Haryana Rail Infrastructure Development Corporation Ltd

No. HORC/HRIDC/C-1/2021 Date 20.12.2021

CORRIGENDUM-2

Name of Work: C-1: Priority Section - Construction of Earthwork, Bridges, Station Buildings, Retaining Walls and other miscellaneous Works in connection with laying of New BG Double Railway line of HORC Project from Km 49.7 to Km 55.6 and its connectivity (new BG single line) from proposed Manesar Station of HORC to existing Patli Railway Station of IR Network

Reference: Specific Procurement Notice No HORC/HRIDC/C-1/2021 dated 30.11.2021

The E-tender No. 2021_HBC_198530_1 for the above-mentioned work was published on 03.12.2021. The following corrigendum is issued herewith:

APPENDIX-8000-1 [Environmental, Social, Health and Safety Management Manual] referred in Clause 1.2 of 8010 General Requirements of Environment, Social, Health and Safety (ESHS) of Section VII-1 Works' Requirements is uploaded on e-procurement portal of Haryana Government i.e. www.etenders.hry.nic.in and www.hridc.co.in. Tenderers may note that this document is part of Tender Document.

All other terms and conditions of Tender Document shall remain unchanged.

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Chief Project Manager
HRIDC, Gurugram

Appendix 8000-1: Environment, Social, Health and Safety Management Manual

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1. ESHS FRAMEWORK

1.1. General

1.1.1. The Contractor shall be responsible for Environment, Social, Health and Safety (ESHS) on the Site and any other areas being used by him for the purposes of the Contract. Each Contractor shall develop his own contract specific ESHS Management Plan, which will represent his approach to the management of ESHS activities on his work, sites under the Contract with the Employer.

1.1.2. The Contractor shall ensure that all appropriate ESHS measures are implemented throughout the execution of the Works.

1.2. Scope

1.2.1 The Environment, Social, Health and Safety Management Manual defines the principal requirement of the Employer and forms an essential part of the overall Environment, Social, Health and Safety Management System proposed to be employed by the Employer for the construction of the Project.

1.3. Definition

a) HEALTH & SAFETY – Conditions and factors that affect the well-being of employees, temporary workers, Contractor personnel, visitors and any other person at the workplace;

b) ENVIRONMENT – Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interaction;

c) ENVIRONMENT ASPECT – Element of an organization's activities or products or services that can interact with the environment;

d) ENVIRONMENT IMPACT – Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects;

e) HAZARD – Source, situation, or act with a potential for harm in terms of human injury or ill health or a combination of these;

f) Ill Health – Identifiable, adverse physical or mental condition arising from and/or made worse by a work activity and/or work-related situation;

g) Incident – Work related event (s) in which an injury or ill health (regardless of severity) or fatality occurred, or could have occurred:

- "Accident" is an incident which has given rise to injury, ill health or fatality;
- "Emergency" is an incident having potential to affect many persons or severe property damage;
- "Near Miss" is an incident or a situation with clear potential for an undesirable outcome to occur, even though no actual negative consequences happened. In other words, it is an event with potential to cause injury, property damage, environmental release or an adverse community reaction; and
- "Dangerous Occurrence" is an unplanned and undesired occurrence (incident) which has the potential to cause injury, and which may or may not cause damage to property, equipment or the environment.

h) AUDIT – Systematic examination to determine whether activities planned are implemented effectively and related results are suitable for achieving the organization policy and objectives;

i) INTERESTED PARTIES – Individual or group concerned with or affected by the ESHS Management Performance of an Organization;

j) NON-CONFORMITY – Any deviation from work standards, practices, procedures, regulations, management system performance, etc. that could either directly or indirectly lead to injury or illness, property damage, damage to workplace environment, or a combination of these;

k) OBJECTIVES – Goals in terms of ESHS Management Performance that an organization sets itself to achieve;

l) ESHS MANAGEMENT SYSTEM – Parts of overall management system that facilitates the management of the ESHS risks associated with the business of the organization. This includes the organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the organization's ESHS Management Policy;

m) ORGANIZATION – Company, operation, firm enterprise, institution or association, or part thereof, whether incorporated or not, public or private, that has its own functions and administration;

n) PERFORMANCE – Measurable results of the ESHS Management System, related to the organization's control on environment, health and safety risks, based on its ESHS Management Policy and objectives;

o) RISK – Combination of the likelihood and consequences of a hazardous event occurring;

p) RISK ASSESSMENT – Overall process of establishing the magnitude of risk and deciding whether the risk is tolerable;

q) ACCEPTABLE RISK – Risk that has been reduced to a level that can be tolerated by the organization having regard to its legal obligations and its own ESHS Policy;

r) DEVIATION – Is defined as something not in compliance with quality standard, specification or measuring requirements, or as deviations from specified procedures or way of working within production, environment, working environment (safety) or security;

s) CORRECTIVE ACTION – Action taken to eliminate the causes of an existing non-conformity, defect or other undesirable situation;

t) PREVENTIVE ACTION – Action taken to eliminate the causes of a potential non-conformity, defect or other undesirable situation to prevent occurrence or recurrences;

u) ENGINEER – Employer's Representative

v) ENVIRONMENT RELATED DEFINITIONS:

- "Waste" is unwanted surplus substance arising from the application of all construction operations and any substance or article, which is required to be disposed;

w) Abbreviation

- "Suspended Particulate Matter" is abbreviated as SPM;
- "Air Monitoring and Control Plan" is abbreviated as AMCP;
- "Noise Monitoring and Control Plan" is abbreviated as NMCP;
- "Ministry of Environment, Forest and Climate Change, Government of India" is abbreviated as MoEFCC;
- "Central Pollution Control Board" is abbreviated as CPCB;

- The use of "shall" indicates a mandatory requirement. "ESHS" means Environment, Social, Health and Safety;
- "Haryana Rail Infrastructure Development Corporation Limited" is the Employer abbreviated as HRIDC;
- "ESHS Manager" is an officer approved by the Engineer who is overall responsible for monitoring all ESHS functions prescribed in this document on behalf of the Contractor;
- "BOCWA" Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and amendment done thereafter;
- "BOCWR" Haryana Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2005 and amendment done thereafter;
- "BOCWWCA" Building and Other Construction Workers' Welfare Cess Act, 1996;
- "BOCWWCR" Building and Other Construction Workers' Welfare Cess Rules, 1998;
- "CHIEF INSPECTOR" is the Chief Inspector of Inspection of Building and Other Constructions of Government of Haryana;
- "HIRA" is Hazard Identification and Risk Assessment; and
- "The Worker" is the Building and Other Construction Worker defined by BOCWR.

1.4. Application of This Document

1.4.1 This document applies to all aspects of the Contractor's Scope of Work including Subcontractors and all other agencies. There shall be no activity associated to the Contract, which is exempted from the purview of this document.

1.5. Purpose of This Document

1.5.1 The objective of these guidelines is to ensure that adequate precautions are taken for incident/occupational illness free safe work execution as well as to avoid harmful effects on the environment and social during construction.

1.5.2 This document:

a) Describes the Environment, Social, Health and Safety interfaces between the Engineer and the Contractor.

b) Details the processes by which the Contractor shall manage Environment, Social Health and Safety issues while carrying out the work under the contract.

1.5.3 These requirements shall be read together with, ISO 45001: 2018 Occupational Health and Safety Management System and ISO 14001: 2015 Environmental Management Systems.

2. ESHS MANAGEMENT

2.1. General

2.1.1. This document defines the principal requirements to be practised at the Site at all times.

2.2. ESHS Targets and Goals

2.2.1. Following ESHS targets and goals shall be set and achieved by the Contractor/Subcontractor based on time bound work plan:

a) Zero total recordable injuries;

b) Zero non-conformances in respect of statutory laws related to Environment, Health and Welfare measures, living conditions and Safety regulations.

c) Total compliance of recording and reporting of all types of incidents.

d) 100% compliance on Safety Induction of all personnel

e) Total compliance of conducting inspections and audits as per approved ESHS Management Plan;

f) 100% incident recording and reporting;

g) 100% adherence to usage of appropriate PPEs at work;

h) Executing construction work with least disturbance to the environment, adjoining road users and traffic;

i) Minimize waste generated at sites and maximize reuse of materials;

j) Maintaining environment conditions of site as per statutory requirement of HPCB, NGT etc to avoid penalty;

k) To achieve construction site as zero discharge site as far as possible.

2.3. Contractor's Obligation to Abide by Mandatory Legislations and Standards

2.3.1. The construction works shall be undertaken in accordance with the Employer's ESHS Management Policy and Management Systems as amended from time to time provided in ESHS Management Manual.

2.3.2. The construction works shall be undertaken in accordance with all updated applicable

legislation listed below, but not limiting to:

a) Indian Electricity Act 2003 and Electricity Rules, 2005;

b) National Building Code, 2016;

c) Factories Act, 1948 and state respective factory Rules;

d) Motor Vehicles Act as amended in 1994 and The Central Motor Vehicles Rules, 1989;

e) Indian Road Congress Code IRC: SP: 55-2014 'Guidelines on Safety in Road Construction Zones';

f) The Petroleum Act, 1934 and Rules, 1976;

g) Gas Cylinder Rules, 2003;

h) Indian Explosives Act, 1884, along with the Explosives Substance Act, 1908 and the Explosives Rules, 1983;

i) Environmental and Social Legislations as listed in Clause 6.0 of this document.

2.4. Contractor's ESHS Management Policy and Plan

2.4.1. Contractor's Safety & Health Policy and Plan

2.4.2. The Contractor as per Rule 39 of the BOCW Central Rules shall formulate an Environment, Social, Health & Safety policy and display it at conspicuous places at work sites in English and Hindi so that the policy shall be understood by majority of the construction workers. The policy shall contain the following as minimum coverage:

a) The intention and commitments of the Contractor regarding Environment, Social, Health & Safety protection of the workers;

b) Organisational arrangement made to carry out the policy specifying the responsibilities at different levels of hierarchy;

c) Responsibilities of the Contractors, Subcontractor, transporter or other agencies involved in the construction work ;

d) Techniques and methods for assessment of Aspects/Impact and risk to safety and health and remedial measures;

e) Arrangement for training of workers, supervisors or other persons engaged in the construction work;

f) Other arrangements for making the policy more effective.

2.4.3. The Contractor shall revise the policy whenever any modification having implication on the Environment, Social, Health and Safety of the workers is made or any new construction work, substances, or technique are introduced which have implication on environment, health and safety of workers.

2.4.4. The Contractor shall revise and submit the ESHS Management Plan if at any time the ESHS Management Plan is insufficient in the Engineer's opinion. The Contractor shall within 7 days submit the revised ESHS Management Plan to the Engineer for review.

2.4.5. Any omissions, inconsistencies and errors in the ESHS Management Plan or the Engineer's acceptance or rejection of the ESHS Management Plan and/or supplements thereto shall be without prejudice to the Contractor's obligations with respect to site safety, industrial health and environment and shall not be excused for any failure by the Contractor to adopt proper and recognized safety practices throughout the execution of the Works. The Contractor shall adhere to the ESHS Management Plan and shall ensure, as far as practically possible, that all supervisors and subcontractors of all tiers each have a copy of the ESHS Management Plan on the Site and comply with its provisions.

2.4.6. The details of contents to be covered in the ESHS Management Plans are given in Attachment -1[Contents of ESHS Management Plan]of this document.

2.5. Designer's Role

2.5.1. The Designer's primary role includes to minimize the risk to environment, safety and health of those who are going to construct, maintain, clean, repair, dismantle or demolish the structures and anyone else like adjoining road users/public, who might be affected by the work.

2.5.2. Every temporary structure like scaffold, temporary deck, earth retaining structures etc. shall be properly designed.

2.6. Site ESHS Organisation

2.6.1. The Contractor shall appoint the required ESHS Management Personnel as prescribed in the Contract.

2.6.2. In order to effectively implement labour welfare provisions and to interact on such provisions with the Employer and the statutory authorities enforcing the labour welfare legislations, every Contractor shall employ fulltime, qualified and experienced Labour Welfare Officer.

2.6.3. **Conduct and Competency**

The Contractor shall ensure that all personnel are competent to perform the job assigned to them. In the event that the Contractor is unable to demonstrate the competency of any person whose activities can directly impact the Works' Environment, Social, Health & Safety performance, the Engineer shall remove that person from the Site without any procedural formalities.

2.6.4. **Approval from The Engineer**

The name, address, educational qualification, work experience and health condition of each ESHS personnel deployed shall be submitted to the Engineer for approval well before the start of the Works or before deployment whichever is earlier. These personnel are authorised to work only after approval of the Engineer. In case any ESHS personnel leaves the Contractor, the same shall be intimated to the Engineer within a week. Non-informing the employer will attract penalty. The Contractor shall recruit new personnel and fill up the vacancy before relieving a person. Proper handing over of all the documents shall be ensured before relieving a person.

2.6.5. The Contractor shall provide all ESHS Management Personnel with such facilities, equipment and information that are necessary to enable them to discharge their duties effectively. The minimum requirements of such facilities/equipment to be provided for ESHS Management Personnel are given in Attachment-4 [General Instruction: ESHS/GI/001].

2.7. Responsibility of ESHS Personnel

2.7.1. PICOW (Person In-Charge of Work)

a) "Person in Charge of Work" under whose supervision, the Workers operate as per approved method statement and ESHS Management Manual.

b) PICOW shall lead/supervise and direct the Workers to undertake the work in a safe manner.

c) Each Request for Inspection (RFI) must indicate the name of PICOW for that work.

2.7.2. Responsibility of a PICOW

PICOW should ensure that:

a) A safe system of work is adopted;

b) Everyone in the group is briefed and understand the system of work before work starts;

c) The current system of work is altered whenever there is any change in conditions or circumstances make it necessary and ensure that everyone understands the new arrangements; and

d) The work is stopped and everyone moved to a position of safety immediately, should there be any doubt whether the work may safely continue.

2.7.3. All ESHS Management Personnel are to report to the ESHS Manager who shall always report directly to the Contractor's Project Manager. Their primary role is to oversee environment, social, health and safety aspects at work site. The Engineer shall always monitor adherence to this procedure. In case of non-adherence penalty shall be levied.

2.8. ESHS Committee

2.8.1. The Contractor shall form Site ESHS Committee within 60 days of award of the Contract and notification regarding the same shall be communicated to the members.

2.8.2. The Terms of Reference for the Site ESHS Committees shall be as follows:

a) To oversee implementation of the Contractor's Environment, Social, Health and Safety policies and practices;

b) To monitor the adequacy of the Contractor's ESHS Management Plan and ensure its implementation;

c) To review ESHS training;

d) To review the Contractor's ESHS monthly reports;

e) To identify probable causes of accident and unsafe practices in construction work and to suggest remedial measures;

f) To stimulate interest of the Workers in environment, health and safety by organizing environment/safety week, safety competition, talks and film-shows on environment/safety, preparing posters or taking similar other measures as and when

required or as necessary;

g) To go around the Site with a view to check unsafe practices and detect unsafe conditions and to recommend remedial measures for their rectifications including first-aid medical and welfare facilities;

h) Committee team members should perform a site inspection before every committee meeting and to monitor ESHS inspection reports;

i) To bring to the Notice of the Engineer hazards associated with use, handling and maintenance of the equipment used during the course of construction work;

j) To suggest measures for improving environment, social, health and safety in construction work at the Site;

k) To investigate the health hazards associated with handling different types of explosives, chemicals and other construction materials and to suggest remedial measures including personal protective equipment; and

l) To review the last ESHS committee meeting minutes and the remedial measures taken for Non-Compliance.

Chairman	Project Manager
Secretary	ESHS Manager (Will be nominated by Project Manager)
Members	i) Contractor's ESHS staff. ii) Labour Welfare Officer; iii) In -charge of Plant and Machinery & Site Electricals; iv) In-charge of Special Work Operations (e.g. bridge, viaduct, and tunnel, etc.); v) In-charge of Stores; vi) Subcontractor's representative; and vii) Workers' representatives;
Engineer's Representatives	To be nominated by the Engineer

2.8.3. **Minimum time between two monthly ESHS Committee meetings**

A minimum period of 21 days shall be maintained between any two ESHS monthly committee meetings.

2.8.4. **Agenda**

The Secretary shall circulate the agenda of the meeting at least seven working days in advance of the scheduled date of the meeting to all members as well as to the Employer.

2.8.5. The agenda should broadly cover the following:

a) Chairman's overview of ESHS Management Performance;

b) Confirmation of minutes of last meeting;

c) Previous month ESHS statistics;

d) Incident and accident investigation/Dangerous occurrence/Near miss report;

e) Site ESHS inspection and compliance report;

f) The Contractors' ESHS issues;

g) Report from the Employer and Engineer;

h) Non-compliances raised by Engineer/Statutory Authorities;

i) Report and compliance of GRC; and

j) Any other concern.

2.8.6. In case of station and other contiguous areas where more than one main Contractor is working together, the Engineer shall instruct the other Contractors to join for the monthly ESHS committee meeting of the main civil Contractor, to discuss and decide about the common provision of safety, security, lighting, toilet, drinking water etc. and sharing the maintenance cost of the same etc.

2.8.7. The Minutes of the Meeting shall be prepared as per the format provided and sent to all members within 2 working days by mail. Minutes of ESHS Committee Meeting shall also be displayed on the notice board for wider publicity to all concerned.

2.8.8. The chairman shall inform the members of any outstanding issues in the meeting and in case of repeated offence/ non-compliance by some members or other Subcontractors shall impose suitable disciplinary action including provisions of monetary penalty as per Clause 7. [Financial Deduction/Withholding].

2.8.9. In addition, there shall be a Project ESHS Committee whose composition shall be as follows:

Chairman	Project Director
Secretary	ESHS Manager (Will be nominated by PD)
Members	i) Deputy Project Director/Civil ii) Project Manager along with ESHS manager from each Contract Package iii) ESHS experts of GC
Employer's Representatives	Chief Project Manager

2.8.10. Project ESHS Committee shall also meet once a month after the meeting of Site ESHS Committee. Project ESHS Committee shall oversee the implementation of ESHS Policy and ESHS Management Plan of the Contractor in execution of the Project. This Committee shall also redress the grievances/complaints/representations received from public, other stakeholders and employees of the Contractor and Subcontractors. The agenda of the meeting shall be circulated by the Secretary of the Committee after taking approval from the Project Director.

2.9. ID Card and Safety Induction

2.9.1. The Contractor shall ensure that all personnel working at the Site receive an induction ESHS training immediately on the first day of joining explaining the nature of the work, the hazards that may be encountered during the site work and the particular hazards attached to their own function within the operation. Personnel shall only be deployed at site once he/she has completed ESHS induction. The training shall cover the contents as given in Clause 8, Attachment-4[General Instruction: ESHS/GI/002].

2.9.2. All personnel shall be issued a photo identity card as per the format given in Clause 8, Attachment-4[General Instruction: ESHS/GI/003].

2.9.3. The Contractor shall also issue a Personnel Pocket ESHS Booklet in a language known to the Workers, which provides information on ESHS measures to be adopted during the work activities and emergency procedures that all personnel are required to know and need to follow. The Contractor shall ensure that this booklet is distributed and its contents explained to all personnel working at the site .

2.10. Other ESHS Training

2.10.1. The Contractor shall organize the ESHS training to engage managers, supervisors and

other personnel in behavioural change and improve safety performance. The contents of ESHS training to managers/supervisors as given in Attachment-4[General Instruction: GI/005].

2.10.2. The Contractor shall provide a training/workshop on ESHS to all its workers/staff/employees/subcontractors of at least 2 days. It shall be completed in various modules and each employee/worker shall have a record of completing all modules.

2.10.3. On-the spot practical skill development training on height safety including scaffold safety, crane safety, welding safety, electrical safety, and traffic safety for marshals shall also be conducted.

2.10.4. Every employee including workman shall take a safety oath followed by toolbox talk every day.

2.10.5. All vehicles and machine drivers including heavy work vehicle and machine operators shall be trained on defensive driving with necessary certificate or license.

2.11. ESHS Inspection

2.11.1. The Contractor shall evolve and administer a system of conducting ESHS inspection and other risk management analysis on a periodical basis.

2.11.2. The purpose of ESHS inspection is to identify any deviation in construction activities and operations, machinery, plant and equipment and processes against the ESHS Management Plan and its supplementary procedures and programs.

2.11.3. The Contractor shall initiate a weekly joint site ESHS Management inspection with the Engineer and report shall be generated on the same day with the corrective action and accepted target date (within a week) by the Engineer.

2.11.4. The Compliance of the joint inspection "Non-Conformance" shall be witnessed/accepted by the Engineer.

2.11.5. The Contractor shall evolve and administer a system of conducting ESHS inspection and other risk management analysis on a periodical basis.

2.11.6. Following ESHS inspections program shall be adopted:

a) Planned general inspection;

b) Routine inspection;

c) Specific inspection; and

d) Other inspection.

2.11.7. Planned general inspections are performed at predetermined intervals and it usually involves the representation from both the Contractor and the Engineer.

Inspections that will be classified under this inspection program are:

a) Monthly Contractor and subcontractor's site safety committee inspection;

b) Weekly safety inspection by construction supervisors (the Contractor and the Subcontractor); and

c) Daily safety inspection by the Contractor site ESHS team.

2.11.8. Routine inspections are often referring to the inspection of the Site, equipment and temporary structures performed by the Site and equipment operators and temporary structure erectors.

Inspections that will be classified under this inspection program are:

a) Daily inspection of plant and equipment by operators;

b) Weekly inspection of scaffold by scaffolding supervisors;

c) Monthly Inspection of electrical hand tools by competent electrical supervisors;

d) Quarterly inspection of temporary electrical systems by competent electrical supervisors; and

e) Half-yearly inspection of lifting machinery, lifting appliances, equipment and gears by Govt. approved competent persons.

f) Quarterly inspection of lifting gears, tools tackles and appliances.

g) Quarterly colour coding of lifting gears, tools & tackles. The recommended colour coding for the 4 quarters of the years shall be as under

i) January – March: GREEN
ii) April – June: YELLOW
iii) July – September: BLUE
iv) October – December: WHITE

2.11.9. The list mentioned above is not exhaustive. The Contractor may add additional categories. The ESHS Manager will ensure that a system of routine inspections is carried out periodically to all plants, equipment, powered tools and any other temporary structures that will pose a hazard to operators and workmen.

2.11.10. **Specific Inspection**

Specific inspections are performed on activities without a predetermined date. Competent supervisors usually perform inspections for ensuring an activity whether it is executed in accordance to a general set of rules; Method Statement submitted or developed procedures.

The following are examples that will be commonly performed as required on the Site:

a) Inspection performed before a heavy lifting operation;

b) Inspection performed before and after the entry of person into a confined space;

c) Inspection performed before and after a welding and gas cutting operation;

d) Inspection of formwork before concreting by formwork erector.

The list mentioned above is not exhaustive. The Contractor shall ensure that a competent supervisor inspects all high-risk processes and activities.

2.11.11. Other inspections include the following:

a) Mandatory inspections by Labour Department of Government of Haryana; and

b) HRIDC site ESHS management team.

c) Inspections by Central Pollution Control Board, Haryana Pollution Control Board, Ministry of Environment and Forest and Climate Change, National Green Tribunal etc.

2.11.12. The Contractor shall prepare all required safety inspection checklist for all activity operations and equipment. Checklists will be prepared based on the Indian Safety Standards, Rules and Regulations and the Works requirements.

2.11.13. All inspection records and reports will be properly kept and filed for audit purpose. Inspection reports of planned general inspection and routine inspection will be used for discussion during safety committee meetings.

2.12. ESHS Audit

2.12.1. The purpose and scope of ESHS Audit is to assess potential risk, liabilities and the degree of compliance of the ESHS Management Plan and its supplementary procedures and programs against applicable and current ESHS legislation regulations and the Works requirements.

2.12.2. The Contactor's project manager shall hold the ultimate responsibility in ensuring implementation of ESHS audit program during the construction work.

2.12.3. Monthly Audit Rating Score (MARS)

2.12.4. Monthly Audit Rating Score (MARS) will be performed once in a month. A team consisting of the Contractor's project manager and the Engineer's representative based on the pre-designed score-rating format will conduct it.

2.12.5. This Monthly ESHS Audit Rating Score (MARS) report will enable the Engineer to evaluate the general compliance by the Contractor with the Conditions of Contract, and the ESHS Management Plan. A Minimum Compliance level to achieve 75% overall Audit Rating is essentially required. Falling this, the Engineer will take punitive action which includes non-processing of running account bills.

2.12.6. The Contractor's project manager accompanied by the Engineer's representatives shall carry out the Audit. The Contractor's senior manager and the ESHS in-charge should also be invited to attend.

2.12.7. **Timing**

The Monthly Audit Rating Score (MARS) should be conducted at least 7 days prior to the scheduled date of monthly ESHS Committee Meeting.

2.12.8. **Evaluation**

The numerical scoring has been weighed on a 1-10 scale. The audit team will use their observations noted in evaluating the points to be awarded against each of the elements of the audited section. Wherever some topics and sub-topics are not applicable the score rating need not be given. The overall audit ratings shall be achieved by:

$$\text{Overall Audit rating} = \frac{\text{Actual Score Achieved}}{\text{Maximum Possible Score}} \times 100$$

The criticality of the required actions for the respective sections of the Audit will be classified as:

S.No.	Score	Description	Action
1	< 60%	Immediate	Require the Contractor to rectify within 24 hours
2	< 75%	Improvement Necessary	The Contractor rectification within 7 days and confirmed in writing to the Engineer
3	< 90%	Improvement Desirable	The Contractor rectification within 1 month and confirmed in writing to the Engineer

2.12.9. **Report**

A copy of each Audit Report will be sent to the Engineer and to all subcontractors, with whom it will then be discussed in detail at the monthly ESHS Committee Meeting to ensure that any corrective actions are agreed upon.

2.12.10. **External ESHS Audit**

External ESHS Audit is to be conducted by the external agencies that are competent with ISO qualified auditors with the prior approval of the Engineer.

a) **Areas of Competence of Audit** Team

i) The Audit team shall have practical understanding of BOCWR/A statutory requirements on health/medical and welfare of workmen, construction hazards and its prevention and control, traffic management, electrical safety, rigging, safety of construction equipment and environment and social management.

ii) Audit shall be conducted as per the guidelines of ISO, ILO and national standards. Audit report shall also be presented as per the formats given in the standards; and

iii) External ESHS Audit shall be conducted on a quarterly basis throughout the currency of the Contract.

b) **Targets of ESHS Audit:**

The contents and coverage of the audit shall include the following items:

i) ESHS Management:

- ESHS Organization;
- ESHS Policy and Plan;
- ESHS committee;

- ESHS orientation;
- ESHS training;
- ESHS communication and motivation;
- ESHS submittals to the Employer;
- ESHS promotional and awareness program;
- Incident reporting &investigation;
- Onsite/offsite emergency preparedness plan;
- Hazard identification and risk assessment;
- Implementations of work permit system.

ii) Technical:

- Work Method Statement;
- Operational control procedures/ Safe operating procedures;
- Working at height;
- Hand tools and power tools;
- Electrical safety;
- Fire prevention and control;
- Housekeeping;
- Overhead protection;
- Slipping, tripping, cutting, drowning and falling hazards;
- Lifting appliances and gear, tools and tackles;
- Lifting and launching operation;
- Construction plant and machinery;
- Machine and area guarding;
- Material handling;
- Hotwork;

- Demolition;
- Excavation and tunnelling;
- Work permit system;
- Traffic management;
- Chemical handling;
- Dangerous and harmful Environments;
- Maintenance matrix of mechanical and electrical machines / equipment;
- Working on or under water;
- Working near or under high tension line;
- Personal protective equipment;
- Visitors at Site;
- Occupational health and welfare measures;
- All statutory forms, returns under various statutes;
- First-aid and medical facilities;
- Welfare measures; and
- Environmentaland Social management.

c) **Audit Documents:**

The Contractor shall make the below itemized documents available for review by the Audit team;

a) ESHS Policy;

a) ESHS Management Manual;

b) ESHS Rules and Regulation;

c) ESHS Organization chart;

d) Annual ESHS objectives/programs;

e) Accident/near miss statistics and analysis;

f) ESHS training program/records for all personnel;

g) Operating manuals and maintenance manual of all equipment;

h) Safe worthiness certificates of all lifting appliances and gears;

i) Medical fitness record for all personnel;

j) Risk identification, assessment and control details;

k) Environmental and Social management reports;

l) Emergency management records including mock drill;

m) Housekeeping inspection records;

n) Minutes of ESHS committee meetings;

o) Calibration and testing records;

p) Safety budgets;

q) Records of previous audits;

r) Safety inspection records;

s) First Aid, medical facilities and other welfares measures;

t) Maintenance procedure of plant &machinery;

u) Records of Industrial hygiene surveys (noise, ventilation, and illumination level, airborne and toxic substances, explosive gases).

d) **Reporting**

Audit report shall be prepared and directly sent to the Engineer within 7 days of conducting the audit.

e) **Report Contents:**

a) Executing Summary - based on the finalized checklists as written the findings to the Engineer by the audit team members, the audit leader will compile a concise and accurate summary of observations and findings;

b) Introduction- this will contain basic information regarding the facilities or organization audited, the specific audit dates (inclusion of those for preparation and post-audit activities);

c) Principal Positive Findings - This will contain the summary of positive aspects as observed by the auditors. It will also contain highlights of those issue, which may warrant dissemination as best practice regarding methodology used or achievement;

d) Audit Findings - All audit findings as detailed in the audit checklists shall be grouped together as priority 1 and 2 as detailed below in a separate listing:

a) Priority 1: Actions to rectify gaps or weakness should generally be implemented within two-weeks' time if risk potential is high or unacceptable; and

b) Priority 2: Actions should be generally implemented or rectified with a maximum of 3- 4 weeks, if not rectified would create a likelihood of minor injury or business loss.

f) **Conformity Report Action to the Engineer:**

a) The auditor shall inspect the Site after 14 days of conducting initial audit for checking the adequacy of implementation of items maintained under priority 1 by the Contractor and shall submit a Conformity/Non-conformity Report to the Engineer;

b) The auditor shall again inspect after 28 days of conducting initial audit for checking the adequacy of implementation of items mentioned under priority 2 by the Contractor and shall submit a Conformity/Non-conformity Report to the Engineer; and

c) In case of non-conformity of items mentioned by auditor, the Engineer shall take necessary steps including stoppage of work and or imposing any penalty for getting the item implemented.

d) If the Contractor fails to conduct the External ESHS Audit in time, the Engineer shall get it done. All expenses related to the external ESHS audits shall be borne by the Contractor.

