (a) prominent warning notices are so far as is reasonably practicable affixed at the approach to the place where the fragile surface is situated; or
- (b) where that is not reasonably practicable, such persons are made aware of it by other means.

9.0 Slipping, Tripping, Cutting and Falling Hazards

- i) All places should be free from dust, debris or similar materials. Sharp projections or any protruding nails or similar objects shall be suitably guarded or shall even be avoided to make the place safe to work.
- ii) Open side or opening where worker, equipment, vehicle or lifting appliance may fall at a building or outside shall be guarded suitably except in places of free access by reasons of nature of work.
- iii) Suitable safety net shall be provided at places of material / man falling is possible in accordance with national standards.

10.0 Lifting Appliances and Gear

- i) The contractor shall ensure that a valid certificate of fitness is available for all lifting appliances, if used.
- ii) The laminated photocopies of fitness certificate issued by competent person, the operators "photo, manufacturer's load chart and competency certificate shall always be either kept in the operator cabin or pasted on the visible surface of the lifting appliances.
- iii) All lifting appliances and loose gears shall be clearly marked for its safe working load and identification by stamping or other suitable means.

10.1 Test and periodical examination of lifting appliances and gears

- iv) All lifting appliances including all parts and gears thereof, whether fixed or movable shall be thoroughly tested and examined by a competent person once at least in every six months or after it has undergone any alterations or repairs liable to affect its strength or stability.
- v) All alarms and signals like automatic safe load indicators (SLI), boom angle indicators, boom extension indicators, over lift boom alarm, swing alarm, hydraulic safety valves, mechanical radius indicators, load moment indicators etc. shall be periodically examined and maintained always in working condition.

10.2 Automatic safe load indicators

Every lifting appliances and gears like cranes, hydras etc., if so constructed that the safe working load may be varied by raising or lowering of the jib or otherwise shall be attached

with an automatic indicator of safe working loads approved by Bureau of Indian standards/ International certifying bodies which gives a warning to the operator and arrests further movements of the lifting parts.

10.3 Mandatory rigging requirements

- i) Rigging shall be done under experienced and qualified rigger only.
- ii) The primary requirement in rigging shall be to assess the weight of load before attempting any lift.
- iii) All hooks shall be fitted with Master Rings having certificate of fitness from the competent person, so that the hooks are subjected to balanced vertical loading only.
- iv) Only four legged slings shall be allowed which includes master link (ring), intermediate master link (ring) if necessary, chain / wire rope sling, sling hook or other terminal fitting.
- v) Hand spliced slings up to 32mm diameter shall not be used at site for any lifting purpose.
- vi) No load shall be slewed over public areas without stopping the pedestrians and road traffic first.
- vii) Requirements of outriggers
 - a) All outriggers shall be fully extended and at all tyres are clear of the ground.
 - b) Heavy duty blocking having large bearing area shall be necessary to prevent sinking offloads.
- viii) All loads shall have tag-lines attached in order to ensure that the load can be controlled at all times.
- ix) No close working to any live overhead power line is permitted without the operation of a strict Permit to Work.
- x) Minimum lighting is to be ensured at all lifting operations.

11.0 Work place machinery

Every work place equipment shall be in sound mechanical working condition and certified by either competent person under Factories Act or manufacturers' warranty in case of brand new equipment's or authorized persons / firms approved by Employer before induction to any work place.

All Vehicles shall be fitted with audible reverse alarms and maintained in good working condition. Reversing shall be done only when there is adequate rear view visibility or under the directions of a banksman.

12.0 Machine and General Area Guarding

The contractor shall ensure at the work place all dangerous and moving parts of machines are securely fenced. The fencing of dangerous part of machinery is not removed while such machinery is in motion or in use.

13.0 Manual lifting and carrying of excessive weight

The contractor shall ensure at his work place no staff, lifts by hand or carries overhead or over his back or shoulders any material, article, tool or appliances exceeding in weight as said below, unless aided by another staff or device.