2.13. ESHS Communication

2.13.1. The Contractor shall make every effort to communicate the ESHS Management measures through posters campaigns/billboards/banners/glow signs being displayed around the Site as part of the effort to raise ESHS awareness amongst the work force. Posters should be in Hindi, English and other suitable language deemed appropriate. Posters/billboards/ banners/glow signs should be changed at least once in a month to maintain the impact.

2.13.2. The Contractor shall also observe important days as listed in Attachment-4[General Instruction: ESHS/GI/006] and printing and displaying safety signage and posters as listed in Attachment-4[General Instruction: ESHS/GI/007].

2.14. ESHS Submittals

2.14.1. The Contractor's ESHS Management shall send the following reports to the Engineer periodically in soft copy:

a) Daily reporting of total number of workmen;

b) Monthly ESHS Reports;

c) Minutes of ESHS Committee meeting;

d) ESHS inspection and compliance reports; and

e) ESHS audits reports;

- Monthly Audit Rating Score (MARS) reports;
- External ESHS audits;

2.14.2. The Contractor shall prepare a Monthly ESHS Report consisting of the following within 7th of next month to the Engineer:

a) Monthly man-hour details as specified in the ESHS Management Plan;

b) Monthly accident/incident details as specified in the ESHS Management Plan;

c) ESHS committee details;

d) ESHS inspection and compliance report;

e) ESHS internal audit details.;

f) ESHS communication activities undertaken in the month indicating the number of posters displayed and balance availability in stock;

g) Monthly Environment (including air, noise, water and soil testing results) and Social Report;

h) Graphical representation of monitored results over past four reporting periods;

i) Details of interactions with regulators (e.g. Pollution control Board, Forest Department etc.) including dates, subjects, outcomes (report the negative if none);

j) Details of Clearance/ Permission//Permit obtained;

k) Compliance status for conditions of all relevant clearances/permissions/

consents/permits for the Work, including quarries, etc.;

l) Tree felling, transplanting and compensatory planation details;

m) Details of consumption of construction material, energy and water;

n) Details of different types of waste and scrap generated during the month and sold to authorised recyclers;

o) Summary of complaints, results of investigations and follow-up actions;

p) Gender: Number of female workers, percentage of female workforce, gender issue raised and dealt with;

q) HIV/AIDS: Provider of health services, information& training;

r) GBV/SEA: Details of training conducted;

s) Grievances: List of grievances received in the reporting period and unresolved past grievances by date received, complaint how received, to whom referred to for action, resolution and date (if completed), date of resolution of community grievances if any.

t) Toolbox talks details;

u) PPE details: Quantity purchased, issued to the workmen and stock available;

v) Details on IP 44 panel boards, lighting poles, welding and cutting equipment, Ladders, Hoists, Tools & Tackles;

w) Monthly lux meter study results;

x) Housekeeping;

y) Barricade maintenance details;

z) No of critical excavations;

aa) Health and welfare activities;

bb) ESHS activities planned for next month.

Formats in which information to be given for monthly Environment and Social aspects are given in Attachment 4 [General Instruction: ESHS/GI/008]

2.15. Accident Reporting and Investigation

2.15.1. All accidents and dangerous occurrences shall immediately be informed through message to the Engineer and the Employer. This will enable the Engineer to

reach to the scene of accident/dangerous occurrences to monitor/assist any rescue work and/or start conducting the investigation process so that the evidences are not lost.

2.15.2. Reports of all accidents (fatal/injury) and dangerous occurrences shall also be sent within 24 hours by the Contractor.

2.15.3. No accident/dangerous occurrences are exempted from reporting to the Employer.

2.15.4. Any wilful delay in verbal and written reporting to the Employer and Engineer shall be penalized as per Clause 7. [Financial Deduction/Withholding].

2.15.5. In addition to the above verbal and written reporting to the Employer and Engineer, as per Rule **276** of **HBOCWR**, notice of any accident to a worker at the Site that:

a) Causes loss of life; or;

b) Disables a worker from working for a period of 48 hours or more immediately following the accident; shall forthwith be sent by telegram, telephone, fax, or similar other means including special messenger within 4 hours in case of fatal accidents and 72 hours in case of other accidents, to:

i) The Assistant Director, Industrial Safety and Health having jurisdiction in the area in which the establishment in which such accident or dangerous occurrence took place is located. The Assistant Director, Industrial Safety and Health shall be the authority appointed under section 39 of the Act;

ii) Board with which the building worker involved in accident was registered as a beneficiary;

iii) Chief inspector ; and

iv) The next of kin or other relative of the Worker involved in the accident.

2.15.6. Further, notice of any accident shall be sent in respect of an accident which:

a) Causes loss of life; or;

b) Disables the injured worker from work (for a period of more than 10 days) to;

i) The Officer-in-charge of the nearest police station;

ii) The District Magistrate or, if the District Magistrate by order so desires to;

iii) The Sub-Divisional Magistrate.

2.15.7. In case of an accident-causing minor injury, first-aid shall be administered, and the injured worker shall be immediately transferred to a hospital or other place for medical treatment.

2.15.8. Where any accident-causing disablement that subsequently results in death, notice in writing of such death, shall be sent to the authorities within 72 hours of such death.

2.15.9. The following classes of dangerous occurrences shall be reported to the inspector having jurisdiction, whether any disablement or death caused to the Worker, namely:

a) Collapse or failure of lifting appliances, or hoist, or conveyors, or similar equipment for handling of building or construction material or breakage or failure of rope, chain or loose gears; or overturning of cranes used in construction work;

b) Falling of objects from height;

c) Collapse or subsidence of soil, tunnel, pipelines, any wall, floor, gallery, roof or any other part of any structure, launching girder, platform, staging, scaffolding or means of access including formwork;

d) Explosion of receiver or vessel used for storage of pressure greater than atmospheric pressure of any gas or any liquid or solid used as building material;

e) Fire and explosion causing damage to any place on the site where the Workers are employed;

f) Spillage or leakage of any hazardous substance and damage to their container;

g) Collapse, capsizing, toppling or collision of transport equipment; and

h) Leakage or release of harmful toxic gases at the Site.

2.15.10. In case of failure of launching girder, lifting appliance, loose gear, hoist machinery and transport equipment at the site, such appliances, gear, hoist, machinery or equipment and the site of such occurrence shall, as far as practicable, be kept undisturbed until inspected by the authorities.

2.15.11. Every notice given for fatal accidents or dangerous occurrences shall be followed by a written report to the concerned Authorities under Section 39 of BOCWA and the Chief Inspector of Government of Haryana in the specified Form **XLVI** of the **HBOCWR.**

2.15.12. Actions to be taken post incident/accident:

a) In case any incident/accident happens at site leading to injury to the worker, the worker/s is/are required to be taken to the nearest hospital immediately;

b) Project Manager/ESHS Manager/Labour Welfare Officer of the Contractor

needs to report the incident to the Engineer immediately without fail for all the death cases including natural deaths;

c) In case of fatal accident, doctor from the nominated hospital is the only authorized person to declare the death of the worker. It is not to be decided suo-moto by any other person. FIR should be registered for all the fatal cases which happen at the Site/labour camp;

d) Post Mortem of the dead body is mandatory in all the death cases i.e. whether it is natural or due to any incident / accident;

e) Family members of the injured / deceased worker are to be informed immediately;

f) In case of fatal accident, the dead body is to be handed over to the family members. Arrangement of sending the dead body to the native place shall be made by the contractor including cash payment for meeting out last rites expenses as per Rules;

g) Fatal accident report is to be sent to State Labour Authority in Form EE (as per workmen's compensations act) within seven days and to the Licensing Authority in Form XLVI within 24 hours of the incident/accident;

h) Workmen's Compensation dues are to be deposited with the Employee's Compensation Commissioner within 30 days of the death or the period of notice served by the Employee's Compensation Commissioner;

i) Copy of all the documents deposited with any labour authority, FIR, Post Mortem, Medical Reports etc. shall be submitted to the Engineer in duly approved Labour Welfare Fund (LWF) Form;

j) The Contractor shall be liable for getting disbursement of Provident Fund benefits, compensation under Employee compensation Act, benefits of ESI Act to the workman/dependents of the deceased workman. The Contractor shall also provide accommodation and transportation to dependents of the deceased workman or to the disabled workman who come for settlement of terminal claims.

2.15.13. Accident Investigation:

a) Investigations shall be conducted in an open and positive atmosphere that encourages the witnesses to talk freely. The primary objective is to ascertain the facts with a view to prevent future and possibly more serious occurrences;

b) Accidents and dangerous occurrences which result in death, serious injury or serious damage must be investigated by the Contractor immediately to find out

the cause of the accident/occurrence so that measures can be formulated to prevent any recurrence; and

c) Near misses and minor accidents should also be investigated by the Contractor as soon as possible as they are signals that there are inadequacies in the ESHS Management System.

2.15.14. Procedure of Incident Investigation

It is important after any accident or dangerous occurrence that information relating to the incident is gathered in an organized way. The following steps shall be followed:

a) Take photographs and make sketches;
b) Examine involved equipment, work piece or material and the environmental conditions;
c) Interview the injured, eye-witnesses and other involved parties;
d) Consult expert opinion where necessary; and
e) Identify the specific Contractor or subcontractor involved.

2.15.15. Having gathered information, it is then necessary to make an analysis of incident:

a) Establish the chain of events leading to the accident or incident;
b) Find out at what stage the accident took place;
c) Considering all possible causes and the interaction of different factors that led up to the accident and identify the most probable cause, the cause of an accident should never be classified as carelessness; and
d) The specific act or omission that caused the accident must be identified.

2.15.16. The next stage is to proceed with the follow-up action:

a) Report on the findings and conclusions;
b) Formulate preventive measures to avoid recurrence; and
c) Publicize the findings and the remedial actions taken.

2.15.17. The Engineer's Independent Incident Investigation

In case of fatal/dangerous occurrence, the Engineer shall also conduct independent investigation. The Contractor and his staff shall extend necessary co-operation and testify about the accident.

2.15.18. The Contractor shall take every effort to preserve the scene of accident till the Engineer completes the investigation.

All persons summoned by the Engineer in connection to witness recording shall obey the instructions without delay. Any wilful suppression of information by any person shall be removed from the site immediately and/or punished as per Clause 7. [Financial Deduction/Withholding].

2.16. Emergency Preparedness Plan

2.16.1. The Contractor shall prepare as required under BOCWR, an Emergency Response Plan for the Site as a part of the Contractor ESHS Management Plan. The plan shall integrate the emergency response plans of the Contractor and all other Subcontractors. The Emergency Response Plan shall detail the Contractor's procedures, including detailed communication arrangements, for dealing with all emergencies that could affect the Site. The plan shall address items such as injury, sickness, evacuation, fire, chemical spillage, severe weather and rescue.

2.16.2. The Contractor shall ensure that the Emergency Response Plan is prepared to deal with emergencies arising out of, but not limited to:

a) Fire and explosion;
b) Collapse of lifting appliances and transport equipment;
c) Collapse of building, sheds or structure etc.;
d) Gas leakage or spillage of dangerous goods or chemicals;
e) Bomb threatening, Criminal or Terrorist attack;
f) Drowning of workers; and
g) Landslides getting workers buried, floods, earthquake, storms and other natural calamities etc.

The above list is not exhaustive and other emergencies can also be included.

2.16.3. Arrangement shall be made for emergency medical treatment and evacuation of the victim in the event of an accident or dangerous incident occurring, the chain of command and the responsible persons of the Contractor with their telephone numbers and addresses for quick communication shall be adequately publicized and conspicuously displayed in the workplace.

2.16.4. The Contractor shall require to tie-up with the hospitals and fire stations located in the neighbourhood for attending to the casualties promptly and emergency vehicle kept on

standby duty during the working hours for the purpose.

2.16.5. The Contractor shall conduct an onsite emergency mock drill once in every month for all his workers and his sub-Contractor's workers.

2.16.6. It shall be the responsibility of the Contractor to keep the Local Law and Order Authorities informed and seek urgent help to mitigate the consequences of an emergency. Prompt communication to the Employer and Engineer, through telephonically initially and followed by a written report, shall be made by the Contractor.

2.17. Experts/Agencies for Environment, Social, Health & Safety Services

2.17.1. The Contractors may utilise the services of experts/agencies empanelled for the purpose of training, audit and any other ESHS services with prior approval of the Engineer. This approval can be withdrawn by the Engineer at any time if the quality of output of the agency is found not satisfactory.

3. LABOUR PROTECTION

3.1. General

3.1.1. The Contractor shall comply in full of the project Workplace Policy as described in Attachment-2 [Work Place Policy on HIV/AIDS, Prevention & Control] and Attachment XX [Covid 19 policy].

3.2. Engagement of Staff and Labour

3.2.1. The Contractor shall ensure that the employees deployed by him in the premises of the Employer are physically and mentally fit and do not have any criminal record.

3.3. Payment of Minimum Wages

3.3.1. The Contractor shall ensure payment of at least the minimum wages as prescribed and applicable from time to time under the Minimum Wages Act, 1948 in the presence of an authorised representative of the Engineer and shall maintain proper records of their timely disbursement. These records shall be preserved for a period of at least 3 years and made available even after the Contract is over for any verification by the statutory authorities.

3.4. Conditions of Labour

3.4.1. The Contractor shall observe conditions of labour that are no less favourable than those established for the relevant trade or industry.

3.4.2. During the work, the Contractor shall afford all employees all basic rights enumerated in the conventions of the International Labour Organisation, including freedom of association, right to freedom from forced labour, and right to freedom from discrimination based on race, colour, sex, religion, political opinion and social origin.

3.4.3. The Contractor shall ensure coverage of his employees under the Employees Provident Fund and Miscellaneous Provisions Act, 1952 and the Employees State Insurance Act, 1948 via independent code numbers allotted to them by the Central Provident Fund Organisation and Employees State Insurance Corporation respectively.

3.4.4. The Contractor shall insure all his employees under Group Personal Accident Insurance scheme through a recognised and registered insurance company.

3.5. Labour Laws

3.5.1. The Contractor shall ensure that all his employees and the Subcontractors obey applicable following laws and regulations, including those concerning safety at work.

a) Minimum Wages Act, 1948;
b) Payment of Wages Act, 1936;
c) Equal Remuneration Act, 1976;
d) Employees Provident Fund and Miscellaneous Provisions Act, 1952;
e) Payment of Gratuity Act, 1972;
f) Employees State Insurance Act, 1948;
g) Payment of Bonus Act, 1965;
h) Maternity Benefit Act, 1951;
i) Industrial Disputes Act, 1947;
j) Trade Unions Act, 1926;
k) Child Labour (Prohibition and Regulation) Act, 1986;
l) Building and Other Construction Workers (Regulation of Employment of Service) Act, 1996;
m) Haryana Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2005;
n) Building and Other Construction Workers Welfare Cess Act, 1996;
o) Building and Other Construction Workers Welfare Cess Rules, 1998;
p) The Contract Labour (Regulation and Abolition) Act, 1970;
q) Inter State Migrant Workmen's (Regulation of Employment and Conditions of Service) Act, 1979;
r) Haryana Major Accident, Hazard Control Rules, 2009;
s) Workmen's Compensation Act. 1923;
t) Factories Act, 1948;
u) Mines Act, 1952; and

3.5.2. The Contractor shall comply with all other statutory requirements, rules, regulations and notifications in relation to employment of his staff and workers that may be issued from time to time by the concerned government authorities.

3.6. Working Hours

3.6.1. No work shall be carried out beyond the statutory limit given under BOCWA, 1996.

3.6.2. No work shall be carried out outside the normal working hours stated in the Contract unless otherwise:

a) The Engineer gives his consent in writing for additional work; and

b) The work is unavoidable or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately inform the Engineer.

4. SAFETY GENERAL

4.1. General

4.1.1. The following standards whichever is more stringent shall be applicable:

a) The BOCW Acts 1996 and the Haryana BOCW Rules 2005 framed there under;

b) Other relevant National Legislations & IS Codes.

4.2. Housekeeping

4.2.1. General Housekeeping shall be carried out by the Contractor and ensured always at the Site, Construction Depot, Batching Plant, Labour Camp, Stores, Offices and Toilets/Urinals.

4.2.2. Full height fence, barriers, barricades etc. shall be erected around the Site to prevent the surrounding from excavated soil, rubbish etc., which may cause inconvenience to and endanger the public. The barricade especially those exposed to public shall be aesthetically maintained by regular cleaning and painting as directed by the Engineer. These shall be maintained in one line and level.

4.2.3. 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.

4.2.4. Lumber with protruding nails shall be bent / removed and properly stacked.

4.2.5. Flammable chemicals / compressed gas cylinders shall be safely stored.

4.2.6. Unused/surplus cables, steel items and steel scrap lying scattered at different places within the working areas shall be removed to identified locations(s).

4.2.7. All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from workplace to identified location(s).

4.2.8. Empty cement bags and other packaging material shall be properly stacked and removed.

4.2.9. The Contractor shall ensure that all his sub-Contractors maintain the site reasonably clean through provisions related to housekeeping. All surplus earth and debris are removed/disposed of from the working areas to officially designated dumpsites. Trucks carrying sand, earth and any pulverized materials etc. to avoid dust or odour impact shall be covered while moving. The tyres of the trucks leaving the site shall be cleaned

with water, wherever the possibility of spillage on carriageways meant for regular road traffic exists

4.2.10. Water logging or bentonite/polymer spillage on roads shall not be allowed. If bentonite/polymer spillage is observed on road endangering the safety of road users, the Contractor shall be penalized as per Clause 7. [Financial Deduction/Withholding].

4.2.11. No parking of trucks/trolleys, cranes and trailers etc. shall be allowed on roads, which may obstruct the traffic movement.

4.2.12. Roads shall be kept clear and materials like pipes, steel, sand, boulders, concrete, chips and brick etc. shall not be allowed on the roads to obstruct free movement of road traffic.

4.2.13. Proper and safe stacking of material are of paramount importance at yards, stores and such locations where material would be unloaded for future use. The storage area shall be well laid out with easy access and material stored/stacked in an orderly and safe manner.

4.3. Working at Height

4.3.1. Working at height means work in any place, including a place at or below ground level.

4.3.2. The Contractor shall ensure that work at height is properly planned, appropriately supervised and carried out in a safe manner and without any appreciable risk. Appropriate care shall be taken during bad weather.

4.3.3. Adequate protection in the form of working platform with railing, toe board, safe access, safety net, roof ladder etc. shall be provided. Where fall hazards cannot be eliminated, use fall-arrest systems while erecting, modifying, and dismantling scaffolds.

4.3.4. A trained and certified person shall check working platform, railing, toe board, safe access, safety net, roof ladder etc. after erection and once in a week. A certificate shall be tagged on this equipment.

4.3.5. Employees involved in the erection, dismantling, moving, repairing, etc., of scaffolding and also workers who perform work on a scaffold shall receive training from a competent person. The purpose of the training is to recognize any hazards associated with the work.

4.3.6. When the height of a scaffold exceeds three times of the smallest width of the base, secure it to the building or structure at every other lift and every 9.0 m horizontally. The

scaffold and scaffold working platform with handrails approximately 1.0 m high, mid rails, and toe boards, all secured rigidly by both ties and braces to prevent movement. Working platforms should be completely decked with safety planks, manufactured scaffold decking, or metallic planks.

4.3.7. Only metal frame working scaffold is permitted. Steel stairs are used as a means of raising and lowering the metal frame working scaffold, , except for special cases. It is prohibited to directly raise and lower the framework with limbs or to use only ladder.

4.3.8. The Contractor shall ensure that following areas are clearly indicated:

a) where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work;
b) Falling a distance; or
c) Being struck by a falling object:

4.3.9. The Contractor shall ensure that work equipment exposed to conditions causing deterioration, which is liable to result in dangerous situations, is inspected at suitable intervals and after any exception occurrence jeopardizing the safety of work/equipment.

4.3.10. In relation to work at height involved in construction work;

a) The top guard-rail or other similar means of protection shall be at least 1100 mm above the edge from which any person is liable to fall;
b) Toe-boards shall be suitable and sufficient to prevent the fall of any person, or any material or object, from any place of work; and
c) Any intermediate guardrail or similar means of protection shall be positioned so that any gap between it and other means of protection does not exceed 550 mm.

4.3.11. Requirements for all Working Platforms:

a) Every working platform requires a firm & stable supporting structure for holding it;
b) A working platform shall possess a suitable surface and be so constructed that the surface of the working platform has no gap through which a person/material/object could fall;
c) A working platform and any supporting structure shall not be loaded to give rise to a risk of collapse or to any deformation, which could affect its safe use;
d) When altered or modified, it should be so altered or modified as to ensure that it

remains stable;

e) A working platform shall be of sufficient dimension to permit the safe passage of persons and the safe use of any plant or materials required to be used and to provide a safe working area having regard to the work being carried out there;

f) Depending on the complexity of the scaffolding selected, a responsible person shall draw up an assembly, use and dismantling plan;

g) A copy of the plan, including any instructions it may contain, shall be kept available for the use of persons concerned in the assembly, use, dismantling or alteration of scaffolding until it has been dismantled; and

h) While a scaffold is not available for use, including during its assembly, dismantling or alteration, it shall be marked with general warning signs in accordance with and be suitably delineated by physical means preventing access to the danger zone.

4.3.12. Requirements for collective safeguards for arresting falls:

a) Collective safeguard is a safety net, airbag or other collective safeguard for arresting falls;

b) A safeguard shall be used only if:

   i) A risk assessment has demonstrated that the work activity can (so far as is reasonably practicable) be performed safely while using it and without affecting its effectiveness;

   ii) The use of other safer work equipment is not reasonably practicable; and

   iii) A sufficient number of available persons have received adequate training specific to the safeguard, including rescue procedures.

4.3.13. Requirements for personal fall protection systems:

a) A personal fall protection system shall be used only if a risk assessment has demonstrated that;

   i) The work can (so far as be reasonably practicable) be performed safely while using that system; and

   ii) The use of other safer work equipment is not reasonably practicable.

   The user and a sufficient number of available persons have received adequate training specific to the operations envisaged, including rescue procedures; and

b) A personal fall protection system designed for use with an anchor shall be securely

attached to at least one anchor, and each anchor and the means of attachment thereto shall be suitable and of sufficient strength and stability to supporting any foreseeable loading.

4.3.14. Requirements for Ladders:

a) 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;
b) The short duration of use;
c) Existing features on the Site, which he cannot alter;
d) Only metal ladders shall be allowed. Bamboo ladders are prohibited;
e) 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;
f) A ladder shall be so positioned as to ensure its stability during use;
g) No interlocking or extension ladder shall be used unless its sections are prevented from moving relative to each other while in use;
h) Where a ladder or run of ladders raises a vertical distance of 9.0 m or more above its base, there shall, where reasonably practicable, be provided at suitable intervals sufficient safe landing areas or rest platforms;

4.4. Overhead Protection

4.4.1. All Contractors shall provide overhead protections as per Rule 97 of HBOCWR. Overhead protection should be erected along the periphery of every building and other structures which shall be of fifteen meters or more in height when completed where the risk of falling objects from height exists during construction activity. Similar arrangement shall also be made during erection of OHE mast and signalling poles on public road.

4.4.2. Overhead protection shall not be less than two meters wide and shall be erected at a height not more than five meters above the base of the building and the outer edge of such overhead protection shall be one hundred fifty milli meters higher than the inner edge thereof or shall be erected at an angle of not more than twenty degrees to its horizontal sloping into the building.

4.4.3. The contractor shall ensure at the building and other construction work that any area exposed to risk of falling material, articles or objects is roped off or cordoned off or otherwise suitably guarded from inadvertent entry of persons other than building workers at work in such area.

4.5. Slipping, Tripping, Cutting, Drowning and Falling Hazards

As Per Rule 98 of HBOCWR:

a) All places should be free from dust, debris or similar materials;

b) 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;

c) Contractor shall not allow workmen to work or use platforms, scaffolds/passageways or any walkways, which has water, or oil or similar substances spilt and has a slipping hazard, unless it is cleaned off or covered or sanded or saw dusted or make it safe with any suitable material;

d) 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;

e) Suitable safety net shall be provided at places of material / man falling is possible in accordance with national standards;

f) The collapse of formwork in the construction industry has the potential for severe injury and death. The four stages of the use of formwork (erection, adjustment, concrete placement and dismantling) all need to be managed in a risk assessment framework. Implementing suitable control measures can eliminate or reduce the potential for events such as the collapse of formwork;

4.5.1. Reinforcement of Pier and columns shall be secured from the risk of tilting through provisioning of minimum three guy wires ropes anchored to any concrete block/counter weight of sufficient capacity.

4.6. Lifting Appliances including Cranes

4.6.1. Lifting appliances means a crane, hoist hydra, derrick, winch, gin pole, sheer legs, jack, hoist drum, slewing machinery, slewing bearing fasteners, lifting machinery sheaves, pulley blocks, hooks or other equipment used for lifting materials, objects or the

Workers and lifting gears means ropes, chain slings, shackles, hooks, lifting lugs, wire ropes, lifting eyebolts and eye nuts and other accessories of a lifting appliance.

4.6.2. Each of the lifting appliances and lifting gear including all parts thereof, whether fixed or moveable shall be thoroughly tested and examined by a competent person once at least in every 6 months or after it has undergone any alterations or repairs liable to affect its strength or stability. Within the validity, if the lifting appliances are shifted to a new site, re-examination by the competent person for ensuring its safety shall also be done.

4.6.3. The Contractors shall utilize the services of any competent person as defined in Factories Act, 1948 with the permission of the Engineer.

4.6.4. No machine shall be selected to do any lifting on a specific job until its size and characteristics are considered adequate:

a) The weights, dimensions and lift radii of the heaviest and largest loads;
b) The maximum lift height, the maximum lift radius and the weight of the loads that must be handled at each;
c) The number and frequency of lifts to be made;
d) How long the crane will be required on site;
e) The type of lifting to be done (for example, is precision placement of loads important;
f) The type of carrier required (this depends on ground conditions and machine capacity In its operating quadrants: capacity is normally greatest over the rear, less over the side, and non-existent over the front;
g) Whether loads will have to be walked or carried;
h) Whether loads will have to be suspended for lengthy periods;
i) The site conditions, including the ground where the machine will be set up, access roads and ramps it must travel, space for erection and any obstacles that might impede access or operation.

4.6.5. The Contractor shall ensure that a valid certificate of fitness issued is available for all lifting appliances including synchronized mobile jacks, pre-stressing hydraulic jacks, jacks fitted with launching girders etc. and the Engineer approval is obtained before inducting to the site. Only after obtaining the approval from the Engineer any lifting appliances and gear shall be used.

4.6.6. The laminated photocopies of fitness certificate issued by competent person, the Engineers approval letter, the operators photo, manufactures load chart and competency certificate shall always be either kept in the operator cabin or pasted on the visible surface of the lifting appliances.

4.6.7. All lifting appliances and loose gears shall be clearly marked for its safe working load and identification by stamping or other suitable means.

4.6.8. The Contractor shall also maintain a register containing a system of identification of all tools and tackles, its date of purchase, safe working load, competent person date of examination etc.

4.6.9. Every lifting appliances and gears like cranes, hoist, 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 Standard/International Certifying Body which gives a warning to the operator and arrests further movements of the lifting parts. These ASLI shall be calibrated by the manufacturer or its authorized representative every 6 months or after repair of the lifting equipment. All such lifting equipment shall match the age criteria and mechanically and electrically sound.

4.6.10. Sufficient lighting arrangement shall be ensured at all lifting operations.

4.6.11. **Qualification of operator of lifting appliances etc.:** The Contractor shall not employ any person to drive or operate a lifting machine-like crane, hydra etc. whether driven by mechanical power or otherwise or to give signals to work as an operator of a rigger or derricks unless he:

a) Is above 21 years of age and possesses a valid heavy transport vehicle driving license as per Motor Vehicle Act and Rules;

b) Is competent and reliable;

c) Possesses the knowledge of the inherent risks involved in the operation of lifting appliances by undergoing a formal training at any institution of national importance acceptable to the Engineer; and

d) Is medically examined periodically as specified in schedule VII of BOCW Rules.

4.6.12. All hydraulic piping and fittings shall be maintained leak proof.

4.6.13. 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.

4.6.14. Hand spliced slings up to 32mm diameter shall not be used at site for any lifting purpose.

4.6.15. No load shall be slewed over public areas without stopping the road traffic first.

4.6.16. Failure to do any of the above shall attract penalty from the Employer as per Clause 7. [Financial Deduction/Withholding].

4.6.17. Automatic Safe Load Indicator (ASLI) to be provided in crane with audible and visible warning system and made functional and calibrated by the recognized authority (manufacture/authorised representative of the ASLI).

4.6.18. **Automatic safe load indicators and data logger in lifting appliances**

As stipulated in Rule 123 of HBOCW Rules, 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 whenever the load being handled exceeds the safe working limit.

a) Provision of functional data logger with alert facility through SMS and web in all cranes shall be mandatory;
b) Cut-out shall be provided which automatically arrests the movements of the lifting parts of every crane if the load exceeds the safe working limit.