Person	Maximum weight in kg.
Adult man	55
Adult woman	30

14.0 Work place Electricity

- i) Every contractor shall ensure safe usage practices of power supply as well as safe electrical equipment's fitted with protection devices.
- ii) Cables shall be selected after full consideration of the condition to which they shall be exposed and the duties for which they are required.
- iii) The contractor shall ensure plugs, socket-outlets, and couplers available in the work place as per IS/applicable standard.
- iv) Every joint and connection in a system shall be mechanically and electrically suitable for use to prevent danger. Proper cable connectors as per standards shall only be used to connect cables.
- v) No loose connections or tapped joints shall be allowed anywhere in the work place, office area, stores and other areas.
- vi) The main contractor shall take consideration, the requirements of the sub / petty contractors" electric power supply and arrive at the capacity of main source of power supply from diesel generators.
- vii) As the sub / petty contractors" small capacity generators create more noise and safety hazard, no small capacity diesel generators shall be allowed for whatsoever the type of job to be executed under this contract.
- viii) The contractor shall also submit electrical single line diagram, schematic diagram and the details of the equipment for all temporary electrical installation and these diagrams together with the temporary electrical equipment shall be submitted to the Employer's for necessary approval. Failure to do so shall invite penalty as per relevant clause.

The contractor shall provide sufficient ELCBs (maintain sensitivity 30 mA) / RCCBs for all the equipment's (including Potable equipment's), electrical switchboards, distribution panels etc. to prevent electrical shocks to the workers.

15.0 Work on or near live conductors

- i) For working near Third Rail & other Electrical installation, the rules/measures provided in the Safety Circular of O&M wing shall be followed.
- ii) No person shall be engaged in any work activity on or so near any live conductor (other than one suitably covered with insulating material so as to prevent danger) that danger may arise unless-
 - a) Suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury.

15.1 Inspection and Maintenance

All electrical equipment should be permanently numbered and a record kept of the date of issue, date of last inspection and recommended inspection period.

16.0 Hand Tools and Power Tools

- i) The contractor is wholly responsible for the safe condition of plant and equipment used by his employees and that of his sub-contractors.
- ii) Use of short / damaged hand tools shall be avoided and the contractor shall ensure all his hand tools used at his work place are safe to work with or stored and shall also train his employees (including his sub-contractors) for proper use thereby.
- iii) All hand tools and power tools shall be duly inspected before use for safe operation.
- iv) The contractor shall ensure that power tools (electric) are properly grounded or / and double insulated.

17.0 Fire prevention, protection and fighting system

- i) The contractor shall ensure that storage area is provided with fire extinguishing equipment sufficient to extinguish any small fire at workplace.
- ii) Recharging of fire extinguishers and their proper maintenance should be ensured and as a minimum should meet Indian National Standards
- iii) Combustible scrap and other work place debris should be disposed off on a regular basis.

18.0 Corrosive substances

Corrosive substances including alkalis and acids shall be stored and used by a person dealing with such substances at a building / work place in a manner that it does not endanger the worker and suitable PPE shall be provided by the contractor to the worker during such handling and work. In case of spillage of such substances on worker, the contractor shall take immediate remedial measures.

19.0 Work Permit system

- 19.1 The Contractor shall develop a Work Permit system, which is a formal written system used to control certain types of work that are potentially hazardous.

A permit is needed when work place work can only be carried out if normal safeguards are dropped or when new hazards are introduced by the work. Examples of high-risk activities include but are not limited to:

- i. Entry into confined spaces
- ii. Lifting/Lowering activity
- iii. Excavation
- iv. Work in close proximity to overhead power lines and telecommunication cables.
- v. Work with electrical equipment and operations closer to live power line
- vi. Working on track & operation rooms

- 19.2A Work Permit authorization form shall be completed with the maximum duration period not exceeding one shift.

- 19.3 A copy of each Permit to Work shall be displayed, during its validity, in a conspicuous location in close proximity to the actual works location to which it applies.

20.0 Work to adjacent track

Whenever work is to be conducted in close proximity to the live track then the following measures shall need to be addressed:

- a. The rules/measures provided in the Safety Circular – 2 of O&M manual shall be followed.
- b. No persons are allowed to work onto the track unless specific authority has been given by GMRC. Adequate protection in accordance with the O&M requirements shall be followed.
- c. All persons shall wear high visibility clothing at all times.
- d. Any induction training requirements of the Track shall be strictly observed.