4.6.19. The crane should have a substantial/durable safe working load chart which has clearly legible characters in English and Hindi and figures displayed inside the crane and is easily visible to the crane operator.

4.6.20. General Requirements

The sweep area (work area) of the construction machinery shall be always free from obstructions. All hydraulic piping and fittings shall be maintained leak proof. The operator cab shall posses good and safe:

a) Structure, windows and windshield wipers;
b) Drivers chair and footrest;
c) Control handles;
d) Cab instrumentation;

e) Telecommunication;

f) Cab outfitting;

g) Wind indicator with an adjustable set point shall be in a position representative for the wind on the crane. The indicator shall give continuous information regarding constant speeds and gusts.

4.6.21. Mandatory Rigging requirement

a) Rigging shall be done under experienced and qualified rigger only. All Load shall be adequately and safely rigged to prevent any danger;

b) The primary requirement in rigging shall be to assess the weight of load before attempting any lift;

c) 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;

d) 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;

e) Hand spliced slings shall not be used at site for any lifting purpose;

f) Requirements of outriggers

i) All outriggers shall be fully extended and at all tyres are clear of the ground;

ii) Heavy duty blocking having large bearing area shall be necessary to prevent sinking of floats;

iii) Provision of heavy steel plates/ high density interconnected wooden logs of required dimension shall be used to uniformly distribute the load;

iv) The crane shall be setup on fully compacted ground;

v) Minimum site illumination is to be ensured at all lifting operations; and

vi) Slings shall not be wrapped in hook while lifting of material.

4.6.22. Pick & carry operation

Prohibition on Use of "Tractor transmission type Pick and Carry Hydra Crane": Tractor transmission type Pick and Carry-1st Generation model is prohibited at HRIDC works. Contractor shall mobilize "Truck transmission type" Pick and Carry(Hydra)Crane– minimum 2nd Generation model only.

Pick and Carry operation is prohibited at all HRIDC construction sites except for the tailing purpose for lowering of pile cage, erection of radio tower, electrical poles, exhaust structures etc. For transportation and lifting of small materials like rail sleepers, staging material, concrete blocks, shuttering material, barricade boards etc. loader cranes shall be used. Truck mounted cranes with storage facilities to be used for lifting of load and stowed in secured platform and then shifted. Pick & Cary cranes shall not be used for any lowering operation below the ground level.

4.6.23. **Operation of lifting appliances**

Every Contractor shall ensure that:

a) The complete lifting operation shall be governed by signals as per established standards;

b) Adequate measures to be taken to ensure that no worker is allowed to stand or pass under the load;

c) No lifting appliances shall be left by the operator while power is on or load is suspended;

d) After completion of the lifting operation, all doors of the appliances shall be closed by the operator and ignition/operation key should be handed over to competent reliever operator or site In-charge;

e) No person shall be allowed to rides or sit on a suspended load;

f) Every receptacle/material bucket used for hoisting bricks, tiles, or other material shall be enclosed from all side including bottom completely to prevent fall of any material. No wheel barrow shall be used to lift or lower the material. Such receptacle or bucket shall not be overloaded or the materials shall not cross the top level of the bucket;

g) No load shall be slewed over public areas with outs topping the pedestrians and road traffic first. Measures shall be adopted to divert the traffic during lifting/lowering operation requiring long duration traffic stoppage;

h) All loads are provided with minimum two tag lines to ensure that the load can be controlled at all times;

i) No close working to any live over head power line is permitted without system of a 'Permit to Work' and prior permission of the engineer shall be obtained before

performing such operation;

j) Danger zone shall be identified and cordoned off for all lifting appliances during their operation;

k) All lifting appliances, gears, tools & tackles shall be maintained in good condition at all times to avoid any damage to them. Slings shall be discarded once they get any sign of deterioration beyond permissible limit defined by OEM and authenticated by Plant &Machinery In-charge;

l) All lifting gears & slings shall be stamped or appropriate tags for their identification no & SWL;

m) Knotting/wrapping of chains & slings shall not be allowed at site;

n) Lifting appliances shall not be used for any dragging or pulling purposes. Contract shall refer to 75% capacity load chart for ascertaining the suitability of crane for safe lifting of load;

o) During tandem lift, available capacity of crane in respect of SWL shall be considered after reduction of 15% for 75% (DIN) load chart respectively. In addition, additional de rating as advised by third party testing and certified agency shall also apply;

p) During hoisting of long material, use of suitable lifting beam is recommended;

q) Only original equipment manufacturer (OEM) supplied/provided load chart shall be used during lifting operation;

r) Before performing any lifting operation, all electronic devices, control levers, hydraulic oil, wind pressure etc. shall be checked and necessary spare parts to be kept in stock to handle any breakdown during time bound lifting operation;

s) All underground utilities shall be identified and necessary measures shall be adopted before set up of cranes for lifting;

t) Lifting point shall be considered on the I-Girders/U Girder/C Girder/Steel girder/parapet etc during the casting of the same. Design load calculation for the same should be conducted;

u) All lifting activities shall be stopped in case of high speed wind and similar adverse whether condition or as prescribed by the crane manufacturer; and

v) All cranes shall be provided with fail safe devices to avoid any hoist free fall in case of brake failure.

4.7. Launching Operation

4.7.1. As launching operation is one of the riskiest jobs, the Contractor shall take utmost precaution at all stages like; planning, establishing casing yard, casting segments, transporting segments, fabrication and erection of launching girders, launching of segments, pre-stressing, auto launching of girders and dismantling of launching girders.

4.7.2. The Contractor shall prepare a comprehensive Method Statement for the launching operation, adhering to the ESHS conditions laid down in conditions of contract on the ESHS Management Manual. Reference shall be made to the provisions on working at height. As the entire process of launching must be undertaken at an elevated level the safety of workers and the girder is paramount important. In addition to general precautions, such as trained personnel, PPE, etc. listed in earlier clauses, the following general guidelines shall be adhered to throughout the launching operation:

a) The segments shall rigidly secure to the truck with necessary wooden wedges and necessary red indicators/safety tapes provided so that the vehicle is clearly seen by other road users both in day/night time;

b) Every launching operation shall have a responsible engineer on duty all the time;

c) All the time from erection to dismantling the area between the two piers wherein launching is in progress shall always be barricaded;

d) Auto launching shall be done only after approval from the Engineer. After every auto launching the stability of launching girder shall be ensured;

e) The vertical deflection of launching girder shall be monitored at all critical stages like with/without loads and after every auto launching;

f) A register containing all important operational details from erection to dismantling of launching girders shall be maintained and made available to the Engineer whenever called for;

g) Driver shall also have undergone proper medical examination as per sub-Clause-5.2 (Medical Facilities) and checked for influence of alcohol before any kind of lifting operation;

h) Test certificate for all lifting gears including Macalloy Bars shall be maintained at a

location closer to the launching girder itself so that it can be referred during all inspections;

i) Adequate site illumination at all time shall be ensured in the entire area of operation.

j) Proper & safe access stairways shall be maintained for safe ascending /descending of workmen /engineers to or from launchers;

k) Adequate collective and personnel fall protection measures like provision of safety nets while working over live roads/railways, lifeline for anchoring of safety harness, safe means of access on main box girder shall be ensured;

l) Before starting of the launching, valid third party test certificate of the launcher hoist shall be available and torquing of all the bolts shall be carried out and duly verified by Launching In-charge;

m) Safe and fully deck working platform duly covered from all side shall be ensured for stressing work at front support;

n) Provision of lightning arrestor shall be ensured at minimum two locations at each launching girders;

o) Adequate earthing shall be provided as per applicable standards while crossing over any existing electric line. Monitoring of the earth resistance shall be done periodically;

p) Counter weights of launcher shall be as per designer recommendation and of uniform dimension and be connected with each other;

q) At gradient, adequate additional measures as per designer's recommendation shall be adopted while auto launching of LG;

r) Safety checklist for all activities of launching cycle shall be prepared, got approved & implemented;

s) Use of nonstandard locking pins shall attract penalty; and

t) Safe jointing of rails as well as Gauge of temporary rail track for movement of rear trolley/segment trolley shall always be ensured.

4.8. Construction Machinery

4.8.1. Construction machineries may include dumpers and dump trucks, lift trucks and telescopic handlers, piling rigs, vibration hammers, rail welding equipment, mobile

elevating work platforms, cranes, tipper lorries, lorry loaders, skip wagons, 360° excavators, 180° backhoe loaders, crawler tractors, scrapers, graders, loading shovels, trenchers, side booms, pavers, planers, chippers, road rollers, locomotives, tankers and bowsers, trailers, hydraulic and mechanical breakers etc.

4.8.2. Every construction 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 or authorized persons/firms approved by the Engineer before induction to any site.

4.8.3. 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.

4.8.4. **General operating procedures**: Drivers entering site shall be instructed to follow the safe system of work adopted on site. These shall be verbal instructions or, preferably, written instructions showing the relevant site rules, the site layout, delivery areas, speed limits, etc.

a) No passengers shall be carried, unless specific seating has been provided in accordance with the manufacturer's recommendations;

b) Working on gradients beyond any equipment's capability shall not be allowed.

c) Prevention of dumper and dump truck accidents should be managed by providing for adequate lateral clearances, wheel stops at a sufficient distance from the edges of excavations, spoil heaps, pits, markers, etc.;

d) No construction material, other than soil shall be carried in excavator buckets;

e) If excavators operating on a gradient which cannot be avoided, it must be ensured that the working cycle is slowed down, that the bucket is not extended too far in the downhill direction, and that travel is under taken with extreme caution. A large excavator must never be permitted to travel in a confined area, or around people, without a banksman to guide the driver, who should have the excavator attachment close into the machine, with the bucket just clear of the ground;

f) When the front shovel of the1800 back hoe loaders is being employed, the back hoe attachment shall be in its" travel" position, with the safety locking device in place;

g) The netting operation of the skip wagons should be carried out prior to lifting the skip to reduce the risks of working on the rear platform;

h) When two or more scrapers are working on the same job, a minimum distance of at least 25m shall be kept between them;

i) In case of hydraulic breakers, hydraulic rams and hoses shall be in good working condition;

j) Every contractor shall ensure that Competency certificate for driver/operators shall be issued by their Plant and Machinery In-charge. The certificate shall be pasted on the machine body in such a way that drivers/operator vision is not hindered;

k) Checklist shall be prepared for all construction machinery and be filled on daily basis by the operator and be counter signed by plant & machinery person;

l) Provision of helper is mandatory for each construction appliances and vehicles during their movement inside and outside of site; and

m) All wood working machines shall be fitted with suitable guards and devices such as top guard, riving knife, push stick, guards for drive belts and chains, and emergency stop switch easily accessible by the operator.

4.8.5. Failure to do any of the above shall attract penalty as per Clause 7. [Financial Deduction/Withholding].

4.9 Machine Guarding

4.9.1. The Contractor shall ensure at the site all motors, cog wheels, chains and friction gearing, fly wheels, shafting, dangerous and moving parts of machinery are securely fenced or legged.

4.9.2. Fencing of dangerous parts of machinery shall not be removed while the machinery is in use or in motion and when removed, it shall be replaced as soon as practicable and in any case before the machinery is again brought into use.

4.10. Site Electricity

4.10.1. The Contractor shall refer to the applicable guideline "Indian Electricity Rules, 1956" and any amendment thereafter. ESHS requirements are:

a) Graduate Electrical Engineer having Electrical Supervisory Competency Certificate;

b) Diploma Electrical Engineer having Electrical Supervisory Competency Certificate;

c) ITI Certificate Holder Electrician with Wiremen Permit; and

d) Assessment of Electrical Load and properly designed power distribution system;

4.10.2. The Contractor shall assess the size and location of the electrical loads and the manner in which they vary with time during the currency of the Contract.

4.10.3. The Contractor shall elaborate as to how the total supply is to be obtained/generated. The details of the source of electricity, earthing requirement, substation/panel boards, distribution system shall be prepared and necessary approval from the Engineer obtained before proceeding of the execution of the job.

4.10.4. The main Contractor shall take consideration, the requirements of the Subcontractors' electric power supply and arrive at the capacity of main source of power supply from diesel generators.

4.10.5. No electrical equipment shall be put into use where its strength and capability may be exceeded in such a way as may give rise to danger.

4.10.6. Adverse or Hazardous Environments:

a) Power supply from public utility service provider is preferable;

b) The Contractor shall provide sufficient ELCBs (maintain sensitivity 30 mA)/ Residual Current Circuit Breakers (RCCBs) for all the equipment (including Potable equipment), electrical switchboards, distribution panels etc. to prevent electrical shocks to the Workers;

c) Lightening Protection for all structures, gantry, metal portable cabins, silos etc; 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;

d) No single insulation cable shall be used;

e) Cables shall be selected after full consideration of the condition to which they shall be exposed and the duties for which they are required. Supply cable up to 3.3 kV shall be in accordance with BS 6346:1997;

f) Cables buried directly in the ground shall be of a type incorporating Armor or metal sheath or both;

g) Cabling passing under the walk way and across way for transport and mobile equipment shall be laid in ducts at a minimum depth of 0.6 m;

h) The Contractor shall ensure plugs, socket-outlets, and couplers available in the Site as "splash EM proof" type. The minimum degree of Ingress Protection should be of IP44 in accordance with BS EN 60529;

i) Only plugs and fittings of the weather proof type shall be used and they should be colour coded in accordance with the Internationally recognised standards for example as detailed as follows:

    i) 110 volts: Yellow;

    ii) 240 volts: Blue;

    iii) 415 volts: Red.

j) No loose connections or tapped joints shall be allowed anywhere in the Site, office area, stores and other areas. Penalty as per Clause 7. [Financial Deduction/Withholding] shall be put in case of observation of any tapped joints;

k) All equipment shall have the provision for major switch/cut-off switch in the equipment itself;

l) Precautions shall be taken, either by earthing or by suitable means, to prevent danger arising when any conductor (other than circuit conductor) which may reasonably foreseeable become charged because of either the use of a system, or a fault in a system, becomes so charged; and

m) Isolate exposed high-voltage (over 415 Volts) equipment, such as transformer banks, open switches, and similar equipment with exposed energized parts and prevent unauthorised access;

n) Approved perimeter markings shall be used to isolate restricted areas from designated work areas and entry ways and shall be erected before work begins and maintained for entire duration of work. Approved perimeter marking shall be installed with either red barrier tape printed with the words "DANGER—HIGH VOLTAGE" or a barrier of yellow or orange synthetic rope, approximately 1 to 1.5meter above the floor or work surface;

o) All gantry tracks shall be suitably earth at multiple locations at regular intervals;

p) All temporary metal structures like barricade boards, temporary metal

containers/shed etc. shall be adequately earthed through suitable means;

q) All the earth pits shall be properly numbered along with display of resistance value and inspection records of the same shall be maintained

4.10.7. Work on or near live conductors

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) It is unreasonable in all the circumstances for it to be dead;

b) It is reasonable in all the circumstances for him to be at work on or near it while it is live; and

c) Suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury.

4.10.8. Whenever pilling work is undertaken manually through tripod in the influence zone of live OHE, method statements hall be prepared, submitted and got approved before start of work.

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

4.10.10. Appropriate electrical protection shall be provided for all circuits, against over load, short circuit and earth fault current.

4.10.11. For supplies to mobile or transportable equipment where operating of the equipment subjects the cable to flexing, the cable shall conform to any of these codes BS 6007/BS 6500/BS 7375.

4.10.12. Flexible cords with a conductor cross sectional area smaller than 1.5 mm2 shall not be used and insulated flexible cable shall conform to BS 6500 and BS 7375.

4.10.13. Power Tools:

The Contractor shall ensure that:

a) Electric tools are properly grounded or/and double insulated;

b) Ground Fault Circuit Interrupters (GFCIs)/Residual Current Circuit Breakers (RCCBs) shall be used with all portable electric tool operated especially outdoors or in wet condition;

c) Only trained employees shall use explosive actuated tools and the tool shall also be

unloaded when not in use;

d) Usage of such explosive actuated tools shall be avoided in case of places where explosive/flammable vapours or gases may be present;

e) Explosive actuated tools and their explosives shall be stored separately and be taken out and loaded only before the time of immediate use; and

f) Misfired cartridges of explosive actuated tools must be placed in a container of water and be removed safely from the project.

4.11. Illumination

The Contractor shall provide sufficient site lighting arrangement according to the relevant national standards.

4.12. Welding and Cutting

4.12.1. 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.

4.12.2. All gas cylinders shall be fixed with pressure regulator and dial gauges. clamp or clip shall be used to connect hoses firmly in both sides of cylinders and torches.

4.12.3. Non-return valve and flashback arrester shall be fixed at both end of cylinder and torch.

4.12.4. Domestic LPG cylinders shall not be used for gas welding and cutting purpose.

4.12.5. Dry Chemical Pressure (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. Fire extinguisher should confirm to IS 2190:1992.

4.12.6. Oxygen cylinders and flammable gas cylinders shall be stored separately, at least 6.6 m (20 feet) apart or separated by a fire proof, 1.5 m (5 feet) high partition. Flammable substances shall not be stored within 15m of cylinder storage areas.

4.12.7. 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.

4.12.8. All electrical installations shall meet the IS: 5571: 1997 and NFPA 70 for gas cylinder storage area and other hazardous areas.

4.12.9. Hose clamp or clip shall be used to connect hoses firmly in both sides of cylinders and torches.

4.12.10. Use firewatchers if there is a possibility of ignition unobserved by the operator (e.g. on the other side of bulkheads).

4.12.11. Transformer used for electrical arc welding shall be fixed with ammeter and voltmeter and fixed with separate main power switch.

4.12.12. Use a low voltage open circuit relay device if welding with alternating current in constricted or damp places.

4.12.13. The current for Electric arc welding shall not exceed 300 A on a hand welding operation.

4.12.14. 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.

4.12.15. Avoid being in contact with water or wet floors when welding. Use duckboards or rubber protection.

4.13. Excavation General

4.13.1. References:

a) The Haryana Building and other construction workers (Regulation of Employment of conditions of Service) Rules, 2005;
b) IS: 3764 -1992 (Re-affirmed 1996): Code of Safety for Excavation Work;
c) IS: 4756 -1978 (Reaffirmed 1996): Safety Code for Tunnelling Work;
d) BS 6164: 2011 (Code of practice for health and safety in tunnelling in the construction industry);
e) BS EN 16191: 2014 (Tunnelling Machinery-Safety requirements);
f) IS 4081:2013 Blasting and related drilling operations-code of safety.

4.13.2. The Contractor shall ensure:

a) Where any construction & 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 1.5 m above his footing, such worker shall be protected by adequate piling and bracing against such bank or side;
b) Where banks of an excavation are undercut, adequate shoring is provided to support the material or article overhanging such bank;

   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 construction building worker working below such bank;

c) 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 comply with the IS 3696 Part 1&2 and other relevant national standards;

d) Trench and excavation is protected "against falling on a person by suitable measures if the depth of such trench or excavation exceeds 1.5m and such protection is an improved protection in accordance with the design and drawing of a professional engineer, where such depth exceeds 4.0m;

4.13.3. Warning Signs and Notices:

The Contractor shall ensure that suitable warning signs or notices, required for the safety of workers carrying out the work of an excavation, shall be displayed or erected at conspicuous places in Hindi and in a language understood by most of such workers at such excavation work.

4.14. Tunnelling Works

4.14.1. The Contractor shall inform in writing to the Chief Inspector of Government of Haryana within 30 days, prior to the commencement of any tunnelling work.

4.14.2. The Contractor shall appoint a responsible person for safe operation for tunnelling work as per BOCWR.

4.14.3. In addition to general precaution such as display of warning sign/notices, deployment of trained staff, housekeeping, etc., the Contractor shall ensure that:

a) All portable electrical hand tools and inspection lamp used in underground and confined space at an excavation or tunnelling work is operated at a voltage not exceeding 24V;

b) Only flame proof equipment of appropriate type as per IS: 5571:2000 and or another relevant national standard is used inside the tunnel;

c) Petrol or LPG of any other flammable substances are not used, stored inside the tunnel except with prior approval from the Engineer, and no oxy-acetylene gas is

used in a compressed air environment in excavation or tunnelling;

d) Adequate number of water outlets provided for fire fighting purpose, an audible fire alarm and adequate number and types of fire extinguishers are provided and maintained;

e) Temperature in any working chamber in an excavation or tunnelling work where workers employed does not exceed 29°C as per BOCWR;

f) All working areas in a free air tunnel are provided with ventilation system as approved by the Chief Inspector of Government of Haryana and the fresh air supplied in such tunnel is not less than 6 m3/min for each worker employed in tunnel and the free air flow movement inside such tunnel is not less than 9.0 m/min;

g) The oxygen level shall not be less than 19.5% in the working environment;

h) The excavated areas are made safe by use of suitably designed and installed steel sets, rock bolts or similar other means;

i) The responsible person referred to in BOCWR examines and inspects the workplaces in a tunnel before the commencement of work in such tunnel, and at regular intervals thereafter, to ensure safety of the Workers in such tunnel;

j) The portal areas of a tunnel with loose soil, or rock, likely to cause injury to a person are adequately protected with supports; and

k) The Contractor shall ensure safe means of access to enter into a shaft.

4.14.4. Means of Communication

The Contractor shall ensure that: reliable and effective means of communication such as telephone or walkie-talkie is provided and are maintained in working order for arranging better and effective communication at an excavation.

4.14.5. Permissible Limit of Exposure of Chemicals

The Contractor shall ensure that the responsible person referred to in BOCWR conducts necessary test before the commencement of a tunnelling work for the day and at suitable intervals as fixed by Chief Inspector to ensure that the permissible limits of exposure are not exceeded, and a record of such test is maintained and is made available for inspection to Chief Inspector, on demand.

4.14.6. Rock Fall Prevention (NATM)

The Contractor shall:

a) Draw up a method statement that includes preventive measure to fall of rock, tunnel face watching, evacuation methods from the face, and the construction sequence etc. to ensure that workers are informed.

4.14.7. Dust Emission Control (NATM)

Dust control plan shall be prepared and followed by the Contractor against dust emission in the tunnel

a) Monitoring regularly every month for dusts concentration, wind velocity, air capacity of ventilation system;
b) Direct air flow with the upper limit of dust concentration less than $3mg/m^3$;
c) Keep monitoring record including date, method, location, condition, results, and evaluation of results, measurer's name; and
d) The effective and good quality respiratory protective devices should be provided for all workers and ensured constant monitoring of their usage.

4.14.8. Evacuation and Training

The Contractor shall ensure that:

a) Implementation of the training for evacuation and fire fighting immediately before the distance reaches about 100m from the portal to the tunnel face; and
b) Implementation of evacuation training by a responsible person appointed in terms of dealing with technical matters.

4.15. Blasting and Drilling

4.15.1. The following standards whichever is more stringent shall be applicable:

a) Safety Code for Blasting and Drilling operation IS 4081:2013;
b) Safety Code for tunnelling Work IS 4756-1978;
c) Code of practice for construction of tunnels IS 5878;
d) The Haryana BOCWR ; 2005 and Other Relevant National Legislations & IS Codes; and
e) Code of Practice for the safe use of explosives in the construction industry BS 5607:1988.

4.15.2. The Contractor shall ensure that all blasting operations will only be permitted following consultations with the relevant authorities and subsequent issuing of the permission to

blast permits. The Engineer must also give his consent in writing before any blasting operations take place.

4.15.3. The Contractor shall:

a) appoint the manager, the deputy manager and officer in charge of handling explosives to prevent handling accidents;

b) when doing blasting work, the Contractor shall appoint a work supervisor from among those who can take on the blasting work;

c) All blasting shall be conducted under the direct supervision of a Licensed Shot firer.

4.15.4. Handling of explosives- as per Rule 278 HBOCWR;

The Contractor shall ensure at a construction site of a building or other construction work that-

a) All explosives are handled, used or stored in accordance with the instructions and the material data sheet supplied by the manufacturer of such explosives;

b) The use of explosives is carried out in safe manner to avoid injury to any person and under the direct supervision of a responsible person;

c) Before using any explosive, necessary warning and danger signals are erected, at conspicuous places of such use to warn the building workers and the general public of the danger involved in such use.

d) Safety Precautions- as per Rule 279 of HBOCWR;

The Contactor shall ensure at a construction site of a building or other construction work that-

i) Notwithstanding the provisions of rule 278, the following precautions are observed at the places of transporting, handling, storage and use of such explosives, namely-

ii) Prohibition of smoking, naked lights and other sources of ignition in the vicinity where explosives are handled, stored and used;

iii) To keep safe distance and to use non-sparking tools while opening packages containing explosives;

iv) To stop the use of explosives and handling thereof while the weather conditions are not suitable for such use or handling.

v) In addition to the provisions of this chapter, all measures and precautions

required to be observed for use, handling, storing or transportation of explosives under the rule framed under the Explosives Act, 1884(4 of 1884), are observed.

4.15.5. Risk Assessment and Method Statements

The Contractor shall produce a detailed hazard and risk assessment and an in depth method statement for amongst others the following elements:

a) Type of explosives to be used;
b) Anticipated effects of vibration on nearby structures;
c) Blasting patterns;
d) Delivery of the explosives;
e) Transportation and storage of explosives on site;
f) Drilling and charging of holes;
g) Warning sirens;
h) Measurement of Vibration;
i) Use of blast screens;
j) Ventilation following blasting;
k) Atmosphere monitoring;
l) Procedure for miss-fires;

4.16. Material Transportation

4.16.1. The Contractor shall develop the System Procedure/Methods Statement for heavy/big material/machinery transportation such as Rolling Stock, Transformer, and Bridge Main Girder, etc.

4.16.2. The Contractor shall ensure that the person in charge should inspects the safety implementation like properly fixing of wire with vehicle slab bed, condition of vehicle breaks etc. before starting the job and record the accidents and records.

4.16.3. The Contractor shall ensure that every vehicle/moving machinery should have a signal man who has a whistle, a flag or a signal light (in the night) with striking clothes and stands at a safe visible place from a machine operator by means of the proper signal and way determined.

4.16.4. The induction related to moving and parking safely should be given to driver/operator like parking construction vehicles at a specified place with a parking brake and making

sure to put a drag.

4.17. Foundation Works

4.17.1. The Contractor is required to evaluate the risk in each activity and suggest a control measures of piling works:

a) Covering of bore holes with adequate warning signs;

b) Cage to be lowered by using crane;

c) The auxiliary hook of the rig shall not be used to pull or lower the cage in bore hole;

d) The tremie pipe lowering and lifting after concreting shall be done by using crane;

e) Control measure to arrest polymer spillage from the Site to avoid contaminating the surface drains;

f) An entry restraining fence shall be provided around the pier excavation completion;

g) No man suffering from any chronic disease, alcoholic excess, ear or heart troubles or having a sluggish blood circulation or who has excess of fat should be employed as a diver;

4.18. Batching Plant and Casting Yard

4.18.1. The Contractor is required to evaluate the risk in each activity and suggest Control Measures:

a) Adequate space between the casting bed, segment storage area and the adjoining road shall be maintained so that a steel railing could be installed to segregate the gantry crane movement area from the road;

b) All safety precautions stated in Sub-Clause4.8[Construction Machinery], Automatic Safe Load Indicator (ASLI) for crane and gantry shall be complied during erection of gantry crane and other equipment;

c) The aggregate/sand storage area shall be kept under the full coverage of effective water sprinkler to avoid dust generation;

d) The entire batching plant/aggregate storage Area shall be adequately walled of sufficient height, above which the Contractor is required to erect green dust protective net. This is a mandatory requirement to avoid dust in surrounding environment;

e) The batching plant and casting yard required to obtain ''Consent to Establish'' and

''Consent to Operate'' certificate from State Pollution Control Board;

f) The batching plant/casting yard shall be barricaded and made as a compulsory Personal Protective Equipment (PPE) zone;

g) Time office, canteen, drinking water, toilet and rest place shall be suitably located for the easy access to workers. All the facilities shall be properly cleaned and maintained during the entire period of operation;

h) Drainage shall be effectively provided, and waste water shall be disposed after proper treatment; and

i) Manual handling of cement shall be avoided. Whenever it is necessary the workmen shall be given full body protection, hand protection and respiratory protection as a basic measure of ensuring better health.

4.19. Form Works

Ensure no attaching equipment to the formwork assembly unless specifically designed for this purpose; and not using a stripping process which may cause damage to the permanent structure.

4.20. Concrete Works

a) Concrete pumping equipment, trucks etc. are not to be washed down on site and any waste-water, concrete slurry or other contaminants are to be contained; and

b) These contaminants are not to be discharged into or onto roadways, footpaths, gutters, drainage systems, watercourses or any other surface area that will result in damage to the environment or contravenes environmental legislation.

4.21. Pier Casting Works

a) using crane to hold the pier reinforcement during the time gap between de-staging and placement of shutter; and

b) location and pier height specific securing arrangement and specific Method Statement for pier more than 9.0 m shall be submitted and approved by the Engineer.

4.22. Bridge Erection Works

4.22.1. References:

a) The BOCW Acts and Rules;

b) The Haryana BOCW Rules 2005;

c) Indian Railways Bridge Manual; and

d) Safety Assessment with regard to Steel Bridge Erection Works 1985, Ministry of Health, Labour and Welfare;

4.22.2. **General**

As bridge erection works are one of the riskiest jobs, the Contractor shall take utmost precaution at all stages like; planning, establishing temporary yard, casting segments, transporting segments, fabrication and operation of erection machinery, if any, launching of segments/lifting of segments, pre-stressing, cutting and welding, auto (or manual) launching and dismantling of erection machineries. For pre-stressed concrete bridges, the Contractor shall further ensure that:

a) a responsible person should be appointed for post-tensioning works testing and inspection of tendon tensioning devices and using material;

b) installation of protective board behind a tensioning jack and keep out behind a jack during tensioning;

c) use of protective glasses, laver gloves, and masks during grouting for safety of the Workers; and

d) fall prevention installation of overall boarding at the bottom of a bridge and installation of funnel type boarding at the side of a bridge during construction in case of RFO (Railway Flyover) or ROB (Road over Bridge) for preventing the flying and fall of materials and tools by safety net, should be ensured.

4.22.3. The Contractors Obligation

The Contractor shall prepare a comprehensive method statement for the bridge erection works, adhering to the ESHS conditions laid down herein. Particular reference shall be made to the provisions on working at height. As the entire process of launching/lifting has to be undertaken at the Site especially during night time, the safety of workers is of paramount important. Daily inspection of scaffold structure and mechanical equipment for the traveller crane should be done.

4.22.4. Basic Consideration under Site Condition:

Erection works over or adjacent roads or highways:

a) The work area should be demarcated properly, and route map and traffic management plan should be developed and implemented with proper signages and

caution;

b) The Contractor shall ensure the implementation of proper stop traffic and detour plan;

c) The Contractor shall arrange the proper guide and signs to be followed while working on highway or adjacent roads, railways; and

d) The Contractor should plan and establish all the required measures for the protection of overhead wires and buried utilities.

    i) The regular inspection is done for all the installed protection equipment;

    ii) The movement restriction site plan to be developed with defined operation path for safe working at site;

    iii) watchmen should be appointed who are given training related to all type of traffic management and all signals used for smooth traffic flow and site transportation and works;

    iv) The railway schedule is taken in consideration while planning the site works and ensures the safe management system with the details given regarding the kind of works suspended while a train is passing and clarifying the way of opening or closing railway in case of track closure works. For steel truss bridges;

    v) The Contractor must install the protective net just after erecting truss upper chord material;

    vi) The Contractor must install safety operation path to an end of erected member and a cross point of lateral bracing;

The Contractor may use any of the erection methods. However, following general points will be kept in view and ensured as applicable-

A. The Contractor should develop and confirm the Engineer his Method Statement with details of position of bearing, jacking operation, roller passing etc.;

B. Detailed inspection report related to the movement and condition of superstructure from the place of launching equipment and rollers should be given to the Engineer;

C. The Contractor shall give confirmation of binding situation such as a bolting erection member;

D. The Contractor shall give confirmation of displacement per every erection phase;

E. The Contractor shall give confirmation of fixing situation for bearings;

F. The Contractor must take measures to avoid a fall and lateral buckling of member; and

G. The Contractor shall take measures of fall prevention for main superstructure.

4.23. Building and Roof Erection Works

4.23.1. The Contractor shall plan erection sequence and work procedures properly under competent and experienced personnel to ensure the safety of workers and prevent structure failure during erection:

a) Contractor shall develop and confirm with the Engineer his method statement with details;

b) The stability of structural members is to be ensured by means of ties, braces, anchor/fixing bolts, or other suitable means before releasing lifting gear, slings, chains etc;

c) Tag lines must be attached to the ends of components/loads to maintain control during crane lifting operations;

d) Structure stability is to be ensured always. Unattended and incomplete buildings/structures are NOT to be left in an unsafe and hazardous condition, to pose a risk to the safety and health of site personnel or the public;

e) The Workers placing and securing roof battens are to be protected and are to work from an enclosed environment (e.g. scaffolding, deck guardrail or equivalent) and

work up from the bottom of the truss/rafter towards and finish at the ridge /peak of the roof framing; and

f) When the spacing of trusses and roof battens exceed 600mm the appropriate procedures are to be considered and applied after conducting a risk assessment to provide the optimum fall protection.

4.24. Confined Space Entry

4.24.1. The Contractor must ensure all confined spaces are identified and managed using documented site confined space management methods.

4.24.2. When internal combustion engines are to be used into confined space or excavation or any other workplace where natural or artificial ventilation system is inadequate to keep carbon monoxide below 50ppm, exposure of workers shall be avoided unless suitable measures are taken and provided by the Contractor.

4.24.3. No worker shall be allowed into any confined space or tank or trench or excavation wherein there is given off any dust, fumes/vapours or other impurities which is likely to be injurious or offensive, explosive or poisonous or noxious or gaseous material or other harmful articles unless steps are carried out by the Contractor and certified by the responsible person to be safe.

4.25. Fire Protection

4.25.1. The contractor shall ensure that the construction site is provided with—

a) Fire extinguishing equipment sufficient to extinguish any probable fire at such construction site;

b) An adequate water supply at ample pressure as per national standards;

c) Number of trained persons required to operate the fire extinguishing equipment provided; and

d) Is properly maintained and inspected at regular intervals of not less than once in a year by the responsible person and a record of such inspections is maintained.

4.25.2. The extinguishers shall be chosen as per type of fire load and surrounding location.

4.25.3. All construction machinery including crane shall carry a portable fire extinguisher in operator's cabin.

4.25.4. Emergency plan and Fire Evacuation plan in ESHS Management Plan shall be prepared and issued by the Contractor. Mock drills should be held on a monthly basis to ensure

the effectiveness of the arrangements and as a part of the programme, the telephone number of the local fire brigade should be prominently displayed near each telephone on site.

4.25.5. Recharging of fire extinguishers and their proper maintenance should be ensured and as a minimum should meet Indian National Standards.

4.25.6. All drivers of vehicles, foreman, supervisors and managers shall be trained on operating the fire extinguishers and fire fighting equipment.

4.26. Corrosive Substance

As per Rule 100 of HBOCWR, The contractor shall ensure that corrosive substances, including alkalis and acids, shall be stored and used by a person dealing with such substances at a building or other construction work in such a manner that it does not endanger the building worker and suitable protective equipment shall be provided by the contractor to a building worker during handling or use of such substances at a building or other construction work and in case of spillage of such substances on the building worker, immediate remedial measures shall be taken by the contractor.

4.27. Demolition

4.27.1. All demolition works be carried out in a controlled manner under the management of experienced and competent supervision.

4.27.2. The concerned department of the Government or local authority is informed, and permission obtained wherever required. Media shall also be informed regarding this concern.

4.27.3. 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 disconnected.

4.27.4. No demolition work be performed if the adjacent structure seems to be unsafe unless and until remedial measures life sheet piling, shoring, bracing or similar means be ensured for safety and stability for adjacent structure from collapsing.

4.27.5. Debris/bricks and other materials or articles shall be removed by means of chute, bucket or other safe method.

4.27.6. No person other than the 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.

4.28. Permit to Work

4.28.1. The Contractor shall develop work permit system, which is formal written system used to control certain types of work that are potentially hazardous. A work permit is a document, which specifies the work to be done, and the precautions to be taken.

4.28.2. Work Permits form an essential part of safe systems of work for many construction activities. They allow work to start only after safe procedures have been defined and they provide a clear record that all foreseeable hazards have been considered. Permits to Work are usually required in high-risk areas as identified by the Risk Assessments.

4.28.3. A permit is needed when construction work can only be carried out if normal safeguards are dropped or when new hazards are introduced by the work.

4.28.4. Examples of high-risk activities include but are not limited to:

a) Entry into confined spaces;
b) Hot work;
c) To dig where underground services may be located;
d) Work with heavy moving machinery;
e) Work with radioactive isotopes;
f) Heavy lifting operations and lifting operations closer to live electric power line;
g) Work with using track motor vehicles etc.; and
h) Work under electric facility and overhead electric (OHE) line energized.

4.28.5. The Contractor shall prepare operation manuals above mention and implement training course at any time based on such manuals to the Workers given completion of certificates before the commencement of works.

4.28.6. The permit-to-work system should be fully documented, laying down:

a) How the system works;
b) The jobs it is to be used for;
c) The responsibilities and training of those involved; and
d) How to check its operation.

4.28.7. A work permit authorization form shall be completed with the maximum duration period not exceeding 12 hours or end of shift, which is earlier.

4.28.8. A copy of each permit to work shall be displayed at work place. during its validity, in a

conspicuous location in close proximity to the actual works location to which it applies.

4.29. Traffic Management and Site Barricading

4.29.1. The basic objective of the following guiding principles is to lay down procedures to be adopted by the Contractor to ensure the safe and efficient movement of traffic and also to ensure the safety of workmen in the all work areas.

4.29.2. The guiding principles to be adopted for safety in construction zone are to:

a) Warn the road user clearly and sufficiently in advance;
b) Provide safe and clearly marked lanes for guiding road users;
c) Provide adequate traffic marshals to regulate the movement of traffic;
d) Provide safe and clearly marked buffer and work zones; and
e) Provide adequate measures that control driver behaviour through construction zones.

4.29.3. In all cases, the Contractor shall employ proper precautions. Wherever operations undertaken are likely to interfere with public traffic, Specific Traffic Management Plans shall be drawn up and implemented by the Contractor in consultation with the approval of Local Police Authorities and/or the concerned politburo/Civil Authorities and followed to the IRC:SP;55- 2014 (Guidelines on Traffic Management in work zones) & IRC: 67 (Code of Practice for Road Signs).

4.30. Working near Railway

4.30.1. The details of Safe work procedure for work near Railway Track is given in **Attachment -5** of this document.

4.31. Other Works to be Scrutinized

4.31.1. Other works including, but not be limited to, the works in the Site (the ROW), the works in the Borrow Pit, the works in the Quarry and Works on road shall be included to be scrutinised with respect to the accident prevention.

4.31.2. If blasting is anticipated in excavation in rock, preventive measures against accidents and protective measures against environmental/social impacts shall be of paramount importance.

4.31.3. The Contractor shall include all those items as well as work elements to formulate the preventive and protective measures considering envisaged conditions, situations, and activities of the works which may induce accidents or hazard to environment and/or

society.

4.32. Personal Protective Equipment

4.32.1. 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) Head protection (Safety helmet with a chin strap);
b) Foot protection (Safety footwear, Gumboot, etc.);
c) Body protection (High visibility clothing (Waistcoat/Jacket), Apron, etc.);
d) Personal fall protection (Full body harness, Rope-grip fall arrester, etc.);
e) Eye protection (Goggles, Welders Glasses, etc.);
f) Hand protection (Gloves, Finger coat, etc.);
g) Respiratory protection. (Nose mask, Self-contained breathing apparatus, etc.); and
h) Hearing protection (Ear plugs, Ear muffs, etc.).

4.32.2. The PPEs and safety appliances provided by the Contractor shall be of the standard as prescribed by Bureau of Indian Standards (BIS). If materials conforming to BIS standards are not available, the Contractor as approved by the Engineer shall procure PPE and safety appliances.

4.32.3. The Contractor shall provide the PPEs which the Contractor deems necessary including; but not be limited to, safety helmets, safety shoes to all the Contractor's Employees including workmen (including those of its sub-contractors). When and Where the Contractor thinks that he needs to provide the Contractor's Employees including workmen' (including those of its sub-contractors) with high visibility clothing as per the following requirement.

a) Hi-visibility jacket covering upper body and meeting the following requirements as per BS EN 471:1994;
b) Background in fluorescent orange-red in colour;
c) Jackets with full-length sleeves with two bands of retro reflective material, which shall be placed at the same height on the garment as those of the torso. The upper band shall encircle the upper part of the sleeves between the elbow and the shoulder; the bottom of the lower band shall not be less than 5cm from the bottom of the sleeve;
d) Two vertical green strips of 5cm wide on front side, covering the torso at least 500

cm^2;

e) Two diagonal strips of 5 cm wide on back in an 'X' pattern covering at least 570cm2;

f) Horizontal strips not less than 5cm wide running around the bottom of the vertical strip in front and 'X' pattern at back;

g) The bottom strip shall be at a distance of 5cm from the bottom of the vest; and

h) viii) Strips shall be retro reflective and fluorescent.

Safety Helmet Colour Code (Every Helmet should have the LOGO*affixed/painted)	**Person to use**
Hard hat with company Logo (Employees)	Hard hat with reflective tape (Marshals)
White	Employer/Engineer
Grey	All designers, Architect, Consultants, etc.
Violet	Main Contractors(Engineers/Supervisors)
Blue	All subcontractors(Engineers/Supervisors)
Red	Electricians(Both Contractor and Subcontractor)
Green	Safety professionals (Both Contractor and Subcontractor)
Orange	Security guards/Traffic marshals
Yellow	All workmen
White(with" VISITOR" sticker)	Visitors
Safety Shoes (Anyone at the Site incl. Marshals)	
All employees of the contractor including workmen	Traffic marshals

Note: LOGO·

i) Logo shall have its outer dimension 2"X2" and shall be conspicuous

ii) Logo shall be either painted or affixed

iii) No words shall come either on Top / Bottom of Logo

Logo of the corresponding main contracting company for their employees and sub-contracting company for their employees shall only be used.

4.32.4. In addition to the above any other PPEs required for any specific jobs like, welding and cutting, working at height, tunnelling etc. shall also be provided to all workmen and

also ensure that all workmen use the PPEs properly while on the job.

4.32.5. The Contactor shall not pay any cash amount in lieu of PPEs to the workers/sub-contractors and expect them to buy and use during work.

4.32.6. The Contactor shall at all-time maintain a minimum of 10% spare PPEs and safety appliances and properly record and show to the Engineer during the inspections. Failing to do so shall invite penalty as per Clause 7. [Financial Deduction/Withholding].

4.32.7. It is always the duty of the Contactor to provide required PPEs for all visitors. Towards this required quantity of PPEs shall be kept always at the security post.

4.32.8. The Contractor shall ensure that safety equipment and protective clothing is available and used on the site at all material times and those measures for the effective enforcement of proper utilisation and necessary replacement of such equipment and clothing shall be incorporated into the Site ESHS Plan.

4.33. Visitor at Site

4.33.1. No visitor can enter the Site without the permission. All authorised visitors should report at the site office. The Contractor shall provide visitor's helmet (White helmet with visitor sticker) and other PPEs like Safety Shoe, reflective jacket, respiratory protection etc. as per requirement of the Site. Entry of visitors in underground shall be suitably controlled.

4.33.2. The Contractor shall be fully responsible for safety and health of all visitors within the Site.

4.34. Site Security

4.34.1. The Contractor shall be wholly responsible for security on the Site and any other areas being used by him or the Subcontractor's for the purposes of the Contract. The Contractor shall implement and cause the Subcontractor's to implement proper security management procedures in accordance with the approved ESHS Management Plan.

4.34.2. The Contractor shall assign on the Site a security officer (adequately trained person,) and his alternate(s), who shall be primarily responsible for the Contractor's security services and fully cooperate with the Engineer's security organization throughout the Time for Completion. Necessary approval of agency shall be obtained from the Engineer.

4.34.3. The security plan covered by the ESHS Management Plan shall contain the following:

a) Security policy statement and objectives;

b) The Contractor's security organization;
c) Role, responsibility and authority of each member of the security organization;
d) Procedure for enforcement of security regulations;
e) Daily, weekly and monthly security meeting procedures;
f) Sample forms for security reports;
g) Personnel security control procedures;
h) Goods security control procedures;
i) On-site security patrol procedures;
j) Liaison and coordination procedure with local fire/police and other authorities;
k) Liaison and coordination procedure with the Employer and relevant other authorities; and
l) Liaison, coordination and joint security inspection procedure with other Contractors.

4.34.4. Where necessary, the Contractor shall install, modify, maintain and remove the temporary security fences, gates, posts, security lightings and other facilities required for proper security control, in addition to those to be constructed as part of the Works. The Contractor shall operate these facilities to properly control ingress to and egress from the areas under his control throughout the Time for Completion. This control shall apply to every person including the Employer's Personnel.

5. OCCUPATIONAL HEALTH AND WELFARE

5.1. Physical Fitness of Workmen

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

5.1.2. The Contractor shall not permit any employee/workers to enter the work area under the influence of alcohol or any drugs.

5.1.3. The Contractor shall maintain the confidential records of medical examination or the physician authorized by the Engineer.

5.1.4. No worker is charged for the medical examination and the cost of such examination is borne by the Contactor employing such worker.

5.1.5. If the Contractor fails to get the medical examination conducted as mentioned above, the Engineer will have the right to get the same conducted through an agency with intimation to the Contractor and deduct the cost and overhead charges from his dues.

5.2. Medical Facilities

5.2.1. Occupational Health Centre (First Aid Station)

The Contractor shall ensure at a construction site an occupational health centre, mobile or static is provided and maintained in good order. Services and facilities as per the scale lay down in **Schedule IV** of HBOCWR. A construction medical officer appointed in an occupational health centre, possess the qualification as laid down in **Schedule V** Rule no 113 of HBOCWR:

5.2.2. The Contractor shall appoint appropriate full-time staff including one nurse, one dresser-cum-compounder, one sweeper-cum-ward boy with each construction medical officer.

5.2.3. The Contractor shall communicate the complete details including name, qualification and experience of the construction medical officer, to the inspector having jurisdiction under HBOCWR.

5.2.4. Ambulance Room, Ambulance Van and Stretchers:

The Contractor shall ensure at a construction site of a building or other construction work that an ambulance van and room are provided at such construction site or 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 and such ambulance van and room are maintained in good repair and is equipped with standard facilities specified in Schedule VI of Rule 114 & Schedule VII of Rule 115 of HBOCWR.

5.2.5. The Contractor shall provide enough stretchers at each site for use in an emergency.

5.2.6. First Aid Boxes and Emergency Care:

The Contractor shall ensure at construction site one First-aid box for 100 workers for providing first-aid to the workers. Every First-Aid box is distinctly marked "First-Aid" and is equipped with the articles specified in Schedule IX of Rule 119 of HBOCWR. Adequate no. of trained first aid persons shall be available at each work site in each shift.

5.2.7. HIV/AIDS Prevention and Control:

a) The Contractor shall adopt the Employer's "Workplace Policy on HIV/AIDS Prevention and Control for Workers Engaged by Contractors" and implement it. A copy of the policy is given in **Attachment-2 [Workplace Policy on HIV/AIDS Prevention & Control]**; and

b) The Contractor shall prepare and submit the Manual for HIV/AIDS Prevention and Control for his workers in terms of the aforesaid Employer's Policy within 28 days of the date of notification of the Contract.

5.2.8. COVID -19 Prevention and Control

The Contractor shall ensure that the latest guidelines issued by Ministry of Health and Family Welfare (MoHFW), local government and the district administration are strictly followed at the construction works site. The Work Place Policy on COVID-19 Prevention and Control is given in **Attachment-3 [Workplace Policy on COVID-19 Response**].

5.2.9. Prevention of Mosquito Breeding

Measures shall be taken to prevent mosquito breeding on the Site. The measures to be taken shall include:

a) Empty cans, oil drums, packing and other receptacles, which may retain water, shall be deposited at a central collection point and shall be removed from the site regularly;

b) Stagnant water shall be treated at least once every week with oil to prevent mosquito breeding;

c) The Contractor's equipment and other items on the site, which may retain water, shall be stored, covered or treated in such a manner that water could not be retained; and

d) Water storage tanks shall be provided.

5.2.10. Posters in local language, Hindi and English, which draw attention to the dangers of permitting mosquito breeding, shall be displayed prominently on the Site.

5.2.11. The Contactor at periodic interval shall arrange to prevent mosquito breeding by fumigation/spraying of insecticides, and the ideal larvicide etc.

5.2.12. Alcohol, Smoking and Drugs

The Contactor shall always ensure that no employee is working under the influence of alcohol/drugs which are punishable under BOCWR;

Smoking at public places by any employee is also prohibited as per Government Regulations. The Contractor shall comply with the legal provisions in this regard, such as; Prohibition of Smoking in Public Places Rules, 2008. He shall be solely responsible for any penalty or punitive action by the government authorities because violations of the provisions contained in these rules by him or his representatives or his employees or his Subcontractors. Requisite notice boards, posters, etc., shall be put by him, as per the Rules.

5.3. Occupational Noise

5.3.1. The Contractor shall comply with the codes, regulations and standards regarding noise pollution and control as notified and amended by Central Government and State Government from time to time on the Site including but not necessarily limited to:

a) Chapter VII, Part -I, Schedule-I of Haryana BOCWR 2005;

a) Noise Pollution (Regulation and Control) Rules, 2000;

b) Environment (Protection) Act, 1986;

c) Environment (Protection) Amendment Rules, 2000; and

d) Central Motor Vehicles Rules, 1989;

e) Notification on Control of Noise from DG Sets, 2002.

5.4. Welfare Measures for Workers

5.4.1. Latrine and Urinal Accommodation:

a) Latrine and urinals shall be provided as per Chapter VI, Part – II of Rule 80 of Haryana BOCWR and shall also comply with the requirements of public health authorities; and

b) When women are employed, separate latrine and urinals accommodation shall be provided.

5.4.2. Moving Sites:

a) In case of works like track laying, the zone of work is constantly moving. In such cases, mobile toilets with proper facility to drain the sludge shall be provided at reasonably accessible distance; and

b) In case the Contactor fails to provide required number of urinals and latrines or fails to maintain it as per the requirements of Public Health Laws, the Engineer shall have the right to provide/maintain through renowned external agencies at the cost of the Contactor.

5.4.3. Canteen

In every workplace wherein not less than 250 workers are employed, the Contractor shall provide an adequate canteen conforming to Chapter VI, Part – II of Rule 81 of Haryana BOCWR

5.4.4. Drinking Water.

As per Section 32 of BOCWA, the Contractor shall make in every site, effective arrangements to provide sufficient supply of wholesome drinking water. Quality of the drinking water shall conform to the requirements of national standards on Public Health Laws. While locating these drinking water facilities due care shall be taken so that these are easily accessible from the place of work for all workers at all location of the Site. All such points shall be legible marked "Drinking Water" in a language understood by most of the workmen employed.

5.4.5. Crèche

In every workplace where in more than 50 female workers are ordinarily employed, there shall be provided and maintained a suitable room for use of children under age of

6 years, conforming to the provisions of Section 35 of BOCWA.

5.4.6. Labour Accommodation Camps

Labour camp management plan shall be prepared and approved by Engineer. Where workers are based some distance from their normal place of residence, the Contractor shall provide them with suitable and safe accommodation free of charge and shall take all necessary precautions to protect their health and welfare. The accommodation shall conform to the requirements of Section 34 of BOCWA and include but not be limited to the further measures specified hereunder.

5.4.7. All accommodation camps shall be provided always with a sufficient supply of clean drinking water (of potable quality according to national legal standards), in suitable and easily accessible locations:

5.4.8. The quality of drinking water shall be tested once a fortnight as prescribed in IS 10500:2012and immediate remedial action shall be taken if quality falls below the standard. Test results shall be provided to the Engineer at least monthly.

5.4.9. The Contractor shall provide all accommodation camps with clean and properly equipped and staffed kitchen and canteen facilities to supply meals for workers.

5.4.10. The Contractor shall provide sufficient toilet and bathroom facilities for the numbers of workers accommodated in each camp. Separate accommodation and toilet/bathroom facilities shall be provided for men and women and all facilities shall be kept in full working order always and cleaned and re-equipped daily.

5.4.11. The Contractor shall provide a laundry facility for the Workers at the Labour Accommodation Camps.

6. ENVIRONMENT AND SOCIAL MANAGEMENT

6.1. General Conduct of the Works

6.1.1. The purpose and objective of these guidelines is to outline how the project will avoid, minimise or mitigate effects on the environment and surrounding area. These guidelines detail the implementation of measures in accordance with environmental and social commitments of HRIDC. These guidelines will be 'live' guidelines that will be reviewed and updated at regular intervals throughout the project life cycle. These guidelines will ensure that the development is compliant with current environmental and social legislations and will guide and assist the Contractor in exploring all reasonable and feasible means for reducing construction related environmental and social impacts.

6.1.2. The Contractor shall comply with the Environment and Social Management Plan (ESMP)given in the Environmental and Social Impact Assessment (ESIA) report available on HRIDC portal for information disclosure and will note and implement any requirements therein, in addition to those found in this specification.

6.1.3. The Contractor is required to build good public relations before the commencement of the Works particularly with the local level representatives such as the Gram Panchayat, by informing the expected impacts by the Works and their schedule and dispute resolution mechanism known as GRM set by the Employer.

6.2. Environmental Legislation

6.2.1. The Contractor shall always comply with all relevant national and state legislations regarding environmental protection, pollution prevention and control, waste management and other relevant environmental matters, including but not necessarily limited to, the following with their latest amendments:

a) The Environment (Protection) Act, 1986;

b) The Environment (Protection) Rules, 1986;

c) The Indian Wildlife (Protection) Act, 1972;

d) The Forest (Conservation) Act, 1980 &Rules;

e) Punjab Land Preservation Act, 1900;

f) The Noise Pollution (Regulation and Control) Rules, 2000;

g) Notification on Control of Noise from Diesel Generator (DG) sets, 2002;

h) The Air (Prevention and Control of Pollution) Act, 1981and Rules 1981;

i) The Water (Prevention and Control of Pollution) Act, 1974 and Rules 1974;

j) Guidelines to control and regulate ground water extraction in India, 24th September 2020, Central Ground Water Authority;

k) The Solid Management Rules, 2016;

l) The Construction and Demolition Waste Management Rules, 2016;

m) The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016;

n) The Bio-medical Waste Management Rules, 2016;

o) Plastic Waste Management Rules, 2016;

p) E-Waste (Management) Rules 2016;

q) The Batteries (Management and Handling) Rules, 2001;

r) Manufacture, Storage and Import of Hazardous Chemical (Amendment) Rules, 1989;

s) Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act 2010;

t) Fly ash utilization notification, Sept 1999;

u) Applicable NGT Guidelines issued time to time; and

v) Provisions of Graded Response Action Plan notified by the MoEFCC.

6.2.2. If the requirements stated in this document are in conflict or inconsistent with the requirements of applicable laws, the more stringent requirements shall apply.

6.2.3. The Contractor shall comply the Environmental and Social Framework (ESF) of Asian Infrastructure Investment Bank (AIIB) February 2016.

6.2.4. It is also the Contractor's responsibility to obtain all official approvals, consents or other authorizations as may be necessary to comply with the relevant statutes, and to pay all

related fees and other costs. The Contractor shall obtain all authorizations in a timely manner and submit to the Engineer as the evidence for the regulatory obligations before commencement of any related construction activity.

6.2.5. Contractor shall apply and take various environment clearances from the concerned agencies as presented in Table below. These clearances are indicative, and Contractor is required to take any other clearance as required for its construction activities.

Clearance/ Permission//Permit	**Relevant Acts/Rules**	**Concerned Agency**
Consent to Establish and Consent to Operate batching plants and casting yards	• The Water (Prevention and Control of Pollution) Act, 1974, and its amendments; • The Air (Prevention and Control of Pollution) Act 1981 and its amendments	Haryana Pollution Control Board
Authorization for generation, handling, storage and transportation of hazardous waste	Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016	Haryana Pollution Control Board
Permission for extraction of ground water	Central Ground Water Authority guidelines to regulate and control ground water extraction in India, 24th September, 2020	Central Ground Water Authority
Pollution Under Control Certificate	Central Motor and Vehicle Act 1988, Vehicular Exhaust Norms, CPCB 2007	Department of Transport, Government of Haryana
Construction and Demolition Waste Management Plan	Construction & Demolition Waste Management Rules, 2016	Local Authority (Municipal Corporation)
Cutting of trees	Punjab Land Preservation Act, 1900 (PLPA, 1900)	Forest Department, Haryana

6.3. Environmental Friendly Construction Practices

6.3.1 Containment of Air Pollution

a) **During Transport of Material**

i) The Contractor shall take precautions to minimise visible particulate matter from being deposited upon public roadways as a direct result of his operations. Precautions include removal of particulate matter from equipment before movement to paved streets or prompt removal of material from paved streets onto which such material has been dropped;

ii) All construction equipment should be washed clean of visible dirt/mud before exiting the construction sites. Any deposition of material on public streets by construction equipment should be removed by manual sweeping, or by deploying electro – mechanical devices;

iii) The Contractor shall provide a wash pit or a wheel washing and/or vehicle cleaning facility at the exits from work sites such as construction depots and batching plants. At such facility, high-pressure water jets will be directed at the wheels and the body of vehicles to remove all spoil and dirt. Water shall be pumped through an electrically operated pump set, to hydrants attached with rubber hoses, by activation of push button located at the hydrant, allowing for up to 10 minutes of wash time;

iv) Wheel washing facilities and/or vehicle cleaning facility will be provided with efficient drainage, incorporating silt traps to prevent any excessive build up of water. These facilities could include water re-circulation apparatus to minimise water consumption. At the wheel wash facility, water, dirt, gravel etc. shall be drained into precast trench drains with removable grated cover. This dirty water shall flow, through a piping, into solids separator and from there to oil separator before final discharge;

v) Where wheel-washing facility is not possible, the Contractor shall ensure manual cleaning of wheels by wire brushes or similar suitable means;

vi) The Contractor shall ensure that vehicles with an open load carrying shall not be used for moving potentially dust-producing materials. Vehicles shall have properly fitting side and tailboards. Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be carried in vehicles fitted with cover lids or tarpaulin covers;

b) **At Dumping Sites**

i)The Contractor shall place excavated materials in the dumping/disposal areas

designated in the drawings;

ii) The Contractor shall place material in a manner that will minimise dust production. Material shall be stabilised each day by watering or other accepted dust suppression techniques;

iii) Materials should not be dropped from more then 1.5 m to limit fugitive dust generation;

iv) The Contractor shall stockpile material in the designated and approved locations with suitable slopes. Access to the site shall be regulated for entry of men, material and machine.

v) During dry weather, dust control methods such as water sprinkling must be used daily at every two hours intervals especially on windy, dry days to prevent any dust from blowing and causing nuisance. During rains, the stockpile may be covered with tarpaulin or similar material to prevent run off;

vi) The Contractor shall provide water sprinkling at any time that it is required for dust control use;

vii) Sufficient equipment, water, and personnel shall be available on dumping sites at all time to minimise dust formation and movements to prevent nuisance;

viii) Dust control activities shall continue even during work stoppages.

c) **At Construction Site**

i) At each construction site, the Contractor shall provide storage facilities for dust generating materials and shall be closed containers/bins or wind protected shelters or mat covering or walled or any combination of the above to the satisfaction of the Engineer. The Contractor shall spray water at construction sites as required to suppress dust, during handling of excavation soil or debris or during demolition;

ii) Stockpiles of sand and aggregate greater than 20m3 for use in concrete manufacture shall be enclosed on three sides, with walls extending above the stockpile and two (2) metres beyond the front of the stockpile;

iii) Effective water sprays shall be used during the delivery and handling of all raw sand and aggregate and other similar materials, when dust is likely to be created and to dampen all stored materials during dry and windy weather;

iv) Areas within the Site such as construction depots and batching plants, where there is a regular movement of vehicles shall have an approved hard surface that is kept clear of loose surface material;

v) Unless the Engineer has given notice otherwise, the Contractor shall restrict all

motorised vehicles on the Site to a maximum speed of 15 kilometres per hour and confine haulage and delivery vehicles to the designated roadways inside the site;

vi) At the Batching plant the following additional conditions shall be complied with:

A) The Contractor shall undertake at all times the prevention of dust nuisance as a result of his activities;

B) The Contractor shall frequently clean and water the concrete batching plant and crushing plant sites and ancillary areas to minimise any dust emission.

vii) The Contractor shall erect hoardings as specified in Engineer requirements securely around all construction work sites during the main construction activity, to contain dust within the site area and also to reduce air turbulence caused by passing traffic. The hoarding shall be safely secured to the ground to prevent from toppling with minimum gap between the base of hoarding and ground surface.

d) **During Drilling and Blasting**

i) Water spray should be used to control dust during breaking of rock/concrete;

ii) During blasting operations, appropriate precautions should be taken to minimise dust such as the use of blast nets, canvas covers and watering;

iii) Wire mesh made of heavy-duty tyres or sand bags should be used over blast area on each shot to prevent flying rock and reduce dust;

iv) Blasting technique should be consistent not only with nature and quantity of rock to be blasted but also the location of blasting;

v) The Contractor shall give due preference to explosives with better environmental characteristics;

vi) Vibration shall be monitored during blasting and values shall not exceed the standards.