21.0 Lighting

The contractor shall provide sufficient site lighting, of the right type and at the right place for it to be properly effective. Lighting ought not to introduce the risk of electric shock. Therefore, 230V supplies should be used for those fittings, which are robustly installed, and well out of reach e.g. flood lighting or high-pressure discharge lamps.

22.0 Welding, Gouging and Cutting

- i) Gas cylinders in use shall be kept upright on a custom-built stand or trolley fitted with a bracket to accommodate the hoses and equipment or otherwise secured. The metal cap shall be kept in place to protect the valve when the cylinder is not connected for use.
- ii) Hose clamp or clip shall be used to connect hoses firmly in both sides of cylinders and torches.
- iii) All gas cylinders shall be fixed with pressure regulator and dial gauges
- iv) Non-return valve and Flashback arrester shall be fixed at both end of cylinder and torch.
- v) Domestic LPG cylinders shall not be used for Gas welding and Cutting purpose.
- vi) DCP or CO2 type Fire Extinguisher not less than 5 kg shall be fixed at or near to welding process zone in an easily accessible location.
- vii) Use firewatchers if there is a possibility of ignition unobserved by the operator (e.g. on the other side of bulkheads).
- viii) Oxygen cylinders and flammable gas cylinders shall be stored separately, at least 6.6 meters (20 feet) apart or separated by a fire proof, 1.6 meters (5 feet) high partition. Flammable substances shall not be stored within 50 feet of cylinder storage areas.
- ix) Transformer used for electrical arc welding shall be fixed with Ammeter and Voltmeter and also fixed with separate main power switch.
- x) Welding grounds and returns should be securely attached to the work by cable lugs, by clamps in the case of stranded conductors, or by bolts for strip conductors. The ground cable will not be attached to equipment or existing installations or apparatus.
- xi) Use a low voltage open circuit relay device if welding with alternating current in constricted or damp places.
- xii) Take precautions against the risk of increased fume hazards when welding with chrome containing fluxed consumables or high current metal inert gas (MIG) or tungsten inert gas (TIG) processes.
- xiii) Avoid being in contact with water or wet floors when welding. Use duckboards or rubber protection.
- xiv) All electrical installations shall meet the IS: 5571: 1997 and NFPA 70 for gas cylinder storage area and other hazardous areas.
- xv) The current for Electric arc welding shall not exceed 300 A on a hand welding operation.

23.0 Demolition

- i) The Contractor shall ensure that all demolition works be carried out in a controlled manner under the management of experienced and competent supervision.
- ii) All glass or similar materials or articles in exterior openings are removed before commencing any demolition work and all water, steam, electric, gas and other similar supply lines are put-off and such lines so located or capped with substantial coverings so as to protect it from damage and to afford safety to the building workers and public.
- iii) No demolishing work be performed if the adjacent structure seems to be unsafe unless and until remedial measures like sheet piling, shoring, bracing or similar means be ensured for safety and stability for adjacent structure from collapsing.
- iv) Debris / bricks and other materials or articles shall be removed by means of chutes, buckets or hoists through openings through floors or any other safe means
- v) No person other than building workers or other persons essential to the operation of demolition work shall be permitted to enter a zone of demolition and the area be provided with substantial barricades.

24.0 Excavation

- i) Where any site building worker engaged in excavation is exposed to hazard of falling or sliding material or article from any bank or side of such excavation which is more than

- one 1.5 m above his footing, such worker is protected by adequate piling and bracing against such bank or side.
- ii) Where banks of an excavation are undercut, adequate shoring is provided to support the material or article overhanging such bank.
 - iii) Excavated material is not stored at least 0.65 m from the edge of an open excavation or trench and banks of such excavation or trench are stripped of loose rocks and the banks of such excavation or trench are stripped of loose rocks and other materials which may slide, roll or fall upon a site building worker working below such bank.
 - iv) Metal ladders and staircases or ramps are provided, as the case may be, for safe access to and egress from excavation where, the depth of such excavation exceeds 1.5 m and such ladders, staircases or ramps.