6.3.2 Containment of Water Pollution

a) The Contractor shall comply with the Indian Government legislation and other State regulations in existence in Haryana insofar as they relate to water pollution control and monitoring;

b) At construction depots and batching plants temporary drainage works should be maintained, removed and reinstated as necessary and all other necessary precautions should be taken for avoidance of damage by flooding and silt;

c) A Drainage system should be constructed during the commencement of the works, drain off all surface water at the site into suitable drains;

d) Sedimentation tanks or other acceptable measures, of sufficient capacity to trap silt-laden water before discharge into the outlet drain should be provided. The system should be flexible and be able to handle multiple inputs from a variety of sources;

e) Temporary open storage of excavated materials meant for backfilling on site, should be covered with tarpaulin or similar fabric during rainy season or at any time of the year when rainstorms are likely. Washout of construction or excavated materials should be diverted to drainage system through appropriate sediment traps;

f) All water and waste products (surface runoff and wastewater) arising on the site shall be collected and removed from the site via a suitable and designated temporary drainage and disposed off at allocation and in a manner that will leave neither pollution nor nuisance;

g) The Contractor will not be permitted to directly discharge, to the drainage system, unused trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavation should be discharged into storm ground water obtaining from the excavation without obtaining notice of no objection from the Agency controlling the system;

h) The Contractor shall prevent soil particles and debris from entering the wells or water discharge points by use of filters and sedimentation basins as required;

i) The Contractor shall provide treatment facilities as necessary to prevent the discharge of contaminated ground water;

j) The Contractor shall at all times ensure that all existing stream courses and drains within, and adjacent to the site are kept safe and free from any debris and any excavated materials arising from the Works;

k) The Contractor shall discharge wastewater arising from site offices, canteens or toilet facilities constructed by him into sewers after obtaining prior notice of no objection of agency controlling the system. A wastewater drainage system shall be provided by the Contractor to drain wastewater into the sewerage system;

l) The Contractor shall take measures to prevent discharge of oil in land and water bodies. Oil separator/interceptors shall be provided at Batching Plant and construction depot location for vehicle maintenance to prevent the release of oils and grease into the drainage system. These shall be cleaned on a regular basis;

m) A Spill Prevention and Control Procedure shall be prepared to identify project components such as storage areas, storage tanks that could allow discharge of oil

grease or hazardous materials to the drainage system or ultimately in any water body during spillage. The volume of spill should be calculated as well as storage volume to contain spill within the materials storage containment areas. The procedure shall include measures to contain and mitigate transportation of oil, grease or hazardous materials to the drainage system or any water body;

n) The Contractor shall ensure that earth, bentonite, chemicals and concrete agitator washings etc. are not deposited/drained in the watercourses but are suitably treated and effluents and residue disposed off in a manner approved by local Regulatory Authorities;

o) Construction works should be programmed to minimize soil excavation works in rainy season. If excavation in soil could not be avoided in these months or at any time of year when rains are likely, for the purpose of preventing soil erosion, temporarily exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Arrangement should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of rains;

p) Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system;

q) Wastewater from Concrete Batching & Precast Concrete Casting and that generated from the washing down of mixer trucks and drum mixers and similar equipment should wherever practicable be recycled. The discharge of wastewater should be kept to a minimum;

r) The section of construction road between the vehicle washing bay and the public road should be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains;

s) Surface run-off should be segregated from the concrete batching plant and casting yard area as much as possible and diverted to the storm water drainage system. Surface run-off contaminated by materials in a concrete batching plant or casting yard must be treated to, within the discharge norms before disposal into storm water drains;

t) The Contractor shall apply to the appropriate authority for installing bore wells for water. supply at site;

6.3.3 Containment of Noise

a) To the extent required to meet the noise limits, the Contractor shall use reasonable efforts to include noise reduction measures listed below to minimize construction noise emission levels. Noise reduction measures – include, but not limited to the following:

   i) Minimize the use of impact devices, such as jackhammers, and pavement breakers. Where possible, use concrete crushers or pavement saws for tasks such as concrete deck removal and retaining wall demolition;

   ii) Equip noise producing equipment such as jackhammers and pavement breakers with acoustically attenuating shields or shrouds recommended by the manufacturers thereof, to meet relevant noise limitations;

   iii) Pneumatic impact tools and equipment used at the construction site shall have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations;

   iv) Provide mufflers or shield panelling for other equipment, including internal combustion engines, recommended by manufacturers thereof;

   v) Employ prefabricated structures instead of assembling on-site;

   vi) Use electric instead of diesel-powered equipment;

   vii) Use hydraulic tools instead of pneumatic impact tools.

b) Maximize physical separation, as far as practicable, between noise generators and noise receptors. Separation includes following measures:

   i) Provide enclosures for stationary items of equipment and barriers around particularly noisy areas on site;

   ii) Locating stationary equipment in such a way, so as to minimize noise and vibration impact on community.

c) To the extent feasible, configure the construction site in a manner that keeps noisier equipment and activities as far as possible away from noise sensitive locations and nearby buildings. Plant and equipment known to emit noise strongly in one direction should where possible, be oriented in a direction away from noise sensitive receptor and reduce the number of plant and equipment operating in critical areas close to noise sensitive receptors.

d) Scheduling truck loading, unloading, and hauling operations in such a way so as to minimize noise impact near noise sensitive locations and surrounding communities;

e) Minimize noise intrusive impacts during most noise sensitive hours by adopting the following:

i) Plan noisier operations during times of highest ambient noise levels;

ii) Keep noise levels relatively uniform; avoid excessive and impulse noises;

iii) Equipment and plant are not to be kept idling when not in use.

f) Use only well maintained plant/equipment at site, which should be serviced regularly;

g) Maintain equipment such that parts of vehicles and loads are secure against vibrations and rattling;

h) Grading of surface irregularities on construction sites to prevent the generation of impact noise and ground vibrations by passing vehicles;

i) Schedule work to avoid simultaneous activities that generate high noise levels;

j) The construction of temporary noise barriers;

k) If back-up alarms are used on construction equipment, their noise emission level near noise sensitive receptors such as residences, schools, hospitals and similar areas where calmness is essential, should be regulated, especially at night time;

l) Select truck routes for muck disposal so that noise from heavy-duty trucks will have minimal impact on sensitive areas (e.g., residential);

m) Conduct truck loading, unloading and hauling operations in a manner such that noise and vibration are kept to a minimum;

n) Avoid operating truck on streets that pass by schools during school hours;

o) The Contractor shall make efforts to bring down the noise levels due to the DG set, outside his premises, within the ambient noise requirements by proper setting and control measures;

p) Installation of a DG set must be strictly in compliance with the recommendations of the DG set manufacturer. The Contractor shall ensure that all necessary permissions/ approvals/consent is obtained from relevant authorities before installation and operation of Generator set;

q) A proper routine and preventive maintenance procedure for the DG set should be set and followed in consultation with the DG set manufacturer which would help prevent noise levels of the DG set from deteriorating with use;

r) At all times noise levels due to construction activities/DG sets etc. shall comply the standards set out by CPCB/SPCB;

s) If the measures to control noise pollution are found to be ineffective, the employer

may issue stop work order till the time remedial measures are found to be effective to the satisfaction of employer.

6.3.4 Containment of Waste

a) The Contractor is required to develop, institute and maintain a Waste Management Plan (WMP) during the construction of the project for his works, which may include:

   i) Identification of disposal sites;

   ii) Identification of quantities to be excavated and disposed off;

   iii) Identification of split between waste and inert material;

   iv) Identification of amounts intended to be stored temporarily on site location of such storage;

   v) Identification of intended transport means and route;

   vi) Obtaining permission, where required, for disposal;

b) Such mechanism is intended to ensure that the designated area for the segregation and temporary storage of reusable and recyclable materials are incorporated in the WMP. The WMP shall be prepared and submitted to Engineer for approval.

c) The Contractor shall handle waste in a manner that ensures they are held securely without loss or leakage thus minimizing potential for pollution. The Contractor shall maintain and clean waste storage areas regularly;

d) Careful design, planning and good site management can minimise waste of materials such as concrete, mortars and cement grouts. The Contractor shall ensure regular maintenance and cleaning of the waste storage areas;

e) Construction activities are expected to generate a variety of waste such as:

   i) General refuse;

   ii) Construction Waste including waste from excavated material;

   iii) Chemical waste;

   iv) Hazardous waste; and

   v) Biomedical waste.

   Handling and disposal of such waste may cause environmental degradation and nuisance. To prevent it, such waste has to be handled and disposed properly. As such, transportation and disposal of all waste shall be strictly managed;

f) The Contractor shall make arrangements to dispose of metal scrap and other waste to authorised vendors and make available to Employer/Employer Representative on request and records;

General Refuse

g) Each worksite would generate general refuse including paper and food waste. There is likely to be a concentration of such waste at batching plants on major worksite. The storage of general refuse has the potential to give rise to negative environmental impacts;

h) Burning of wastes is prohibited. The Contractor shall not burn debris or vegetation or construction waste on the site;

i) Handling and disposal of general refuse shall cope with the peak construction workforce during the construction period. The refuse shall be stored and transported in accordance with good practice and disposed at licensed landfills;

j) General refuse shall be stored in enclosed bins or units and has to be separated from construction and chemical wastes. An authorised waste collector shall be employed by the Contractor to remove general refuse from the site, on a daily basis to minimise odour, pest and litter impacts.

Construction and Demolition Waste

k) Construction Waste would mainly arise from the project construction activities and from the demolition of existing structures where necessitated. It includes unwanted materials generated during construction, rejected structures and materials, materials that have been over-ordered and materials, which have been used and discarded such as:

i) Material and equipment wrapping packaging material;

ii) Unusable/surplus concrete/grouting mixes;

iii) Damaged/contaminated/surplus construction materials;

iv) Wood from formwork and false work;

v) Also, demolition of buildings and houses if any, will generate concrete rubble, plastics, metal, glass, asphalt from surfaces, wood and refuse.

l) Construction & Demolition (C&D) waste shall be stored at a designated area;

m) The C&D waste shall be disposed off in a manner in compliance with the procedure given in the Construction & Demolition Waste Management Rules,

2016;

n) The Contractor shall be responsible for collection, segregation and storage of construction and demolition waste, as directed or notified by the concerned local authority in consonance with the Construction & Demolition Waste Management Rules, 2016;

o) The Contractor shall ensure that other waste does not get mixed with this waste and is stored and disposed separately;

p) The Contractor shall dispose C&D waste only at authorized processing facilities and ensure that there is no littering or deposition of construction and demolition waste so as to prevent obstruction to the traffic or the public or drains;

q) Disposal of C&D waste along the riverbed, natural drainage and wet land is strictly prohibited and the Contractor shall be fined for noncompliance of this requirement in addition to the penalty imposed by the NGT from time to time;

r) The requirement of concrete/RCC/PCC waste disposal, generated from the entire contract shall be either when 15 Tonnes of C&D waste which has been generated or such C&D waste has been stored for 15 days (irrespective of quantity), of the two whichever is earlier;

s) A proper arrangement for record keeping has to be maintained to ensure disposal of C&D waste to C&D waste recycling plant. Contractor shall submit the record of C&D waste disposal to recycling facility, in his Monthly Environment Report;

Hazardous Waste

t) If encountered or generated as a result of Contractor's activity, then waste classified as hazardous under the "Hazardous Waste (management, handling and trans-boundary movement) rules, 2016" shall be disposed off in a manner in compliance with the procedure given in the rules under the aforesaid act;

u) Chemicals classified as hazardous chemicals under "Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 of Environment (Protection) Act, 1986 shall be disposed off in a manner in compliance with the procedure given in the rules under the aforesaid act;

v) Hazardous waste would mainly arise from the maintenance of equipment. These may include, but not be limited to, the following:

i) Used engine oils, hydraulic fluids and waste fuel;

ii) Spent mineral oils/cleaning fluids from mechanical machinery;

iii) Scrap batteries or spent acid/alkali; and

iv) Spent solvents/solutions, some of which may be derived, from equipment cleaning activities.

w) The Contractor shall identify all the hazardous waste generated as a result of his activities. If such waste is generated then the Contractor shall apply to State Pollution Control Board for 'authorisation' according to Form 1 of the Hazardous Waste (Management & Handling) Rules and dispose the same only to currently authorised recyclers (a list of which can be obtained from Haryana Pollution Control Board) under intimation to the Employer's Representative;

x) Waste oil and chemical containers shall be delivered to the Contractor's Storage yard. The Contractor is responsible for the correct storage and handling of waste oil/waste chemical containers for such a time until they are transported to the chosen disposal area or waste oil containers;

y) For disposal of waste requiring special attention and hazardous waste the Contractor shall enter into agreement with authorised agencies dealing with the same;

z) The hazardous waste shall be stored on an impermeable surface with containment bunding to retain leaks, spills and ruptures;

aa) All waste collection containers shall be of appropriate size with a closed lid. Each container will be clearly labelled both with a colour code system and labelled in local language and English. Original labels of empty containers should be completely covered and the contents of the type of waste stored in the used containers clearly indicated.

Bio medical waste

bb) The Contractor shall not mix Biomedical Waste & General Waste. Storage time of waste shall be as less as possible so that waste storage, transportation and disposal is done within 48 hours;

cc) All bags or containers containing segregated bio-medical waste shall be labelled (including bar code) as per Bio Medical Waste Rules before disposal;

dd) The contactor shall ensure Adequate number of colour coded bins/containers or bags shall be available at the point of generation of bio-medical waste;

ee) The contactor shall ensure Posters/ placards for bio-medical waste segregation shall be installed at the point of generation;

ff) General waste should not be collected at the same time or in the same trolley in which bio-medical waste is collected;

gg) Disposal of biomedical waste shall be through a licensed waste collector, duly authorized by MoEFCC or Haryana Pollution Control Board as the case may be. License of the waste collector shall be shown to the Employer's Representative on demand;

hh) Bio-medical waste collected by the staff, shall be provided with PPEs.

Storage and Segregation of Waste

ii) Collection and storage points shall be established around all construction work sites. The waste containers shall be of at least 50L/100L;

jj) Different areas of the worksites shall be designated for such segregation and storage wherever site conditions permit;

kk) Outside the storage area, the Contractor shall place a 'display board', which will display quantity and nature of waste;

ll) Segregation of Waste shall be done on site. All waste shall be stored in different coloured bins as per table below:

Storage of Waste

Type of Waste	**Colour**
Wet/Organic/ Bio-Degradable Waste	Green Bins with lids
Dry/Recyclable waste (excluding Bio-medical waste/ hazardous waste)	Blue
Bio-Medical waste	Red with lids
E-Waste	Black
Hazardous Waste	Brown
COVID Waste	Yellow

mm) On-site measures promoting proper segregation and disposal of construction waste shall be implemented.

6.3.5 Housekeeping

a) The Contractor shall constitute a special group of housekeeping personnel in -

charge of each work section. Site Engineer of each section or work areas shall be responsible for housekeeping at their respective sites;

b) Each section of work site shall maintain the site reasonably clean, keep free from obstruction and properly store any construction equipment, tools, and materials. Any wreckage, rubbish shall be temporarily stored in wreckage and rubbish bins. These wreckage and rubbish bins shall be cleaned at frequent intervals. Special housekeeping group will ensure daily cleaning work at the site and its surrounding areas;

c) General Housekeeping shall be carried out and ensured at all times at work sites, Labour Camps, Stores and Offices;

d) Full height fence, barriers etc. will be installed at the site in order to preserve the surrounding area from excavated soil, rubbish etc which may cause inconvenience to public.

e) The Contractor will ensure that all sub-Contractors maintain the site reasonably clean through the sub-contract's provision related to housekeeping;

f) The Contractor's designated department through daily pre-work meeting (tool box talk), safety meeting etc. will impart the necessary introduction and education to labour on housekeeping. Other staff such as supervisors and engineers working at the site will also be educated on the necessity of good housekeeping;

g) Every individual would be responsible for housekeeping in his area i.e.

i) At Work Site: All workers shall clean their work place after completion of their job. Supervisor shall ensure good housekeeping of their respective work area through their workers. Section Managers shall ensure housekeeping in their area through their supervisors. Contractor's designate department will monitor this activity through section manager as well as site supervisor;

ii) At Labour Camp: All workers shall be responsible to maintain good housekeeping and hygienic condition in their respective rooms/dormitories. The Contractor shall ensure the availability of dustbins at required place and regular cleaning of rooms, kitchens, toilet blocks and dustbins. Safe disposal of all waste materials shall also be ensured. Arrangement for regular fumigation shall be made by the Contractor;

iii) At Store: Proper access and stacking shall be ensured at the Stores. A list will display daily stock of materials. All work material shall be stored in clearly marked containers or at designated storage area;

iv) At Office: Everyone is responsible to maintain housekeeping of their work

station. Disposal of waste materials (i.e. stationary, cigarette butts, tea bags etc.) must be in dustbin only.

6.3.6 Avoidance of Nuisance

a) The Contractor shall take all precautions to avoid any nuisance arising from his operations. This shall be accomplished, wherever possible by suppression of nuisance at source rather than abatement of the nuisance once generated;

b) Following site clearing and before construction, the Contractor shall remove all trash, debris and other weeds;

c) The Contractor shall ensure that the work place is free of trash, garbage, debris and weeds;

d) The Contractor shall provide at site, metal or heavy-duty plastic 'Refuse Containers' with tight fitting lids for disposal of all garbage or trash associated with food;

e) To keep the area free of litter and garbage, specific locations shall be designated for consuming food and snacks to prevent random disposal of waste. All waste shall be deposited in the refuse containers. Suitable all weather signage shall be prominently displayed for compliance of these requirements;

f) The refuse containers shall be kept upright with their lids shut. These containers shall be emptied at least once daily by the Contractor to maintain site sanitation. There shall be different containers for bio-degradable/recyclable and hazardous (flammable) wastes;

g) All plants/equipment/machinery shall be well maintained by regular servicing and kept free from oil/grease dripping. Drip pans of suitable size shall be used to collect oil leakages and spills. The area shall be cleaned after completion of maintenance/repair and generated waste disposed off in approved manner;

h) The Contractor shall make available Material Supply Data sheet (MSDS) for material/chemicals/substances used, for which these are available to the Engineer when requested;

i) Such material/chemicals/substances used shall be treated, handled, stored, transported and disposed off, by the Contractor, in a manner specified in the MSDS.

6.3.7 Landscape, Greenery and Aesthetics

a) As far as is reasonably practicable, the Contractor shall maintain ecological balance by preventing deforestation and defacing of natural landscape. In respect of

ecological balance, the Contractor shall observe the following instructions.

b) The Contractor shall, so conduct his construction operations, as to prevent any avoidable destruction, scarring or defacing of natural surroundings in the vicinity of work;

c) Where destruction, scarring, damage or defacing may occur as a result of operations relating to Permanent or Temporary works, the same shall be repaired, replanted or otherwise corrected at Contractor's expense. All work areas shall be smoothened and graded in a manner to conform to natural appearance of the landscape as directed by the Engineer;

d) The Contractor shall be able to demonstrate evidence that the landscape and aesthetics quality during construction have been considered and appropriate actions have seen taken to mitigate negative impacts due to construction;

e) Light used for construction lighting can illuminate adjacent areas in undesired ways. Such lighting and glare shall be prevented from striking adjacent areas, where feasible, through directional shielding;

f) The other measures include but not limited to:

i) Erection of decorative screen hoarding prominently displaying the logo of HRIDC;

ii) Minimising height of temporary buildings;

iii) Careful positioning of construction equipment;

iv) Eliminating the possibility of stockpiles of material from being visible to public;

v) Strategically placing hi visibility site markings at construction sites indicating facilities, offices and stores;

vi) Adequate and properly managed parking of vehicles at construction depots and batching plants;

g) **Tree Felling**

i) The Contractor shall identify the number of trees that are required to be felled as a result of construction of works and facilities related to project and inform to the Engineer;

ii) All trees and shrubs, which are not specifically required to be cleared or removed for construction purposes, shall be preserved and shall be protected from any damage that may be caused by Contractor's construction operations and equipment. The Contractor shall not fell, remove or dispose of any tree or

forest produce in any land handed over to him for the construction of works and facilities related to project except with the previous permission obtained from the Forest Department;

iii) Special care shall be exercised where trees or shrubs are exposed to injuries by construction equipment, blasting, excavating, dumping, chemical damage or other operation and the Contractor shall adequately protect such trees by used of protective barriers or other methods approved by Engineer;

iv) Trees shall not be used for anchorage.

6.3.8 Energy Management

a) By using energy efficiently, the same services can be delivered with less energy, which helps protect the environment by preventing pollution;

b) Measures to conserve energy include but not limited to the following:

i) Use of energy efficient motors and pumps;

ii) Use of energy efficient lighting, which uses energy efficient luminaries;

iii) Adequate and uniform illumination level at construction sites suitable for the task;

iv) Proper size and length of cables and wires to match the rating of equipment;

v) Use of energy efficient air conditioners.

c) The Contractor shall optimize the use of tools and plants and equipment to perform tasks with correct power. Optimizing cable sizes and joints can control voltage drops;

d) The Contractor shall use energy efficient pumps (at least 80% efficiency) and motors (95% efficiency or more). The efficiency shall be measured during installation and also periodically;

e) The Contractor shall use Diesel Generating sets that have specific fuel consumption of at least 3.5 units per litre of diesel. The Contractor should rigorously follow the maintenance regime of his DG sets;

f) The Contractor shall maximize the use of energy efficient luminaries such as LED's, metal halide lamps and similar and ensure optimum illumination levels to save energy. The Contractor shall make provision of Earth Leakage Circuit Breakers (ELCBS) to prevent loss of excessive earth currents which are unsafe;

g) The Contractor shall plan in advance and select locations to receive and store material such that these are at the least distance from place of use. Such an

approach will result in less energy being consumed since optimum energy will be expended for transport of material;

h) The Contractor shall plan works in a manner as to avoid reworking especially during meeting the interface requirements of systems Contractor;

i) The Contractor shall design site offices maximum daylight and minimum heat gain. The rooms shall be well insulated to enhance the efficiency of air conditioners and the use of solar films on windows may be used where feasible;

j) The Contractor shall use and maintain equipment so as to conserve energy and shall be able to produce demonstrable evidence of the same to the Engineer.

6.3.9 Archaeological And Historic Resources

During the construction period, Archaeological or Historic resources may potentially be affected by direct or indirect construction activity. If any such structures are likely to be affected, special measures to be initiated with the notice of no objection of the Engineer.

a) The Contractor shall consult the Archaeological Survey of India (ASI) and other parties, on the advice of the Engineer, to identify and assess construction effects and seeks ways to avoid, minimize or mitigate adverse effects on such monuments;

b) Adverse effects may include reasonably foreseeable effects caused by the construction that may occur later in time, be farther removed in distance or those that alter, howsoever temporarily, the significance of the structure;

c) Prior to the initiation of construction, Engineer intends to review a resource protection plan for historic structures where it appears that they may be affected by the project. This plan will be developed by the Contractor in consultation with The Archaeological Survey of India (ASI);

d) The plan will identify the sensitive resources as well as specify the construction monitoring requirements. These requirements may include ground vibration monitoring and recording any components inadvertently subjected to impact;

e) The Contractor shall stop work immediately and notify the Engineer if, during construction, an archaeological or burial site is discovered. The work will not recommence until approval of the Engineer is obtained for the same.

6.3.10 Fly Ash

The Contractor shall use fly ash as a percentage substitution of cement, in concrete for certain structures and works as prescribed in the latest MoEFCC fly ash notification dated September 1999 and its subsequent amendments. The notification makes it mandatory for use of fly ash-

based products in construction activities located within 300Km from coal or lignite based thermal power plants.

As per the notification, only fly ash based products shall be used for construction such as cement or concrete, fly ash bricks or blocks or tiles or clay fly ash bricks, block or tiles or cement fly ash bricks or bricks or blocks or similar products or a combination or aggregate of them. The Contractor shall provide details of usage of such products to Engineer.

In all such uses of Fly Ash, the Contractor shall maintain a detailed record of usage of Fly Ash. The Contractor shall also collect related details and provide to the Employer.

6.4. Environmental Monitoring

6.4.1 Baseline Study: Before commencement of actual construction work, all items and parameters **specified** in ESHS Management Plan shall be monitored once as the baselines of the environmental condition prior to the construction and compared with the monitored values during the construction period;

6.4.2 Qualification of Monitoring Agency: Monitoring shall be conducted by the qualified agencies (MoEFCC approved or NABL accredited) and approved by the Engineer having capabilities of conducting environmental monitoring;

6.4.3 Enforcement of the Monitoring: Monitoring plan shall be proposed in the Contractor's ESHS Management Plan and must be approved by the Engineer before commencement of the monitoring. The Contractor shall monitor the prescribed environmental parameters and confirm the compliances of the permissible standards. If the monitoring results are in excess of baseline and standards, cause analyses and necessary counter measures shall be proposed to the Engineer in the monitoring reports;

6.4.4 Location, Parameters, and Frequency of the Monitoring: Environmental Monitoring will be carried out for Air, Noise, Vibration, Water Quality (Both Ground water and surface water), Waste, Hazardous waste. Parameters, standards, location and frequency are given in following tables.

Parameters, Standards, Location and Frequency of Monitoring

Parameters	Sampling Standards	Location	Frequency
Air (PM_{10}, $PM_{2.5}$)	CPCB (2011) Guidelines for the Measurement of Ambient Air	One representative location within each construction yard and batching plant	Monthly

Parameters	Sampling Standards	Location	Frequency
	Pollutants, Manual Sampling & Analyses	Closest residential or commercial area (one location) within 100m from each active construction site or representative locations approved by the Engineer	Monthly
Noise **Day Time** (6 AM – 10PM) L_{max}, L_{min}, L_{eq}, L_{10}, L_{90}, L_{50} **Night Time** (10PM – 6AM) L_{max}, L_{min}, L_{eq}, L_{10}, L_{90}, L_{50}	CPCB (2015) Protocol for Ambient Level Noise Monitoring	One representative location within each construction yard and batching plant	Weekly
		Closest residential or commercial area (one location) within 100m from each active construction site or representative locations approved by the Engineer	Weekly
Vibration (in mm/s or VdB)	IS 14884 (2000)	During complaints or as directed by employer.	
Drinking/Ground Water (pH, Total Alkalinity, Electrical Conductivity, Total Dissolved Solids, Fluoride, Arsenic, Nitrate, Iron,, Lead, Cadmium, E-coli)	IS 3025 (2008) & IS 10500 (2012)	**Drinking water**: construction yard, batching plant and labour camps	Quarterly (April, July, October, January)
		Groundwater: one representative tube/bore well in the adjacent residential area or within 100m from each active construction site	Quarterly (April, July, October, January)
Surface Water pH, Total Dissolved Solids, Fluoride, Arsenic, , Iron, , Lead, , E-coli	IS 3025 (2008) & IS 2296 (1982) & CPCB (2012) Guide Manual Water and Wastewater Analysis	Upstream and downstream of the river/stream if any. Any natural water course (ex. Pond etc) located or within 100	Quarterly (April, July, October, January)

Parameters	Sampling Standards	Location	Frequency
		m of each a) construction yard, b) labour camp, and c) active construction site	
Waste	Not available but fully complying with monitoring the quantities of wastes specified by the Solid Management Rules 2016 & the Construction and Demolition Waste Management Rules 2016	Each construction yard and construction site	Quarterly (April, July, October, January)
Hazardous waste	Not available but typed reporting (not hand writing) fully complying with monitoring the quantities of wastes specified by the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016,	Each construction yard and active construction site	Quarterly (April, July, October, January)
Complaints if any		All Works' related locations	Weekly

6.5. Complaint Response Process

6.5.1 Enquiries, complaints and requests for information can be expected from a wide range of individuals and organisations both private and government. The majority of complaints is likely to be received by HRIDC, although the site offices are also likely to be contacted;

6.5.2 The objective of complaint process is to ensure that public and agency complaints are addressed and resolved consistently and expeditiously;

6.5.3 The Contractor's Project Manager will be notified immediately on receipt of complaint that may relate to environmental impacts. The Project Manager will immediately inform the Engineer;

6.5.4 Field investigation shall determine whether the complaint has merit, and if so action shall be taken to address the impact;

6.5.5 The outcome of the investigation and the action taken shall be documented on a complaint Performa prepared by the Contractor and submitted for notice by the Engineer in advance of the works;

6.5.6 Where possible, a formal response to each complaint received shall be prepared by the Contractor within seven days in order to notify the concerned person(s) that action has been taken.

6.6. Social Legal Requirement

6.6.1 The Contractor shall always comply with all relevant national and state legislations regarding social safeguard including but not necessarily limited to, the following with their latest amendments

a) National Policy for the Empowerment of Women, 2001;

b) The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013;

c) The Protection of Children from Sexual Offences Act, 2012;

d) The Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (Prevention and Control) Act, 2017;

e) Child Labour (Prohibition & Regulation) Act 1986

f) Some of the key International instruments for the protection of women include the following:

g) United Nations General Assembly, Resolution 52/86 on Crime Prevention and Criminal Justice Measures to Eliminate Violence Against Women, 2 February 1998;

h) United Nations Security Council Resolution 1325 on Women, Peace and Security, 31 October 2000;

i) Environmental and Social Framework (ESF) of Asian Infrastructure Investment

Bank (AIIB) February 2016

j) Child Labour and Bonded Labour

k) The Contractor shall not hire children of less than 14 years of age and shall not engage bonded labour.

6.7. Gender equality

6.7.1 The Contractor is responsible for providing equal opportunities to both genders and end gender related discrimination, if any. The ESHS Committee will proactively identify cases of gender discrimination with key focus on the following topics:

a) Gender based violence, including sexual harassment at the workplace;

b) Disparity in benefits provided;

c) Termination on account of pregnancy.

6.8. Cultural and Religious Issues

6.8.1 Disturbance from construction works to the cultural and religious sites, and Contractors lack of knowledge on cultural issues cause social disturbances. The Contractor shall

a) Communicate to the public through community consultation, informing the peers and newspaper announcements regarding the scope and schedule of construction, as well as certain construction activities causing disruptions or access restriction;

b) Not block access to cultural and religious sites and sites of importance for livelihood activities, wherever possible;

c) Need to take mitigation measures while working near religious place/ educational institutions close to the construction sites;

d) Provide freedom to construction workers to observe their cultural and religious practices;

e) Monitor and be responsible for the behaviour of construction workers especially migrant workers towards the community. The workers must be debriefed well regarding local aspects and need to follow good behaviours, and informed regarding unexpected behaviours at the time of employing;

f) Resolve cultural issues in consultation with local leaders and Project Manager;

g) Establish a mechanism that allows local people to raise grievances (directly and

indirectly) arising from the construction process;

h) Inform the local authorities responsible for health, religious and security duly informed before commencement of civil works so as to maintain effective surveillance over public health, social and security matters.

6.9. Guidelines for Addressing GBV in Projects

6.9.1 The Contractor's ESHS Plan shall include implementation of Gender Based Violence (GBV), Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) Prevention and Response Action Plan. This action plan shall describe Code of Conduct (CoC), mechanism to address such incidents, assess the project scenario and potential risks of GBV/SEA/SH, training plan for workers on GBV/SEA/SH and awareness programme amongst workers regarding socially, culturally appropriate behaviour that would ensure that the project community and women in particular are safe, secured, and not vulnerable to abuse. A sample GVB/SEA/SH action plan is given in Table below.

Table - GBV/SEA/SH Prevention Action Plan

Objective	Activity	Responsibility
Assess Potential Risk of GBV	Rapid assessment of worksite, project footprint (e.g. community structure, local self-governance, national regulations, history of incidence), type of workers (local or migrant) for possible GBV risk.	As part of the social impact assessment (to be updated at the time of construction).
Inclusive development	• Engage women in project planning and implementation • Incorporate women's feedback in project design and construction schedule • Organize systematic consultations with women to ensure continuous feedback on projects and identify any gender-	

Objective	Activity	Responsibility
	sensitive adverse impacts	
Training – women	• Sensitization of women on GBV and women's rights to avoid/avert such incidents • Sensitization of women on actions to be taken in case of GBV	
Training – men	• Sensitization of male workers on GBV and women's rights to avoid/avert such incidents • Sensitization of male workers on actions to be taken in case of GBV • Sensitization of male workers on appropriate socially and culturally acceptable behaviour towards women • Training of managers on methods of dealing with cases of GBV	
Awareness generation	• Distribution of leaflets propagating gender-appropriate behaviour • Signing of self-declaration format on commitment towards gender-sensitive behaviour	

6.9.2 The Contractor shall constitute an appropriate Grievance Redress Mechanism (GRM) for addressing grievances at worksite. Grievances of workers will be first brought to the attention of supervisor at site. Grievances not redressed by the supervisor within 7 days will be brought to the Grievance Redress Committee (GRC). The composition of GRC will have representatives from workers, women representative, ESHS staff of the Contractor ESHS staff of GC. The main responsibilities of the GRC are to: (i) provide support to workers on problems arising at worksite, (ii) record workers grievances, categorise, prioritize grievances and resolve them, (iii) immediately inform the Engineer of serious cases and (iv) report to workers on development regarding their grievances and decisions of GRC. The panel of the GRC will function without any prejudice or fear of retaliation. The well-being of the panel members will be protected by HRIDC. A

format for record of complaints is given in General Instruction: ESHS/GI/008. The GRC will redress the grievances within 14 days.

6.9.3 This project has zero tolerance of any form of:

a) **Gender-based violence (GBV)**, that is perpetrated against a person's will and that is based on socially ascribed gender-related differences between people.

b) **Sexual exploitation and abuse (SEA**) which is attempted abuse of a position of vulnerability, differential power, or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another.

c) **Sexual harassment (SH**) which is unwelcome sexual advances, requests for sexual favors, and other unwanted verbal or physical conduct of a sexual nature.

6.9.4 Any incidence of GBV, SEA or SH should be reported to the Grievance Redress Committee (GRC). The panel of the GRC should take appropriate gender-sensitive actions to verify authenticity of the incident with due consideration to the safety, security, and dignity of the offended person. The investigation should be concluded within three days of receiving the report or as reasonably possible. Depending on the severity of the incident, the panel may report the case to appropriate authorities.

Following the investigation, the GRC shall recommend appropriate actions to the company which may include but not limited to:

a) Informal warning

b) Formal warning

c) Additional training

d) Loss of up to one week's salary

e) Suspension of employment (without payment of salary), for a minimum period of one month up to a maximum of six months

f) Termination of employment

6.9.5 The affected person will be provided with appropriate support (e.g. psychological counselling, medical support and any other support as needed).

6.9.6 A self-declaration format for adherence to gender-sensitive behaviour should be signed by all contractors, subcontractors, employees, and senior managers, engaged by the

Project to avoid GBV/SEA/SH at worksite. A self-declaration format is given in below:

Commitment Statement for all Project Workers

(to be translated into local language or explained in a manner that is appropriate for general understanding of the signee)

I, (name of person), acknowledge that preventing Gender-Based Violence (GBV), Sexual exploitation and abuse (SEA) and Sexual harassment (SH) is essential, and that preventing it is my responsibility. At [Company], GBV activities constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. All forms of GBV are unacceptable, be it on the worksite, the worksite surroundings, at workers' camps, or in the community. Prosecution of those who commit GBV may be pursued if appropriate.

I agree that while working on the [Project], I will:

- Cooperate with any relevant investigations.
- Treat women, children (definition of "child" shall be as specified in Child Labour (Prohibition and Regulation) Act, 1986) and men with respect regardless of race; color; language; religion; political or other opinion; national, ethnic or social origin; sexual orientation or gender identity; disability; birth or other status.
- Not use language or behaviour towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not request or engage in sexual favors - for instance, making promises or favorable treatment dependent on sexual acts, in or outside the work site.
- Refrain from abusive and violent behaviour, in the workplace, labor camp or surrounding communities.
- Attend and actively partake in training courses related to HIV/AIDS, GBV, SEA and SH as requested by my employer.
- Report through the grievance redress mechanism or to my manager any suspected or actual GBV by a fellow worker, whether in my company or not, or any breaches of this Code of Conduct.

[Company] recognizes that false accusations of sexual harassment can have serious effects on innocent persons. If, after the investigation, it is found that the complainant has maliciously or recklessly made a false accusation, the complainant will be subject to appropriate sanctions. In such a case, the company will also take appropriate action to restore the reputation of the accused.

I understand that it is my responsibility to use common sense and avoid actions or behaviours

that could be construed as GBV or breach this Self-declaration format. I do hereby acknowledge that I have read the foregoing Self-declaration format, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to GBV. I understand that any action inconsistent with this Self-declaration format or failure to act, as mandated by this Self-declaration format may result in disciplinary action and may affect my ongoing employment.

I have familiarized myself with the contents of this Self-declaration format. By my signature below, I acknowledge, understand, accept and agree to comply with the information contained in the Self-declaration format provided to me.

I hereby confirm I have read and understand the Self-declaration format.
Name (Employee)

Signature
Date

7. FINANCIAL DEDUCTION/WITHHOLDING

7.1. Financial deductions from Contractor on occurrences of an incident.

7.1.1. Table No. 1 below indicates ESHS incidents and the corresponding deductions to be made from the Contractor under Sub-Clauses 2.5 [Employer's Claims], 14.3 (f) [Application for Interim Payment], 14.6 [Issue of Interim Payment Certificates] and 14.7 [Payment] of the General Conditions of Contract.

7.1.2. The affected part of the Works shall remain suspended until all necessary investigations are completed as prescribed in Clause 2. [ESHS Management], Sub-Clause 2.15 Accident Report and Investigation and as per the related local laws of the state.

7.1.3. Upon submission of the Contractor's Request for Inspection (RFI),a joint inspection of the affected part of the Works shall be carried out by the Engineer and the Contractor. On receipt of the Engineer's Consent (Notice of No Objection: NONO), the Contractor may resume the work.

7.1.4. The Contractor shall not be entitled to any extension of time or to the payment of any cost or profit due to any suspension in accordance with this Sub-Clause 7.1

7.1.5. The maximum amount of delay damages set out in Sub-Clause 8.7 [Delay Damages] of the General Conditions of Contract shall not be applicable where the cause of delay to completion is suspension of part of the Works due to the Contractor's non-compliance as described in this clause 7.1.

Table No. 1: Incidents

Sl. No.	Incident		Financial deductions from the Contractor in Indian Rupees
1.	Injury and Incidence reporting	i) Fatal accidents	i) Rs.1,000,000 for first fatality and Rs.1500,000 for every subsequent fatality.
		ii) Injury accident	ii) Rs.300,000 for first grievously injured person and Rs.500,000 for every subsequent grievously injured person (Grievous Injury as defined by Workmen's Compensation Act)
		iii) Abnormal delay in reporting accidents or wilful suppression of information about any accidents / dangerous occurrence as per Sub-Clause 2.15.	iii) Rs.1,00,000 for first violation and Rs.2,00,000 for subsequent violations

7.2. Withholding and deduction of payments from Contractor

7.2.1. The Engineer may issue a notice to the Contractor in accordance with Sub-Clause 3.3 [Instructions of the Engineer] of the General Conditions of Contract to rectify any unsafe act or condition (including but not limited to error, default or omission) upon discovery of same on the Site by the Engineer, in a form of Nonconformity Report.

7.2.2. Table No. 2 below indicates Contractor's non-conformances from the ESHS requirements of the Contract and the corresponding amounts to be withheld and deducted by the Engineer from payment due to the Contractor under Sub-Clause 14.3 (f) [Application for Interim Payment], Sub-Clause14.6 [Issue of Interim Payment Certificates] and Sub-Clause 14.7 [Payment] of the General Conditions of Contract.

7.2.3. The Engineer shall have the right to withhold and deduct charges for any other unsafe act

and/or condition depending upon the gravity of the situation on a case-to-case basis. The charge shall be comparable to that, which is the closest to the unsafe act/condition, indicated in Table 2.

7.2.4. Except as may be required otherwise by the Laws of the Republic of India, upon receipt of the Engineer's notification concerning an unsafe act or condition as described in Table No. 2, the Contractor shall promptly comply with such notification, investigate the cause of the unsafe act or condition and as soon as possible (but no later than 7 days, or within such other period from receipt of the Engineer's notification as may be approved by the Engineer), submit to the Engineer for review full details of the proposed correction, prevention and any other measures (hereinafter referred to as the "measures") to be taken by the Contractor to rectify and close-out the matter and to prevent re-occurrence. Such measures shall be to the satisfaction of the Engineer.

7.2.5. The Engineer is entitled to withhold amounts from the Contractor's payment until the Engineer has verified the Contractor's measures, submitted to the Engineer for review as above, and accepted them after a joint inspection in response to the RFI for the same.

7.2.6. Should the Contractor default in implementing any measures within the time previously agreed between the Contractor and the Engineer or the Contractor makes subsequent violations as specified in Table No. 2, the Engineer shall be entitled to the deduction to be recovered from the Contractor under Sub-Clause 2.5 [Employer's Claims] of the General Conditions of Contract. Such deductions shall be made via the certification and payment process provided for in the Contract, including Sub-Clauses 14.3 (f) [Application for Interim Payment], 14.6 [Issue of Interim Payment Certificates] and 14.7 [Payment] of the General Conditions of Contract without limiting to the unsafe acts and or conditions mentioned above in Table 2.

7.2.7. The release or deduction of amount shall happen in the next payment process.

7.3. Suspension of work

7.3.1. The Engineer may issue a notice to the Contractor in accordance with Sub-Clauses 3.3 [Instructions of the Engineer] and 8.8 [Suspension of Work] of the General Conditions of Contract to suspend the progress of part of the Works in a form of Nonconformity Report, if in the Engineer's opinion such work is non-compliant with the ESHS requirements of the Contract. Such notification shall include details of the cause of the suspension. During such suspension, the Contractor shall protect, store and secure such part of the Works against any deterioration, loss or damage.

7.3.2. The Contractor shall not proceed with the affected Works until its measures are accepted by the Engineer.

7.3.3. Suspension of part of the Works as described in Sub-Clause 7.3.1 above and withholding of the amount from the Contractor's payment Sub-Clause 7.2 above shall continue together or independently until the Engineer has verified the Contractor's correction and close-out of any such non-conformity.

7.3.4. The Contractor shall not be entitled to any extension of time or to the payment of any cost or profit due to any suspension in accordance with the Sub-Clause 7.2.

7.3.5. The maximum amount of delay damages set out in Sub-Clause 8.7 [Delay Damages] of the Conditions of Contract shall not be applicable where the cause of delay to completion is suspension of part of the Works due to the Contractor's non-compliance as described in this Clause 7.

Table No. 2: Unsafe Acts/Conditions

Sl. No	Unsafe Act/Condition		Deductible amount from the Contractor in Indian Rupees
1.	ESHS Management Policy & Plan	1) ESHS Policy a) Non-compliance of Sub-Clause2.4.1 b) (Per Month)	Rs.25,000 per month
		2) ESHS plan: a) Delay in submission (Sub-Clause 2.4.2.) b) Not updated as per employer's instruction as per Sub-Clause 2.4.4. c) Copies not provided to all required supervisors / engineers (Sub-Clause 2.4.5)	Rs.50,000 per month.

Sl. No	Unsafe Act/Condition		Deductible amount from the Contractor in Indian Rupees
2.	ESHS Organization	i) Not filling up the vacancies created due to ESHS personnel before leaving the Contractor (Sub-Clause 2.6.4.) ii) ESHS organization not provided with required Audio-visual and other equipment as per General Instruction ESHS/GI/ 001 (Clause 8. Attachment-4)	a) Rs.200,000 per month. b) Rs.50,000 per month
3.	ESHS Committee	i) Failed to formulate or conduct ESHS Committee meeting for any month (Sub-Clause 2.8.1) ii) The Contractor and Subcontractor representatives not attending ESHS Committee meetings (Sub-Clause 2.8.6.) iii) Failed to conduct Site inspection before conducting ESHS Committee meeting (Sub-Clause 2.11.7 (a).) iv) Failed to send Agenda to Employer in time or ESHS Committee Minutes of Meeting (Sub-Clauses 2.8.4 & 2.8.7.)	Deduction of amount i) Rs.100,000 per violation ii) Rs.5,000 per member not attending the meeting For item iii)& iv) Rs.25,000 per violation
4.	ID Card	i) Non-adherence of Sub-Clause 2.9.	Rs. 1,000/- per ID card per month
5.	ESHS Training	i) Not complying to the requirements as mentioned in Sub-Clause 2.10.1, 2.10.2, 2.10.3	Deduction of Rs.1,00,000 per violation
6.	ESHS Inspection	i) Not complying to the requirements as mentioned in Sub-Clause 2.11.	Rs.1,00,000 per violation

Sl. No	Unsafe Act/Condition		Deductible amount from the Contractor in Indian Rupees
7.	ESHS Audit	Internal Audit, MARS & External Audit i) Not conducted as per ESHS Plan (Sub-Clauses 2.12.6) ii) Report not sent to Employer (Sub-Clause 2.12.9) iii) Corrective action not taken for any month (Sub-Clause 2.12.9)	Rs.1,00,000 per violation
8.	ESHS Communication	i) Important days to be observed for ESHS awareness as furnished by employer not observed (Sub-Clause 2.13.2) ii) Posters as directed by Employer not printed and displayed (Sub-Clause 2.13.2)	i) Rs.10,000 per violation and ii) 50,000 per month
9.	ESHS Submittals	Non-compliance of Sub-Clause 2.14	Rs.1,00,000 per month
10.	Traffic Management	a) Non-compliance of Sub-Clause 4.2.9	Rs.25,000 per single violation .
11.	Emergency Preparedness Plan	Non-compliance of Sub-Clause 2.16	Rs.1,00,000 per month
12.	Permit to work	Non-compliance of Sub-Clause 4.28	Rs.1,00,000 per violation.
13.	Occupational Health	Non-compliance of Sub-Clause 5.1 & 5.2	Rs. 50,000 per month.
14.	Labour Welfare Measures	Non-compliance of Sub-Clause 5.4	Rs.50,000 per month .

Sl. No	Unsafe Act/Condition		Deductible amount from the Contractor in Indian Rupees
15.	Environmental Management	i) Containment of air pollution (Sub-Clause 6.3.1) ii) Containment of water pollution (Sub-Clause 6.3.2) iii) Containment of noise pollution (Sub-Clause 6.3.3) iv) Containment of waste pollution (Sub-Clause 6.3.4) v) Preservation of trees (Sub-Clause 6.3.7 (g)) vi) Environment monitoring (Sub-Clause 6.4)	Rs.50,000 per violation
16	Housekeeping (Sub-Clause 4.2)	i) Surrounding areas of drinking water tanks / taps not hygienically cleaned / maintained ii) Office, stores, toilet / urinals not properly cleaned and maintained. iii) Required garbage bins at appropriate places not provided / not cleaned. iv) Stairways, gangways, passageways blocked. v) Lumber with protruding nails left as such vi) Openings unprotected vii) Excavated earth not removed within a reasonable time. viii) Truck carrying excavated earth not covered/tyres not cleaned. ix) After close of work Vehicles / equipment not parked at designated place x) Unused surplus cables / steel	Rs.50,000 per violation.

Sl. No	Unsafe Act/Condition		Deductible amount from the Contractor in Indian Rupees
		scraps lying scattered xi) Wooden scraps, empty wooden cable drums lying scattered xii) Water stagnation leading to mosquito breeding	
17.	Working at Height / Ladders and Scaffolds	Non-compliance of Sub-Clause 4.3.	Rs.50,000 per violation
18.	Lifting Appliances and Gear	Non-compliance of Sub-Clause 4.6	Rs.50,000 per violation
19.	Launching Operation	Non-compliance of Sub-Clause 4.7	Rs.50,000 per violation
20.	Site Electricity	Non-compliance of Sub-Clause 4.10	Rs.10,000 per violation.
21.	Power Tools (Sub-Clause 4.10.13)		
22.	Welding and Cutting (Sub-Clause 4.12)	i) Wrong colour coding of cylinder. ii) Cylinders not stored in upright position. iii) Flash back arrester, non-return valve and regulator not present or not in working condition. iv) Fail to put cylinders in a cylinder trolley. v) Damaged hose and fail to use hose clamps vi) Using domestic LPG cylinders vii) Fail to store cylinder 6.6m away from fire prone materials viii) Fire extinguisher not placed in the vicinity during operation Voltmeter and Ammeter not	Rs. 10,000 per violation.

Sl. No	Unsafe Act/Condition		Deductible amount from the Contractor in Indian Rupees
		working ix) Non-availability of separate switch in the transformer x) Improper grounding and return path. xi) Damaged and bare openings in the welding cable. xii) Damaged holder xiii) Fire extinguisher not placed in the vicinity during operation	
23.	Fire Precaution (Sub-Clause 4.25)	i) Smoking and open flames in fire prone area ii) Using more than 24V portable electrical appliances in the fire prone area iii) Not proper ventilation in cylinder storage area. iv) Absence of fire extinguishers v) Fire extinguishers not refilled once in a year. vi) Fire extinguisher placed in a not easily accessible location	Rs. 10,000 per violation.
24.	Excavation, Tunneling and Confined Space (Sub-Clauses 4.13, 4.14, 4.24)	Non-compliance	Rs. 10,000 per violation
25.	Batching plant and Casting yard	Non-compliance of Sub-Clause 4.18	Rs. 10,000 per violation.

Sl. No	Unsafe Act/Condition		Deductible amount from the Contractor in Indian Rupees
26.	Personal Protection Equipment	Non-compliance of Sub-Clause 4.32. Items of attention are as under – 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)	Rs. 200 per person per violation.
27.	Working near Railway	Non-compliance of Sub-Clause 4.30.	Rs. 1,00,000 per violation

8. ATTACHMENT

Attachment -1 Contents of ESHS Management Plan

1. General

1.1. The Contractor shall prepare an Environment, Social, Health and Safety (ESHS) Management Plan, which provides measures to protect the Environment, Health and Safety of workers and the public.

1.2. The Contractor's ESHS Management Plan shall be based on Environment, Social, Health and Safety considerations submitted with the Tender and shall have the content shown in the following section [Contents of ESHS Management Plan].

1.3. The Contractor shall submit his ESHS Management Plan for review by the Engineer within 28 days after the Commencement Date and shall amend the ESHS Management Plan to address any comments made by the Engineer and submit a Final ESHS Management Plan within 14 days of receipt of comments.

1.4. The Final ESHS Management Plan shall be binding on the Contractor for the duration of the Contract.

2. Content of ESHS Management Plan

2.1. The Contractor's ESHS Management Plan shall cover the following aspects:

Site ESHS Management Plan	
Contract No.	
Contractor Name	
Project Name	
1	Project Highlights i) Title of the content; ii) Contract number; iii) Brief scope of work; iv) Location map/key plan; v) Period of the project;
2	ESHS Management Policy with senior management responsibility;

3	Site organization chart Chart indicating reporting of ESHS Management personnel, appointment, duties and responsibilities
4	Roles &responsibility Individual responsibility of the i) The Contractor's representative vi) ESHS Manager vii) Environment manager viii) Social expert ix) Chief accident prevention officer x) Construction manager xi) Construction Supervisors xii) ESHS Committee members xiii) ESHS in charge xiv) Site engineers xv) First line supervisors xvi) Subcontractors
5	ESHS Site Committee xvii) Details - Chairman, secretary, members, and employer's representative xviii) Procedures for effective conduct of meeting
6	ESHS Training
7	Subcontractor Safety and Health procedures for Subcontractors;
8	ESHS Inspection and audit
10	Accident, diseases investigation reporting procedures
11	Health, First Aid and emergencies measures
12	Staff and labour welfare measures at site
13	Policy for identifying hazards and risks with risk assessment and mitigation procedures

14	Safe Work Procedures e.g. i) Excavation ii) Structural steel erection iii) Form works iv) Concrete placement v) Work at height vi) Switch-over works vii) Floor, wall openings and stairways viii) Welding, cutting and bracing ix) Lifting appliances x) Electrical equipment xi) Mechanical equipment xii) Fire prevention xiii) Hazardous chemicals and solvent xiv) Lighting xv) Abrasive blasting
15	Work permit system
16	List of standard job specific PPEs to be used in the site
17	Maintenance of regime for construction equipment and machinery
18	Traffic management
19	Housekeeping
20	i) Environmental and Social Management ii) Applicable National and State legislation and regulations iii) Specific procedures for achieving environmental and social performance requirements as given in the Employer's requirements on Environment. iv) Details on air monitoring and noise monitoring control plan which details mitigation measures / corrective action / preventive action and monitoring schedule. v) The ESHS Management Plan must contain procedures on prevention and control of water pollution, storage, handling and disposal of waste, including municipal, C&D, plastic, bio-medical, chemical and hazardous wastes, reuse/recycle of waste, selling to authorised recyclers and records thereof, preservation of landscape disturbed due to construction, housekeeping/Environmental sanitation and traffic management as required under the contract.

	vi) Procedures for recording environmental complaints and response process. vii) HIV prevention plan viii) Gender Based Violence (GBV) and Sexual Exploitation and Abuse (SEA) prevention and response action plan ix) COVID -19 Response Plan
21	Visitors and Security arrangement
22	Disciplinary procedures
23	Safety and health promotion and awareness;
24	Safety and Health equipment and Safety and Health of the Contractor's construction and office equipment;

Note: -The Environment, Social, Health and Safety (ESHS) Management Plan shall be incorporated in the relevant sections.

3. Training

3.1. The Contractor shall describe the training program and content he will provide for workers and staff to:

a) Raise awareness of the role and importance of Environment, Social, Health and Safety matters; the potential negative impacts of construction work in general and the ways in which impacts can be prevented; and the expected construction impacts and long-term environmental and social benefits of the applicable project;

b) Disseminate the philosophy and approach of the ESHS Management Plan throughout the workforce, and explain the roles of all parties in implementing the ESHS Management Plan; and

c) Inform all employees of the Environment, Social, Health and Safety activities they are required to comply with when conducting their work, and the penalties for non-compliance.

3.2. Training to raise the awareness and capacity of the Subcontractors and their employees shall also be incorporated where necessary.

3.3. The Contractor shall prepare the following plans to supplement the ESHS Management Plan:

a) Emergency Response Plan; and

b) Fire Evacuation Plan.

Attachment -2 Work Place Policy (on HIV/AIDS Prevention & Control)

Haryana Rail Infrastructure Development Corporation Limited (HRIDC) recognizes HIV/AIDS as a developmental challenge and realizes the need to respond to it by implementing regular HIV/AIDS prevention programmes and creating a non-discriminatory work environment for HIV infected workmen engaged by Contractors. For the purpose of making conscientious, sensitive and compassionate decision in addressing the realities of HIV/AIDS, HRIDC has established these guidelines based on ILO code of practice on HIV/AIDS.

- Creating awareness through professional agency using IEC (Information, Education and Communication) package specially designed for migrant workers.
- Institutional capacity building by training the project implementation team, Safety, Health &Environment (SHE) Managers, establishing linkages for deficient diagnosis and treatment of the affected workers, effective monitoring of implementation and documentation for further learning.
- Establishing peer educators by selecting them in consultation with Contractors and training them through professional agencies so that they become focal point for any information, education and awareness campaigns among the workmen throughout the contract period.
- Promotion of social marketing of condom

Attachment -3 Work Place Policy on COVID-19 Prevention and Control

It is likely that Corona virus Disease 2019 (COVID-19) will continue to occur in the community in the foreseeable future. It is therefore necessary to have a plan/policy in place to prevent the spread of this virus within the workplace. In order to reduce the risk of infection, Haryana Rail Infrastructure Development Corporation Limited (HRIDC) recommends to the Contractor to consider the following measures:

a) The Contractor shall ensure that the latest guidelines issued by Ministry of Health and Family Welfare (MoHFW), local government and the district administration are strictly followed at the construction works site.
b) On day 0, before resuming the work on sites post lockdown period, mandatory medical check-up will be arranged for all workers.
c) The workers coming from outside shall observe home-quarantine for at least 14 days as per the guidelines issued by MoHFW.
d) Only medically fit workers will be deployed at site and medical assistance will be arranged for unfit workers.
e) A unique photo identity card with serial number will be issued to all the workers and their family members staying at site.
f) All the essential items will be made available to them at site only. If necessary, they can go out wearing face masks, after informing the supervisor.
g) No outside worker will be allowed to stay at site without following proper procedure and instructions.
h) Start time on site will be staggered to avoid congestion at the entry gates.
i) As in most cases, workers reside at the Sites, hence no travel arrangements are required for them.
j) The workers staying outside (which are always nearby) shall reach the site either by walking or by their individual mode of transport (bicycle, two-wheeler etc.).
k) During attendance, training and other sessions, social distancing guidelines will be followed along with provision of no-touch attendance.
l) All workers may be advised to take care of their own health and look out for respiratory symptoms/fever and, if feeling unwell, shall leave the workplace immediately after informing their reporting officers.
m) They shall observe home-quarantine as per the guidelines issued by MoHFW and shall immediately inform the nearest health centre or call 011-23978046.
n) Workers shall not shake hands when greeting others and while working on the site.
o) Mandatorily wear face masks while working on site. While not wearing masks, cover your mouth and nose with tissues if you cough/sneeze or do so in the crook of your arm at your elbow.
p) Avoid large gatherings or meetings. Maintain at least 1 metre (3 feet) distance from persons, especially with those having flu-like symptoms, during interaction.

q) Not more than 2/4 persons (depending on size) shall be allowed to travel in lifts or hoists.
r) Use of the staircase for climbing shall be encouraged.
s) Workers shall clean hands frequently by washing them with soap and water for at least 40 seconds.
t) Workers shall not share their belongings like food, water bottles, utensils, mobile phones etc. with others.
u) The utensils shall be washed properly post use at designated places.
v) Post work, workers shall change their clothes before leaving the site and clothing shall not be shook out.
w) Avoid touching your eyes, nose, or mouth with unwashed hands.