25.0 Personal Protective Equipment's(PPEs)

The contractor shall provide required PPEs to workmen to protect against safety and/or health hazards. Primarily PPEs are required for the following protection:

- A. Height Work
 - i. Safety Helmet
 - ii. Full body Safety harness
- B. Electrical Operation Room
 - i. Shoes with insulated sole/Rubber Gumboots
 - ii. Electrically insulated Gloves
- C. Chemical Handling
 - i. Eye protection i.e. Safety goggles
 - ii. Chemical Gloves for hand protection

PART – III: OCCUPATIONAL HEALTH AND WELFARE

26.0 Physical fitness of workmen

The contractor shall ensure that his employees/workmen subject themselves to such medical examination as required under the law or under the contract provision and keep a record of the same.

The contractor shall not permit any employee/workmen to enter the work area under the influence of alcohol or any drugs.

27.0 Medical Facilities

27.1 Medical Examination

As per BOCW relevant rules, the contractor shall arrange a medical examination of all his employees including his sub-contractor employees employed before employing, after illness or injury, if it appears that the illness or injury might have affected his fitness and, thereafter, once in every two years up to the age of 40 and once in a year, thereafter.

27.2 Ambulance van

The contractor shall ensure that an arrangement is made with a nearby hospital for providing such ambulance van for transportation of serious cases of accident or sickness of workers to hospital promptly.

27.3 First-aid boxes

The contractor shall ensure at a work place one First-aid box provided and maintained for

providing First-aid to the workers. Every First-aid box is distinctly marked "First-aid" and is equipped with the articles specified in BOCWR.

28.0 Noise

The Contractor shall take all appropriate measures to ensure that work carried out by the Contractor and by his sub-Contractors, whether on or off the Site, will not cause any unnecessary or excessive noise which may disturb the occupants of any nearby dwellings, schools, hospitals, or premises with similar sensitivity to noise.

Noise level reduction measures shall include the following:

- i) Contractor shall ensure that all powered mechanical equipment used in the works shall be effectively sound reduced using the most modern techniques available including but not limited to silencers and mufflers.
- ii) Contractor shall construct acoustic screens or enclosures around any parts of the works from which excessive noise may be generated.

Contractor shall ensure that noise generated by work carried out by the Contractor and his sub-Contractors during daytime and night time shall not exceed the maximum permissible noise limits.

29.0 Illumination

Contractor shall take every effort to illuminate the work site as per the Employer's requirement. The contractor shall conduct a monthly illumination monitoring by lux meter for all the locations and the report shall be sent to the Employer.

30.0 Penalty

Penalty for not following safety norms:

S.no	Topic	Unsafe Act / Unsafe Condition	Deductible Amount
1	Injury and Incidence reporting	i) Fatal accidents ii) Injury accident iii) Abnormal delay in reporting accidents or wilful suppression of information about any accidents / dangerous occurrence. iv) Non-compliance of the work system.	i. Rs 5,00,000 for first fatality and Rs 10,00,000 for every subsequent fatality. ii. Rs 1,00,000 for first grievously injured person and Rs 2,00,000 for every subsequent grievously injured person (Grievous Injury as defined by Workmen Compensation Act) iii. Rs 1,00,000 for first violation and Rs 200000 for subsequent violations iv) Rs 50000 for first violation and Rs 100000 for ' subsequent violations
2	Working at Height / Ladders and Scaffolds	i) Not using or anchoring Safety belt ii) Not using Safety Net iii) Absence of life line or anchorage point to anchor safety belt. iv) Non-compliance of work system. v) Using Bamboo ladders vi) Painting of ladders vii) Improper usage (less than 1m extension above landing point, not maintaining 1:4 ratio) viii) Aluminium ladders without base rubber bush ix) Usage of broken / week ladders x) Usage of re-bar welded	Rs 10,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single Instance.

		ladders xi) Improper guardrail, toe board, barriers and other means of collective protection xii) improper working platform xiii) Working at unprotected fragile surface xiv) Working at unprotected edges.	
2	Work permit system	Noncompliance as per work system.	Rs 50,000 per first violation and Rs 1,00,000 for subsequent violations.
4	PPE	i)Not having ii)Not wearing (or) using and kept it elsewhere iii) Using damaged one iv) Using wrong type v) Using wrong colour helmet or helmet without logo vi) Using for other operation (e.g. Using safety helmet for storing materials or carrying water from one place to other)	For item i) to v) Rs 200 per single violation For item vi) Rs 5000 for first violation and Rs 10000 for subsequent Violations.

- i) if contactor fails to take above safety measures suitable penalty will be deducted from interim payment certificate by engineer in charge.