Attachment -4 Reference for ESHS Activities

General Instruction: ESHS/GI/001

MINIMUM REQUIREMENTS OF ESHS MONITORING AND AUDIO-VISUAL EQUIPMENT'S

a) Every Contractor shall provide the following audio-visual aids for conducting weekly review, monthly safety committee and other post review meeting of all fatal and major incidences effectively. This audio-visual equipment is a must for conducting periodical in-house safety presentations in the training programs; and

b) In addition to the above, portable hand held Type I or Type II digital sound level meter (SLM) and portable hand held digital Lux meter are also to be provided.

c) The minimum requirement of the quantity to be provided in ESHS management Plan and approved by the Engineer.

Sl. No	ESHS Monitoring and Audio-Visual Equipment details
1.	Portable hand-held Type I or Type II Digital Sound Level Meter (SLM)
2.	Portable hand-held Digital Lux Meter
3.	Laptop computer with standard configuration including multimedia facilities
4.	Colour printer
5.	Computer projector with screen
6.	Overhead projector
7.	Smartphone for taking photos and recording of video
8.	Portable loudspeaker (for tool-box talk and emergency purpose)
9.	Communication facility like mobile phone, walky-talky etc.
10.	Accident investigation Kit containing the following:
a)	Chalk piece for marking
b)	Measuring tape for measuring Flexible tape – 2m length Metal Foot long scale and Metal tape – 30m
c)	Equipment tags
d)	Multipurpose Flash light
e)	Barrier tape

f)	Accident investigation Forms and checklists
g)	Enough Paper for witness recording and other noting
h)	Emergency Phone Numbers list

General Instruction: ESHS/GI/002

Topics for ESHS Orientation Trainings for Workmen for First Day at Work

1) **Hazard Identification Procedure**

Hazards on site:

- Falls;
- Earthing work;
- Electricity;
- Machinery;
- Handling materials;
- Transport;
- Site housekeeping;
- Fire;
- Safety of nearby located structures;
- Works close to railway tracks or roads.

2) **Personal Protective Equipment**

- What is available?
- How to obtain it?
- Correct use and care.

3) **Health**

- Site welfare facilities;
- Potential health hazards;
- First Aid/Cardiopulmonary Resuscitation (CPR). /Automated External defibrillator(AED)

4) **Duties of the Contractor**

- Brief outline of the responsibilities of the Contractor by law;
- Details of the Contractor's accident prevention policy;
- The Employer SHE Management Manual (if any);
- Building and other Constructions Welfare Law.

5) **Employee's Duties**

- Brief outline of responsibilities of employee under law
- Explanation of how new employees fit into the Contractor's plan for accident prevention (induction and orientation).

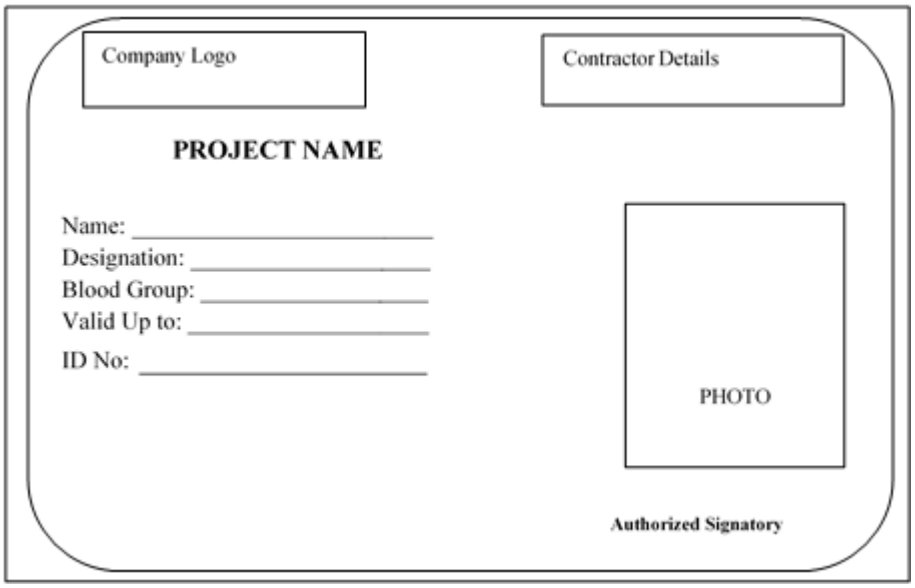
6) Environment And Social

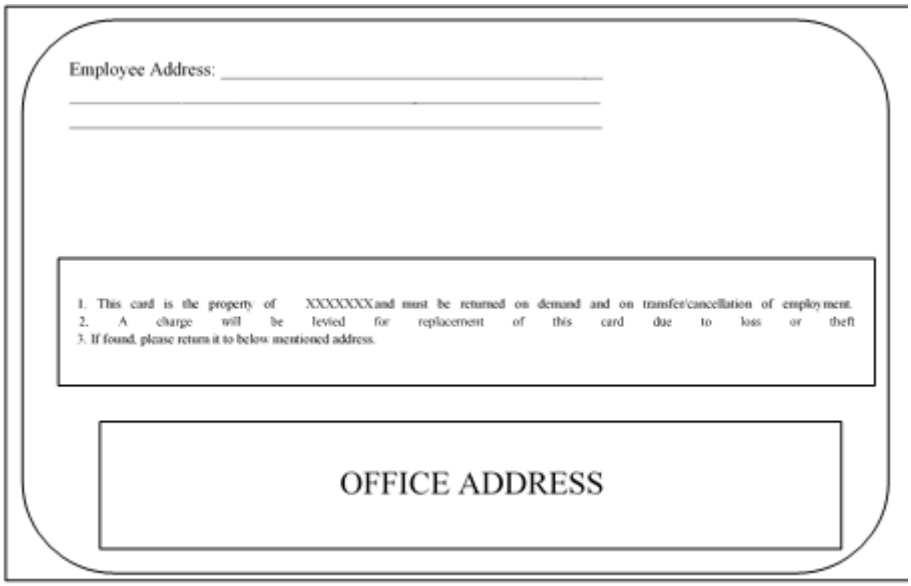
- Contractor's Environment Policy
- Key legal requirements
- Avoidance of Nuisance
- Environmental Sanitation
- Dust Control Measures
- Water Pollution and Control
- Occupational noise mitigation
- Waste Management and Disposal
- Gender Based Violence and Sexual Exploitation and abuse (GBV/SEA)
- HIV/AIDS prevention
- Grievance Redressal Mechanism for GBV/SEA

-

General Instruction: ESHS/GI/003

ID CARD FORMAT (85 mm x 55mm) FRONT SIDE OF ID CARD:





General Instruction: ESHS/GI/004 [ESHS Training Matrix]

ESHS Supervisors	ESHS Manager	Medical Officer	Clerical Staff	Security Officers	Transportation Drivers	Electrical workers	Mechanical Workers	Steel Workers	Station Building Workers	Material Handlers	Machinery Operators	Construction Foreman	Construction Supervisors	Construction Managers	Planning Engineer	Quality Manager	Sr. Construction Managers	Contractor Representative	Types of Training
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	ESHS orientation
		*												*	*	*	*	*	ESHS leadership
*	*	*										*	*	*	*	*	*	*	ESHS plan
*	*												*	*		*	*	*	ESHS improvement plan
*	*												*	*	*	*	*	*	Management of change
*	*												*	*	*		*	*	ESHS audit and inspection
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	ESHS emergency response & preparedness
*	*	*		*									*	*	*	*	*	*	Incident/Accident investigation & reporting
*	*											*	*	*	*	*	*	*	ESHS communication
*	*													*	*		*	*	ESHS promotion & incentives
*	*			*	*						*		*	*		*	*	*	Traffic management
*	*			*						*		*	*	*	*	*	*	*	Hazard identification & risk analysis & Aspect Impact
*	*			*				*	*	*		*	*	*		*	*	*	Permit to work system
*	*													*	*	*	*	*	Confined space entry
*	*	*		*				*	*	*				*		*	*	*	Scaffolding
*	*	*	*	*	*	*	*	*	*		*		*	*		*	*	*	Waste management
*	*											*	*	*			*	*	Environment monitoring
*	*	*										*	*	*		*	*	*	Labour welfare measures
*	*											*	*	*		*	*	*	Behavior Based Safety Management (BBSM)
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	Industrial First Aid and CPR
*	*		*	*	*	*	*	*	*	*	*	*	*						Fire fighting
*	*					*	*	*		*	*	*	*	*			*		Rigging
*	*											*	*	*					Wire rope inspection
*	*											*	*	*					Crane inspection
*	*											*	*	*					Electrical/Mechanical isolation
*	*											*	*						Explosive handling and control
*	*					*	*	*	*			*	*						Heavy lifting operation
*	*							*				*	*						Welding, cutting and bracing
*	*								*			*	*						Power actuated hand tool
*	*					*	*	*	*			*	*						Roofing work
*	*							*				*	*						Steelerection work
*	*					*	*	*	*			*	*						Scaffold erection/dismantling

General Instruction: ESHS/GI/005

ESHS Training Details for Managers and Supervisors

1. The Law and Safety	**2. Policy and Administration**
Statutory requirement Appropriate regulations Duties of employee	Effect of incentive on accident prevention ESHS Policy Industrial relations Safety Officer: duties, aims, objectives
3. Safety and the Supervisor	**4. Principles of Accident Prevention**
Safety and efficient production Accidents affect morale and public relations	Attitudes of management, supervision and operations Methods of achieving safe operations Accident and injury causes
5. Site Inspection	**6. Human Behaviour**
The role of management Hazard Identification Procedure Records results Follow-up procedures Feedback	Motivating agencies Individual behaviour Environmental effects Techniques of persuasion
7. Site housekeeping	**8. Health**
Site organization Relationship of site housekeeping to accident occurrence Site access Equipment storage Material stacking Materials handling	Medical examination Hazard to health on site Sanitation and welfare Protective clothing First Aid/CPR
9. Personal Protective Equipment	**10. Electricity**
Eye, face, hands, feet and legs Respiratory protective equipment Protection against ionizing radiation	Appreciation of electrical hazards Power tools Arc welding Low voltage system Lighting and power system on sites ELCB, RRCB, Grounding/Ground fault circuit interrupters (GFCIs)
11. Oxygen and Acetylene Equipment	**12. Equipment**

Cylinder storage and maintenance Condition and maintenance of valves, regulators, and gauges Condition and maintenance of hoses and fittings Pressures	Accidents related to moving parts of machinery Appreciation of principles of guarding Importance of regular maintenance
13. Transportation Transport to and from site Hazard connected with site transport Competent drivers Dumpers Tipping trucks Movement near excavations	**14. Excavations** Method of shoring Precautions while shoring Precautions at edge of excavations Removal of shoring Sheet steel piling
15. Working platforms, Ladders, and Scaffolding	**16. Cranes and other Lifting Machines**
Hazards connected with the use of ladders Maintenance and inspection Type of scaffold Overloading Work on roofs Fragile material Openings in walls and floors Use of Full Body Harness and nets	Licensing, certification and training required for operation of cranes Slinging Methods Signalling Access to crane(s) Maintenance and examination Ground conditions Hazards and accident prevention methods connected with the use of different types of cranes/heavy equipment Crane Lift Plan for all lifts
17. Lifting Tackle	**18. Fire Prevention and Control**
Slings - single and multi-legged Safe working loads (SWLs) Safety hooks and eyebolts Cause of failure Maintenance and examination	Principle causes determining fire Understanding fire chemistry Firefighting equipment Firefighting training
19. Communications	
Effective methods of communication (interest to non-English speaking workers) Method and preparation of reports Safety committees Safety meeting	

20. **Environment and Social**

Environment Policy

Regulatory requirements

- Central
- State
- Judicial
- Environmental requirements of funding agency

Overview of Environmental issues at construction sites and funding agency's requirements.

Avoidance of nuisance

Environmental sanitation

Dust control measures

Overview of impact of construction on Climate change

Contractual requirements to reduce construction related impacts

Monitoring of environmental parameters and their significance

Waste Management

Occupational Noise and its mitigation

Health impacts of construction industry

Resource minimization

ISO requirement (as applicable)

Gender Based Violence and Sexual Exploitation and abuse (GBV/SEA)

HIV/AIDS prevention

Grievance Redressal Mechanism for GBV/SEA

General Instruction: ESHS/GI/006

WEEK/DAYS TO BE OBSERVED FOR CREATING ESHS AWARENESS

1st Monday to Sunday of January	Road Safety Week (Subjected to confirmation from Ministry of Road Transport, Govt. of India every year.)
16th February	Kyoto Protocol Day
March	Red Cross Month
4th March	National Safety Day
22ndMarch	World Water Day
7th April	World Health Day
14th April	Fire Safety Day
18th to 22nd April	Earth Week
20th April	Earth Day
20th April	Noise Awareness Day
28th April	ILO World Day for Safety and Health at Work Day
1st to 7th May	Emergency Preparedness Week
5th June	World Environmental Day
12th June	World Day against Child Labours
21st June	World Yoga Day
9th July	Occupational Health Day
17th October	World Trauma Day
1st December	World AIDS Day

General Instruction: ESHS/GI/007

Minimum Requirements of ESHS Communication Posters/Signage/Video:

d) Every Contractor shall prepare a ESHS Communication Plan as a part of site specific ESHS Management Plan and shall include the following minimum requirement of Posters/Signage/Video as applicable. In case readymade posters are available in any of the category from National Safety Council or any other safety related organizations they may procure the same and display it. In case the same is not available, then the Contractors shall make necessary arrangements to get the posters designed and printed on their own. All posters shall each be in Hindi, English and the regional language; and

e) All the above is to be detailed in the Contractor's ESHS Management Plan and he shall obtain the Engineer's prior consent for the numbers, contents, locations, etc.

Table No.: 1 - Minimum No. of Posters

Sl. No	ESHS Poster Title	Minimum No. of concepts in each title	No. of Posters/Signage/Video
1.	Safety Culture	5	Each 10
2.	Daily Safety Oath	1English, 1 Hindi	Each 50
3. a)	Signage to display the messages like PPE ZONE, NO PPE ZONE, HARD HAT AREA etc.	2 types of sizes made up of metal sheet to be mounted at different locations	Each 25
b)	Helmet	5	Each 25
c)	Shoe	5	Each 25
d)	Goggles & Ear Protection	5	Each 25
e)	Full Body Harness	5	Each 25
f)	Hi-Vi Jacket	5	Each 25
4.	Emergency Management Plan	5	Each 25
5.	Working at Heights	10	Each 25
a)	Ladder, Stairway, Scaffold - Signage to display the messages like SAFE, UNSAFE, FIT FOR USE,	5 types of sizes made up of metal sheet to be mounted at different locations	Each 25

Sl. No	ESHS Poster Title	Minimum No. of concepts in each title	No. of Posters/Signage/Video
	AVOID USE etc.		
6.	Site Electricity	5	Each 25
7.	Crane Safety	5	Each 25
8.	Slings	5	Each 25
9.	Rigging Procedures	5	Each 25
10.	Excavation	5	Each 25
11.	Occupational Health (Mosquito Control, HIV/AIDS awareness, Dust Control, Noise Control, No Smoking/Spitting, etc.)	10	Each 25
12.	First – Aid	3	Each 25
13.	Labour Welfare Measures (Payment of Minimum Wages, Avoidance of Child labour, signing in the Muster Roll, in case of accidents- what to do? Etc.	5	Each 25
14.	Importance of "Safety Handbook"	1	25
15.	Traffic Safety (Speed limit, safe crossing and working within barricaded area etc.)	5	Each 25
16.	Environmental Monitoring (Spillage of Muck, hazardous material, Improper drainage, water spray for dust containment etc.)	5	Each 25
17.	Video in Hindi on PPE usage – 15 minutes duration	1	-

Note 1: Items mentioned under 17 is video. Items under 3 (a) and 5 (a) are metal signage boards and all other items are posters.

Note 2: The above minimum numbers are for guidance only. The actual number will depend on

the project's specific requirements. The Contractor shall propose and obtain Engineer's prior consent to the final numbers, locations, etc.

Table No.: 2 – Size of Posters/Signage

Sl. No	Item	Size
1.	Posters – Standard	17"x22" –135 GSM 4 Colour Printing
2.	Posters – Special (Wherever required)	17"x22" card laminated FA Poster
3.	Posters - Mega size (Wherever required)	32"x40" Flex FA Poster
4.	First-Aid Booklet	6"x4"
5.	Safety Handbook	6"x4"
6.	Signage	Small: 12"x6" Big: 24"x12"
7.	Road Traffic Sign Boards	Strictly as per Indian Road Congress (IRC) specifications

Table No.: 3 – Safety Signage Colour (as per IS: 9457)

Sl. No	Type of signage	Colour
1	Mandatory	Blue
2	Danger	Yellow
3	Prohibitory	Red
4	Safe conditions	Green

General Instruction: ESHS/GI/008

Environment, Social Formats/Checklist

1. Weekly Environmental Inspection Summary

1.0 Major issues of non-conformity in the past week are:

	Issue	Reason
I.	Air (Specify)	
II.	Water (Specify)	
III.	Noise (Specify)	
IV.	Water (Specify)	
V.	Storage (Specify)	
VI.	Housekeeping (Specify)	
VII.	Roads (Specify)	

2.0 Over the last week have been able to implement environmental management requirement as per contract

Yes ☐ ☐ No if not yes reasons are:

(i)

(ii)

(iii)

3.0 Following issues have not been resolved for more than past two weeks

(i)

(ii)

(iii)

4.0 Support/Clarification from Employer's Representative required in the following:

(i)

(ii)

(iii)

5.0 Complaint received in the past week:

From	Action Taken	Reasons for Delay
(i) Public		
(ii) Client		
(iii)Statutory Agency		

Auditor: Project Manager

Contact Number: Contractor:

Environmental Manager	**Project Manager**	**Document No.:**

2. Weekly Environmental Inspection

Report No.:	Inspection Date:	Inspected by:
Inspection Area:		
Participants:		

S.No.	Item	Observation	Remarks	Action	
				By Date	By Whom
1.0	**Air Pollution**				
1.1	Dust (approach roads, adjacent road, working area, cement handling etc.)	☐ Satisfactory ☐ Site Dusty ☐ Sprinkling carried out as required ☐ Excavated soil removed within 2 days			
1.2	Generators	☐ Satisfactory ☐ Maintenance regime followed ☐ Black smoke ☐ Leaking oil ☐ Drip pans not available			
1.3	Vehicles	☐ Satisfactory ☐ PUC certificate available ☐ Black smoke ☐ Wheel washed/cleaned ☐ Leaking oil ☐ Side of vehicle clean of mud ☐ Material transported in closed manner			
1.4	Air monitoring	☐ Carried out as per contract ☐ Results reported as per contract			

S.No.	Item	Observation	Remarks	Action	
				By Date	By Whom
		☐ Remedial measures in place where required			
2.0	**Water Pollution**				
2.1	Site Drains	☐ Drainage system functional ☐ No Contamination ☐ Not blocked by debris/ garbage ☐ No indications of Oil spilled in drains ☐ Storage of chemical waste not nearby			
2.2	Adjacent Drains	☐ Not damaged ☐ No signs of pouring bentonite ☐ No signs of pouring Chemicals ☐ Signs of discharging Silt/ debris			
2.3	Separator Tanks	☐ Tank not full of silt ☐ Tank regularly emptied			
3.0	**NOISE POLLUTION**				
3.1	Noise control measures	☐ All powered mechanical equipment's are sound reduced ☐ Acoustic / enclosures constructed in areas of excessive noise ☐ Equipment located and directed away from noise receptors			
3.2	Generators provided with acoustic enclosures	☐ Effective ☐ Not effective ☐ Not provide			
3.3	Noise Monitoring	☐ Carried out as per contract ☐ Not exceeded baseline values ☐ Remedial measures in place ☐ Results evaluated statistically for inclusion			

S.No.	Item	Observation	Remarks	Action	
				By Date	By Whom
		in Monthly report			
4.0	**WASTE MANAGEMENT**				
4.1	Waste Identified	□ Chemical Flammable Corrosive Construction related/ oil/ Filters/ Batteries □ Hazardous □ Other (Specify)			
4.2	Storage Containers & Bins	□ Adequate number and properly place □ Proper quality □ Emptied regularly □ Labelling proper □ No spillage on container □ surface noticed			
4.3	Storage Containers & Bins	□ Pollutants (e.g. waste chemical), not dumped in bins □ Recyclable (e.g. metal) not dumped in garbage bins			
4.4	Oil Waste	□ Drip pans available □ No oil stains on ground □ Spill absorption material available □ Waste oil poured in to designated waste drums □ Used oil filters not dumped in garbage bins			
4.5	Excavated soil	□ Storage satisfactory/ properly secured □ Dumping in authorized areas □ No interference with nearby drainage			
5.0	**STORAGE**				
5.1	Diesel Storage	□ Extensive diesel spillage on ground not visible □ Drip pans used when pumping diesel □ Pipes / connectors/ pumps not leaking			

S.No.	Item	Observation	Remarks	Action	
				By Date	By Whom
		☐ Not located close to storm water drains ☐ Transfer arrangement satisfactory			
6.0	**AESTHETICS & CLEANLINESS**				
6.1	Housekeeping & Hygiene	☐ Designated storage area for materials ☐ Scraps/brickbats/rubbish scattered at site ☐ Proper space for handling waste ☐ Area Clean and dry ☐ Stagnant water treated weekly ☐ Proper stacking of drums ☐ Barricades are clean, in line, firmly secured and proper earthling ☐ Water not allowed to accumulate in work area for any reason			
7.0	**Roads**				
7.1	Access Roads	☐ Satisfactory Maintenance ☐ In urgent need of Maintenance			
7.2	Public Roads used by Contractor	☐ Satisfactory maintenance ☐ Repair not carried out			

3. Air and Noise Monitoring Report Format

Air Monitoring Report

Parameter:
Unit :

CPCB Standard Value:

Location	Monitoring Date	Measured Value	Base line value if any

Noise Monitoring Report

Day Time

Location	Category of Area/Zone	National Standard (Day time) Leq dB(A)	Baseline value (Day time), Leq dB(A)	Noise levels (Day time) Leq dB(A)

Night Time

Location	Category of Area/Zone	National Standard (Night time) Leq dB(A)	Baseline value (Night time), Leq dB(A)	Noise levels (Night time) Leq dB(A)

4. Monthly Waste Management Record

S.No	Waste Type	Unit	Quantity Generated		Quantity Disposed off		Adopted/Proposed disposal method
			For the month	Till date	For the month	Till date	
1	**Construction and Demolition Waste**						
	a. Concrete waste	MT					
	b. Demolition Waste	MT					
	c. Bentonite/Polymer mixed soil	CUM					
	d. Good earth	CUM					
2	**Hazardous Waste**						
	a. Waste oil	Litres					
	b. Oil filters	Nos					
	c. Air filters,	Nos					
	d. Cartridges etc.	Nos					
	e. Other (if any)						
3	**Recyclable waste**						
	Paper, plastic, wood, bottles, rubber etc.	Kg					
4	**Bio-degradable waste**						
	Food waste, vegetable waste etc	Kg					
5	**Metal Scrap**	Ton					
6	**E -Waste**	Nos/ Ton					
7	**Miscellaneous (any other)**						

Prepared by:	**Reviewed by: (Environment Manager)**	**Approved by: (Project Manager)**

5. Water Consumption Details

S. No	Source of Water	Quantity Consumed for the month (KL)	Quantity Consumed till date (KL)
1	Ground Water Extracted		
2	Municipal Supply		
3	Water Tanker		
4	Water bottles		
Total (A)			
Breakup of Raw Water Consumption Detail			
S. No.	**Particular**	**Quantity Consumed for the month (KL)**	**Quantity Consumed till date (KL)**
1	**Raw Water**		
	a. Consumed in RO Plant		
	b. Sprinkling		
	c. Wheel washing		
	d. Domestic purpose like drinking, toilets, labour camps, office cleaning		
	e. Curing		
	f. Stone cutting		
	g. TM washing		
	h. Any other use		
	Total (B)		
2	**R O treated water**		
	Total (C)		
3	**R O Reject Water**		
	Total (D)		

Prepared by: **Reviewed by:** **Approved by:**
Environment Manager **Project Manager**

6. **Details on Fly Ash (If Applicable)**

The Employer shall give his consent to the civil Contractor for using Fly Ash in concrete or brick works. The Contractor shall record all relevant details on the consumption of Fly Ash from the data of initial consumption to date of final use.

Fly Ash utilization in tonnes in Building Materials and Products for the FY-____
Contract No. :
Name of Contractor :

Details regarding utilization of fly ash in road/flyover construction projects:

S. No.	**Item of work**	**Total quantity of material used (tonnes)**	**Quantity of Fly ash used (tones)**	**Quantity of Soil/Earth any other material used (tones)**	**% fly ash used against total quantity of material used**	**Source of fly ash**
Remarks:						

Prepared by: **Reviewed by:** **Approved by:**
Environment Manager **Project Manager**

7. Material Consumption Details

S.No.	Particular	Unit	Quantity Consumed	
			For the month	Till date
1	Concrete	CUM		
2	Cement	MT		
3	Sand	MT		
4	Coarse Aggregate	MT		
5	Reinforcement	MT		
6	Admixtures	Litres		
7	Diesel	Litres		
8	Electricity	kWh		

Prepared by:	**Checked by:** **(Environment Manager)**

Records of Complaints

S.No	Nature of Complaints	Date of Complaints Received	Impact Location	Name of Complainant	Address of Complainant	Remarks	Status		
							Solved	On going	Pending

General Instruction: ESHS/GI/009

MARS Audit Rating

Contractor No.:	Contractor:	
Audit No.:	Date:	
For the month of:		
Audit team	Contractor representatives	HRIDC/GC Representatives
Headed by:		
Assisted by:		

Contract No.:		**Contractor:**	
For the month of:			
Audit date:			
Sl. No.	**Section**	**% score attained By Contractor**	**% Score given By HRIDC- GC**
1	ESHS Administration		
2	ESHS Training and ESHS Communication		
3	ESHS Inspection and Audit		
4	Hazard Identification, Risk Assessment and Emergency Preparedness		
5	Reporting of Accidents and Dangerous Occurrences and investigations		
6	Housekeeping		
7	Working at Height		
8	Lifting Operations and Gears		
9	Construction Machinery / Hand tools and power tools		
10	Site Electricity		
11	Fire prevention		
12	Welding & Cutting		
13	Excavations and Trenching		
14	Tunnelling and Confined Space operations		
15	Traffic management		
16	Personal Protective Equipment		
17	Industrial Health & Hygiene and Lighting & Ventilation		
18	Welfare amenities		
19	Environmental management		
20	Batching Plant and Casting Yard		
Overall audited score attained			
Team Head / Contractor Name:	**Designation**	**Signature**	**Date**
Team Head / HRIDC/GC Name:	**Designation**	**Signature**	**Date**

MONTHLY AUDIT RATING SCORE (MARS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

Contract No.:	Contractor's Name:

1.0 ESHS Administration

1.1 ESHS Organisation	A	B	C
Adequacy of ESHS personnel	10		
Is ESHS personal professionally qualified	10		
Employer's approval for each ESHS personal	10		
Intimation of ESHS personals vacancy to Employer	10		
ESHS personal lies with the main contractor	10		
Sub total	**50**		

1.1a ESHS Organisation	A	B	C
ESHS manpower from outsourcing agency	10		
ESHS personals reports to ESHS manager	10		
ESHS manager reports to Project Manager	10		
Facilities and equipment gave to the ESHS personnel	10		
ESHS personnel can stop any unsafe act	10		
Sub total	**50**		

1.2 ESHS Committee	A	B	C
Is site and construction ESHS Committee formed	10		
Does PM Chairman of ESHS Committee	10		
Committee members under gone monthly inspection	10		
Does site ESHS committee meet at least monthly with 21 days time gap	10		
Are Incident Reports discussed	10		
Sub total	**50**		

1.3 Construction ESHS Committee	A	B	C
Does construction ESHS committee meet at least weekly	10		
Do all sub contractors attend	10		
Is agenda cover all the points	10		
Minutes of the meeting send to all committee members	10		
Minutes displayed in the notice board	10		
Sub total	**50**		

1.4 ID card and first day at work	A	B	C
Is ID card issued to all persons	10		
Is ID card as per standard	10		
Authority signed all ID cards	10		
All worker undergone orientation training	10		
ESHS hand book issued to all personnel	10		
Sub total	**50**		

1.5 Designer's role	A	B	C
Whether designers were informed about clause 5.0 of Conditions of Contract on ESHS	10		
Whether designers provide ESHS risk at the drawing itself.	10		
Whether hierarchy of risk control is indicated by the designer	10		
Participation of designer in monthly SCM	10		
Detailed supplementary information about ESHS risk of the design given by designer.	10		
Sub total	**50**		

1.6 ESHS submittals to Employer	A	B	C
Daily reporting of workmen	10		
Monthly ESHS report	10		
ESHS committee meeting minutes	10		
ESHS inspection report	10		
Monthly internal ESHS audit score report	10		
Sub total	**50**		

1.6a ESHS submittals to Employer	A	B	C
External ESHS audit report	10		
Electrical safety audit report	10		
Air monitoring report	10		
Noise monitoring report	10		
Accident, Incident and dangerous occurrence reporting	10		
Sub total	**50**		

1.7 Visitors to site	A	B	C
Visitor got the permission from Employer	10		
Contractor have visitor PPEs	10		
Responsible accompanied with visitor	10		
Does visitor entering hazardous area	10		
Visitor register maintain at site office	10		
Sub total	**50**		

	A	B	C
Sub total			

Contractor's Observations:	Employer's Observations:

Section Scores	450			Section % Score	100		

A – Total score B – To be Awarded by contractor C – To be awarded by Employer

MONTHLY AUDIT RATING SCORE (MARS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.							
Contract No.:	Contractor's Name:						
2.0 ESHS Training and ESHS Communication							
2.1 Training Policy	**A**	**B**	**C**	**2.2 Induction Training**	**A**	**B**	**C**
Is training policy in ESHS Plan	10			Does training take place in first week	10		
Is policy implemented	10			Induction Handout	10		
Does it includes sub contractors	10			Project related syllabus	10		
Is training policy published	10			Management participation	10		
Does PM understand training policy	10			Attendance records kept	10		
Sub total	**50**			**Sub total**	**50**		
2.3 Toolbox Talks	**A**	**B**	**C**	**2.4 Supervisor Training**	**A**	**B**	**C**
Are they held at least weekly	10			Is there a recognized programme	10		
Presented by supervisor/safety officer	10			Project related	10		
System monitored by management	10			Senior management participation	10		
Employee involvement	10			Achievement test	10		
Attendance records kept	10			Attendance records kept	10		
Sub total	**50**			**Sub total**	**50**		
2.5 Follow up training	**A**	**B**	**C**	**2.6 Driver/Plant Operator Training**	**A**	**B**	**C**
Is follow up training organized	10			Does Driver/PO training take place	10		
Does it take place after six months	10			Are all drivers undergone for defensive training at IDTR.	10		
Is syllabus project related	10			Are all Drivers and Operators certificated	10		
Attendance records kept	10			Are records kept	10		
Workers participation towards training	10			Are all Drivers Operators retained	10		
Sub total	**50**			**Sub total**	**50**		
2.7 Promotional activities	**A**	**B**	**C**	**2.8 ESHS posters**	**A**	**B**	**C**
Is there a safety promotional programme	10			Are posters adequate no's	10		
Are any incentive schemes used	10			Are posters separately numbered	10		
Are subcontractors included in promotion	10			Are posters cover all topics	10		
Had any worker rewarded so far.	10			Are safety posters visible on site	10		
Management's participation towards this	10			Are posters maintaining regularly	10		
Sub total	**50**			**Sub total**	**50**		
2.9 ESHS Signage	**A**	**B**	**C**	**2.10 Important days to be observed**	**A**	**B**	**C**
Is signage in correct colours	10						
Adequate number of signs	10						
Suitable positioning of signs	10						
Signs in Hindi and English	10						
Are signage maintaining regularly	10						
Sub total	**50**			**Sub total**			
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**450**			**Section % Score**	**100**		

MONTHLY AUDIT RATING SCORE (MARS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.								
Contract No.:	Contractor's Name: GULERMAK							
3.0 ESHS Inspection and Audit								
3.1 Planned General Inspection	**A**	**B**	**C**	**3.2 Routine Inspection**	**A**	**B**	**C**
Monthly contractor and subcontractors site ESHS committee Inspection	10			Operator Daily Inspection of plant and equipment	10		
Weekly ESHS inspection by supervisors	10			Monthly Inspection of electrical hand tools	10		
Daily ESHS inspection by site ESHS team	10			Quarterly Inspection of temporary electrical systems	10		
Employer's and contractor's representative involved in this ESHS inspection	10			Weekly Inspection of scaffold by scaffolding supervisor	10		
Records maintenance	10			Half-yearly inspection of lifting appliances and gears by competent person	10		
Sub total	**50**			**Sub total**	**50**		
3.3 Specific Inspection	**A**	**B**	**C**	**3.4 ESHS Inspection**	**A**	**B**	**C**
Before a heavy lifting operation	10			Is Contractor prepare checklist for all activity	10		
Before & after entry into confined space	10			Checklist mentioned in contractor ESHS plan	10		
Before & after a welding & gas cutting	10			All inspection reports registered	10		
Before concreting formwork	10			Inspection reports sent to Employer	10		
All high-risk processes inspected by competent supervisor	10			Planned and Routine Inspection used for discussion in ESHS Committee Meeting	10		
Sub total	**50**			**Sub total**	**50**		
3.5 MARS	**A**	**B**	**C**	**3.6 Electrical safety audit**	**A**	**B**	**C**
Performed once in a month	10			Covered all areas	10		
Project Manager accompanied this audit	10			Performed once in a month	10		
Conducted at least 7 days prior to Monthly ESHS Committee meeting	10			Team comprising of senior ESHS (Elect) engineer	10		
Audit Report will be sent to Employer	10			Audit Report will be sent to Employer	10		
Corrective actions taken	10			Corrective actions taken	10		
Sub total	**50**			**Sub total**	**50**		
3.7 External Audit (General)	**A**	**B**	**C**	**3.8 External Audit**	**A**	**B**	**C**
Conducted by external agencies	10			Contents and coverage	10		
Auditors ISO qualified and competent	10			Available documents	10		
Approval of the Employer	10			Qualification of audit team members	10		
Audit report as per ISO/ILO standard	10			Had checklist prepared	10		
Conducted on a quarterly basis	10			Status of NCR of external audit	10		
Sub total	**50**			**Sub total**	**50**		
3.9 Audit Report	**A**	**B**	**C**		**A**	**B**	**C**
Audit report as per ISO/ILO standard	10						
Audit conformity / non-conformity report to the Employer	10						
Report contents and coverage	10						
Corrective action by contractors	10						
Initial audit for checking the adequacy of implementation	10						
Sub total	**50**			**Sub total**			
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**450**			**Section % Score**	**100**		

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.							
Contract No.:	Contractor's Name:						
4.0 Hazard Identification, Risk Assessment and Emergency Preparedness							
4.1 Policy for Identifying Hazards	**A**	**B**	**C**	**4.2 Risk Assessment**	**A**	**B**	**C**
Procedure for identifying hazards	10			Are risk assessment carried out	10		
Is there a list of significant hazards	10			Is there a formal process	10		
Procedure for Risk Assessment	10			Are worksheets used	10		
Whether any schedule or hierarchy made	10			Are records kept in site office	10		
Ranking of hazards	10			Whether control measures are planned	10		
Sub total	**50**			**Sub total**	**50**		
4.3 Method Statements	**A**	**B**	**C**	**4.4 Permit to work in use**	**A**	**B**	**C**
Are Method Statements produced	10			Is there a procedure for Permits to work	10		
Dot hey contain clear instruction	10			Issued by Authorized person	10		
Are they given to work supervisors	10			Issued for defined period	10		
Is correct information given to workers	10			Workers instructed	10		
Step by step description of task	10			Are records kept of Permits issue	10		
Sub total	**50**			**Sub total**	**50**		
4.5 Emergency Preparedness Plan	**A**	**B**	**C**	**4.6 Emergency control centre**	**A**	**B**	**C**
Is there description within Safety Plan	10			Available of first-aid box	10		
Is it up to date	10			Public addressing system	10		
Is it well published	10			Emergency phone numbers	10		
Does Project Manager have copy	10			Emergency alarm	10		
Exercise within past three months	10			Employees name list	10		
Sub total	**50**			**Sub total**	**50**		
4.7 Communication system	**A**	**B**	**C**	**4.8 Plan Details**	**A**	**B**	**C**
Public addressing system	10			Details of emergency co-ordinator	10		
Emergency power supply	10			Designated personnel with Tel. Nos.	10		
Mobile phone in Emergency care centre	10			Are telephone numbers up to date	10		
Warning boards	10			Emergency response team identified	10		
Records maintained for usage and maintenance of communication systems	10			Functions of Team identified	10		
	50			**Sub total**	**50**		
4.9 Requirements	**A**	**B**	**C**	**4.10 First Aid**	**A**	**B**	**C**
Link to Police	10			Is First Aid included in Safety Plan	10		
Link to Fire Services	10			Are adequate no. of First aiders appointed	10		
Link to Ambulance and Hospital	10			Record keep of qualification	10		
Communication to employees	10			First aid boxes supplied	10		
Displayed on Notice Boards	10			First aid boxes properly equipped	10		
Sub total	**50**			**Sub total**	**50**		
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**500**			**Section % Score**	**100**		

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.							
Contract No.:	Contractor's Name:						
5.0 Reporting of Accidents and Dangerous Occurrences and Accident Investigations							
5.1 Reporting to Employer	**A**	**B**	**C**	**5.2 Reporting to Govt. organisation**	**A**	**B**	**C**
Verbal information	10			Reporting to Regional Labour Commissioner	10		
Written information within 24 hrs	10			Reporting to welfare board	10		
Delay in reporting	10			Reporting to director general	10		
Are all accidents identified and recorded	10			Reporting to police station	10		
Are AFR rates calculated	10			Reporting to District Magistrate	10		
Sub total	**50**			**Sub total**	**50**		
5.3 Incident Reporting	**A**	**B**	**C**	**5.4 Follow up Action**	**A**	**B**	**C**
Is there a proper reporting procedure	10			Does Senior Manger review all reports	10		
Is the procedure communicated to all	10			Is result of investigation published	10		
Are reports available for inspection	10			Are workers advised of remedial action	10		
Do reports accurately describe incident	10			Are failure in Management recognized	10		
Is standardised form used	10			Whether statistics report prepared	10		
Sub total	**50**			**Sub total**	**50**		
5.5 Procedure for investigation	**A**	**B**	**C**	**5.6 Incident Investigation**	**A**	**B**	**C**
Made Photographs and sketches	10			Are witness statement taken	10		
Examine involved equipment	10			Is the chain of events identified	10		
Interviewed the eye-witnesses	10			Is specific sub contractor identified	10		
Consulted expert opinion	10			Investigation kit available	10		
Environmental conditions	10			Investigation report made available to Employer	10		
Sub total	**50**			**Sub total**	**50**		
	A	**B**	**C**		**A**	**B**	**C**
Sub total				**Sub total**			
	A	**B**	**C**		**A**	**B**	**C**
Sub total				**Sub total**			
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**300**			**Section % Score**	**100**		

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

Contract No.:	Contractor's Name:

6.0 Housekeeping

6.1 Procedure	A	B	C	6.2 Organisation	A	B	C
Is it mentioned in ESHS plan	10			Adequacy of housekeeping personnel	10		
Responsibility classified	10			Is housekeeping personnel trained	10		
Housekeeping round the clock	10			Employer's approval for housekeeping personnel	10		
Reporting of housekeeping personals to ESHS Manager	10			Intimation of vacancy to Employer	10		
Housekeeping persons provided no. / badge	10			Persons provided with suitable logistics / aid	10		
Sub total	**50**			**Sub total**	**50**		
6.3 Housekeeping squad	**A**	**B**	**C**	**6.4 Barricades**	**A**	**B**	**C**
Housekeeping plan	10			Dimension of the board	10		
Member list	10			HRIDC logo	10		
Job allocation and time allocation	10			Sequential Numbering	10		
Periodicity of housekeeping	10			Availability of protruding parts	10		
Documentation of housekeeping	10			Regular cleaning and painting	10		
Sub total	**50**			**Sub total**	**50**		
6.5 Access / Egress way	**A**	**B**	**C**	**6.6 Dustbins**	**A**	**B**	**C**
Free from debris	10			Lumbar with protruding nails	10		
Unprotected opening	10			Unprotected projection	10		
Free from obstructions	10			Scattered unused materials	10		
Slippery condition	10			Spill of bentonite	10		
Spillage of water or oil	10			Fencing and guarding of equipments	10		
Sub total	**50**			**Sub total**	**50**		
6.7 Housekeeping at worksites	**A**	**B**	**C**	**6.8 Housekeeping at roads**	**A**	**B**	**C**
Lumbar with protruding nails	10			Tyre cleaning of vehicles	10		
Unprotected projection	10			Parking of construction vehicles at road	10		
Scattered unused materials	10			Water logging or bentonite spill on road	10		
Fencing and guarding of equipments	10			Roads kept clean	10		
Stacking and storing of materials	10			Position of barricades lying at roads	10		
Sub total	**50**			**Sub total**	**50**		
6.9 Storage of cylinders	**A**	**B**	**C**		**A**	**B**	**C**
Full / empty separated	10						
Gases separated	10						
Protected from weather	10						
Contents labelled	10						
MSDS available for each gas	10						
Sub total	**50**			**Sub total**			

Contractor's Observations:	Employer's Observations:

Section Scores	450			Section % Score	100		

MONTHLY AUDIT RATING SCORE (MARS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.							
Contract No.:	Contractor's Name:						
7.0 Working at Height							
7.1 Organisation and planning	**A**	**B**	**C**	**7.2 Fragile surface**	**A**	**B**	**C**
Adequate number of trained personnel	10			Suitable working platform	10		
Supervision	10			Guard rails	10		
Planning emergency and rescue	10			Crawling boards	10		
Work permit system	10			Warning notice	10		
Refresher training	10			Work permit system to work	10		
Sub total	**50**			**Sub total**	**50**		
7.3a Scaffolding	**A**	**B**	**C**	**7.3b Scaffolding**	**A**	**B**	**C**
Is scaffolding included in ESHS Plan	10			Scaffolds constructed for correct use	10		
Are scaffolding erected and dismantled by competent workmen	10			Are scaffolds constructed of sound material without patent defect	10		
Are records kept of inspections	10			No unsuitable material	10		
Security fixed or buttressed	10			Working platforms fully boarded	10		
Working platforms free from rubbish	10			Guardrails and mid rails fitted	10		
Sub total	**50**			**Sub total**	**50**		
7.3c Scaffolding	**A**	**B**	**C**	**7.4a Ladders**	**A**	**B**	**C**
Secure ladder access provided	10			Are ladders specified in Safety Plan	10		
Toe board provided	10			Is there a system for checking ladders	10		
'Safe for Use' board erected	10			Are records kept of weekly checks	10		
Availability of base plate	10			Using of Bamboo ladders	10		
Free from rust / corrosion / debris	10			Painting of ladders	10		
Sub total	**50**			**Sub total**	**50**		
7.4b Ladders	**A**	**B**	**C**	**7.5 Guardrails**	**A**	**B**	**C**
Safety procedure followed	10			Present at all working platforms	10		
Rubber bush in aluminium ladder	10			Securely attached	10		
Landing properly	10			Sound material	10		
Climbing procedure	10			Designed as per standard	10		
Rungs at proper intervals	10			Maintained properly	10		
Sub total	**50**			**Sub total**	**50**		
7.6 Harnesses	**A**	**B**	**C**	**7.7 Safety net**	**A**	**B**	**C**
Is use of harnesses specified in ESHS Plan	10			Approved type	10		
Are harnesses of full body type	10			Good construction	10		
Are secure anchorage points used	10			Adequate number to issue	10		
Has instruction on correct use been given	10			Testing	10		
Maintenance and inspection	10			Maintenance	10		
Sub total	**50**			**Sub total**	**50**		
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**500**			**Section % Score**	**100**		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.								
Contract No.:	Contractor's Name:							
8.0 Lifting Operations and Gears								
8.1 Certification	**A**	**B**	**C**	**8.2 ASLI / Other Indicators**	**A**	**B**	**C**
Procedure is available in ESHS Plan	10			Free from damage	10		
Fitness / Test Certificates available	10			In operable conditions	10		
Daily inspection records maintained	10			Overload device tested	10		
Load chart for lifting appliances	10			Overload device operable	10		
Employer's approval for lifting appliances	10			Bypass key made available to I/C	10		
Sub total	**50**			**Sub total**	**50**		
8.3 Wire Ropes	**A**	**B**	**C**	**8.4 Safety Hooks**	**A**	**B**	**C**
Free from damage	10			Free from damage	10		
Lubricated	10			Safety latch fitted	10		
Correctly anchored	10			Safety latch in operable condition	10		
Splicing method	10			Other form of hook closure	10		
Inspection & Testing	10			Test certificates	10		
Sub total	**50**			**Sub total**	**50**		
8.5 Slings, Chains & Shackles	**A**	**B**	**C**	**8.6 Outriggers (Mobile Cranes)**	**A**	**B**	**C**
Properly stored when not in use	10			Outriggers locked in position	10		
In good condition without defects	10			Jacks in good condition	10		
Market with safe working load	10			Jacks firmly supported	10		
Bulldog clips correct fit/number	10			Wheels clear/not supporting load	10		
Correctly used	10			Chassis level	10		
Sub total	**50**			**Sub total**	**50**		
8.7 Operator and Operator cabin	**A**	**B**	**C**	**8.8 Rigging requirement**	**A**	**B**	**C**
Licence for HMV	10			Rigger qualification & experience	10		
Competent & skilled	10			Load assessment	10		
Medical fitness certificate	10			Type of slings to be used	10		
Portable fire extinguisher	10			Hocks & lifting assessment	10		
Defensive driving at IDTR	10			Overhead power line	10		
Sub total	**50**			**Sub total**	**50**		
8.9 Alarms & signals	**A**	**B**	**C**	**8.10 Accessories & controls**	**A**	**B**	**C**
Overload alarm	10			Side & rear view mirror	10		
Over hoist alarm	10			Clutch & brake	10		
Reverse horn	10			Swing & Extension control	10		
Pressure indicators	10			Illumination	10		
Outrigger extension alarm	10			Maintenance	10		
Sub total	**50**			**Sub total**	**50**		
Contractor's Observations				**Employer's Observations:**			
Section Scores	**500**			**Section % Score**	**100**		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.							
Contract No.:	Contractor's Name:						
9.0 Construction Machinery / Hand tools and power tools							
9.1 Machinery Fencing	**A**	**B**	**C**	**9.2 Maintenance**	**A**	**B**	**C**
All moving parts effectively guarded	10			All maintenance properly maintained	10		
Fencing not removed	10			No maintenance whilst M/c in motion	10		
Is procedure in ESHS Plan	10			Records of maintenance kept	10		
Warning board	10			Work Permit System	10		
Emergency stop switch	10			Use of 'Lock Out and Tag Out' (LOTO)	10		
Sub total	**50**			**Sub total**	**50**		
9.3 Air Receivers	**A**	**B**	**C**	**9.4 Wood working machines**	**A**	**B**	**C**
Fitted with pressure relief valve	10			Top guard fitted	10		
Annual test carried out	10			Working space	10		
All couplers with safety chains/wired	10			Guards to protect all drive belts	10		
Condition of hoses	10			Emergency stop switch	10		
Noise level under permissible limit	10			Push stick used	10		
Sub total	**50**			**Sub total**	**50**		
9.5 Grinding machine	**A**	**B**	**C**	**9.6 General**	**A**	**B**	**C**
Appropriate guards fitted	10			Is procedure in ESHS plan	10		
Correct size wheel/disc fitted	10			All operator medically fir and above 21 yrs	10		
Spindle speed marked on M/s	10			Unauthorized riding on plant	10		
Name plate for equipment specification	10			Inspection and maintenance record	10		
Test and maintenance	10			Portable fire extinguisher	10		
Sub total	**50**			**Sub total**	**50**		
9.7 Safe Operating Procedure	**A**	**B**	**C**	**9.8 Requirements**	**A**	**B**	**C**
Available for all machines	10			Manufacturer specification	10		
Available in the working area	10			Control switch	10		
Operator trained	10			GFCI / RCCB and other safety devices	10		
Operator know the same	10			IP 44 plugs, sockets & connectors	10		
Updated regularly	10			Guarding	10		
Sub total	**50**			**Sub total**	**50**		
9.9 Maintenance and Inspection	**A**	**B**	**C**	**9.10 PPE**	**A**	**B**	**C**
Daily inspection	10			Ear protection	10		
Lubrication	10			Hand Protection	10		
Pneumatic and hydraulic pressure	10			Eye protection	10		
Record maintenance	10			Apron	10		
Label displayed in the equipment itself.	10			Nose / face mask	10		
Sub total	**50**			**Sub total**	**50**		
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**500**			**Section % Score**	**100**		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.							
Contract No.:	Contractor's Name:						
10.0 Site Electricity							
10.1 Power assessment	**A**	**B**	**C**	**10.2 Distribution Panels**	**A**	**B**	**C**
Load calculation for power requirement	10			Panel secure box to IP 44	10		
Employer's approval for execution of the job	10			All cables enter box through glands	10		
Is small capacity diesel generator present	10			ELCB or RCCB/ GFCI fitted	10		
Noise from diesel generator	10			Proper earth connection and earth pit	10		
Sub-contractor's power requirement by main contractor	10			Warning signs in appropriate position	10		
Sub total	**50**			**Sub total**	**50**		
10.3 Cables	**A**	**B**	**C**	**10.4 Work on site**	**A**	**B**	**C**
All cables free from damage	10			Site electricity covered in the ESHS Plan	10		
Cables lying on the ground / water	10			Name posted on Main Distribution Board	10		
Cable joints made by IP 44 connectors	10			Single line & Schematic diagram submitted	10		
Correct storage when not in use	10			Employer's Approval for execution	10		
Colour coding	10			GFCI provided	10		
Sub total	**50**			**Sub total**	**50**		
10.5 Electrical professional	**A**	**B**	**C**	**10.6 Earth Pit**	**A**	**B**	**C**
Sufficient numbers	10			As per standard	10		
Professionally qualified	10			Wet condition	10		
Roles and responsibilities defined	10			Pouring 5 litre water per days	10		
Valid license to electrical persons	10			Earth pipe free from corrosion	10		
Training	10			Earth resistance	10		
Sub total	**50**			**Sub total**	**50**		
10.7 Plugs, Sockets and outlets	**A**	**B**	**C**	**10.8 Voltage / Current**	**A**	**B**	**C**
Are all plugs, sockets and outlets IP 44 type	10			Check voltage / current limit	10		
Colour coding of plugs and sockets	10			Rating clearly marked on all equipments	10		
All cables fitted with IP 44 Plugs	10			Monitored continuously	10		
All equipments connected with plugs	10			Mismatch of cable and equipments ratings	10		
All equipments free from defects	10			Properly earthed	10		
Sub total	**50**			**Sub total**	**50**		
10.9 Maintenance	**A**	**B**	**C**	**10.10 Correct Disc. / Revolutions**	**A**	**B**	**C**
Regular inspections carried out	10			Information plate on tool	10		
Records kept	10			Information on Disc/Cutter	10		
Suitable guards/security fenced	10			Compatibility between Tool and Disc	10		
Faults actioned	10			Operator trained/competent to fit Disc	10		
Record maintaining	10			Safety check on condition	10		
Sub total	**50**			**Sub total**	**50**		
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**500**			**Section % Score**	**100**		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.								
Contract No.:	Contractor's Name:							
11.0 Fire prevention								
11.1 Fire fighting personnel	**A**	**B**	**C**	**11.2 Requirements**	**A**	**B**	**C**
Adequacy of Fire fighting personnel	10			Emergency plan	10		
Professionally qualified	10			Fire excavation plan	10		
Employer's approval	10			Mock drill	10		
Intimation of vacancy to Employer	10			Nearest fire brigade phone numbers	10		
Adequate no of trained persons	10			Reporting of fire accident to Employer	10		
Sub total	**50**			**Sub total**	**50**		
11.3 Combustible material	**A**	**B**	**C**	**11.4 Fire Extinguisher**	**A**	**B**	**C**
Used in site	10			Adequate numbers	10		
Handling of combustible material	10			Appropriate type	10		
Stored in separate place	10			Easily accessible	10		
Spillage of materials	10			Frequency of recharge	10		
Location of burning site	10			Maintenance and inspection	10		
Sub total	**50**			**Sub total**	**50**		
11.5 Fir fighting equipments	**A**	**B**	**C**		**A**	**B**	**C**
Sufficient quantity of water supply	10						
Fire hose and nozzle	10						
Fire alarm	10						
Condition of fire hydrants	10						
Sufficient no. available	10						
Sub total	**50**						
	A	**B**	**C**		**A**	**B**	**C**
Sub total				**Sub total**			
	A	**B**	**C**		**A**	**B**	**C**
Sub total				**Sub total**			
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**250**			**Section % Score**	**100**		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

Contract No.:	Contractor's Name:

12.0 Welding & Cutting

12.1 Gas Welding / Cutting	A	B	C
Is procedure in ESHS Plan	10		
Are cylinders in cylinder-trolley	10		
Are pressure gauges fitted and operable	10		
Are flashback arresters fitted	10		
Are non return valves fitted	10		
Sub total	50		

12.2 storage of cylinders	A	B	C
Is procedure in ESHS Plan	10		
Storage in upright position	10		
Full/empty segregated	10		
Different gases separated	10		
Contents labelled	10		
Sub total	50		

12.3 Condition of cylinders	A	B	C
No damage by misuse	10		
No rust/corrosion	10		
Protected from weather	10		
Colour coding proper	10		
MSDS available	10		
Sub total	50		

12.4 Hose	A	B	C
Colour coding	10		
Hose clip and clamp	10		
Is it free from leak and damage	10		
Hose lying on the ground	10		
Joints if any	10		
Sub total	50		

12.5 Electric Arc Welding	A	B	C
Are welding machines in good order	10		
Welding leads free form defect	10		
Welding return free from defect	10		
Electrode holder properly insulated	10		
Dipping electrode in water when it is hot	10		
Sub total	50		

12.6 Transformer	A	B	C
Presence of voltmeter and ammeter	10		
Separate main power switch	10		
Ground connection	10		
Specification plate or board	10		
Protected from weather	10		
Sub total	50		

12.7 Electrical Cable	A	B	C
Cable lying on ground / water	10		
IP 44 cable connectors instead of insulation tape	10		
Damaged and exposed wires	10		
Separate earthing connection from work piece to transformer	10		
Electrical protection devices ELCB, RCCB,etc	10		
Sub total	50		

12.8 Work Area	A	B	C
Area clear of flammable substances	10		
Smoking inside the work area	10		
Fire extinguisher fitted	10		
Welding screens available	10		
Ventilation and fume extraction	10		
	50		

12.9 PPE for welder, cutter and helper	A	B	C
Face and eye protection	10		
Gauntlet gloves	10		
Safety footwear	10		
Nose mask	10		
Ear muff / plug	10		
Sub total	50		

	A	B	C
Sub total			

Contractor's Observations:	Employer's Observations:

Section Scores	450			Section % Score	100		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

Contract No.:	Contractor's Name:

13.0 Excavations and Trenching

13.1 Planning	A	B	C
Are excavations covered in ESHS Plan	10		
Examined by competent person	10		
Records of inspection maintained	10		
Underground cable and pipelines	10		
Backfilling and removal of trench	10		
Sub total	50		

13.2 Access/Egress	A	B	C
Suitable ladders provided	10		
Ladders properly secured	10		
Alternative ladders available	10		
Staircase for excavation more 1.5 m depth	10		
Guardrail for staircase.	10		
Sub total	50		

13.3 Shoring	A	B	C
Shoring as soon as earth is removed	10		
Suitable support	10		
Regular monitoring	10		
Proper repair under taken	10		
Material stacked properly on removal	10		
Sub total	50		

13.4 Barriers and Warnings	A	B	C
Rigid barrier around excavation	10		
Suitable warning notices	10		
Regularly checked by supervisor	10		
Warning light & signs	10		
Emergency exit board	10		
Sub total	50		

13.5 Soil	A	B	C
Not closer than 1 metre	10		
Properly stacked	10		
Excavator clear of personnel	10		
Storage of Excavated materials	10		
Logistics for excavated soil	10		
Sub total	50		

13.6 Underground Services	A	B	C
Checks made with Utility providers	10		
Safe digging procedures in use	10		
Supervision has service plans	10		
Dewatering procedures	10		
Line of dewatering	10		
Sub total	50		

13.7 Undermining Nearby Structures	A	B	C
Survey carried out	10		
Temporary support provided if required	10		
Vibration measured	10		
Regular monitoring	10		
Sufficient clearance provided	10		
Sub total	50		

13.8 Portable Electrical Equipment	A	B	C
Are as per standard	10		
Proper repair and condition	10		
Rating voltage more than 24 V	10		
Double insulation	10		
Open bare wires	10		
Sub total	50		

13.9 Ventilation and Illumination	A	B	C
Are as per standard	10		
Exhaust fan arrangement	10		
Temperature management	10		
Gas monitoring systems	10		
Lighting arrangement	10		
Sub total	50		

13.10 Signals & Communication	A	B	C
Audio, Video signals	10		
Walkie-talkie / radio /mobile phones	10		
Head protection	10		
Arm protection	10		
Leg protection	10		
Sub total	50		

Contractor's Observations:	Employer's Observations:

Section Scores	500			Section % Score	100		

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

Contract No.:	Contractor's Name:

14.0 Tunnelling and Confined Space operations

14.1 Procedure	A	B	C	14.2 Equipments	A	B	C
Procedure in ESHS Plan	10			Gas monitoring equipment	10		
Permit Work system in use	10			Rescue BA equipment	10		
Only properly trained operatives	10			Full body harness for each worker	10		
Existing underground cables and pipelines	10			Tripod and lifeline	10		
Refresher training	10			Resuscitation Equipment	10		
Sub total	50			Sub total	50		
14.3 Access and Egress	**A**	**B**	**C**	**14.4 Procedure**	**A**	**B**	**C**
Proper staircase and lift	10			Inform to Director General before 30 days	10		
Guardrail for staircase	10			Emergency power generator	10		
Staircase made of sound material	10			Watertight bulkhead doors at entrance	10		
Free from defects	10			Reflective jackets for workers	10		
Emergency exit	10			Dewatering procedures	10		
Sub total	50			Sub total	50		
14.5 Warning / Communication systems	**A**	**B**	**C**	**14.6 Electrical equipment**	**A**	**B**	**C**
Telephone / walkie-talkie	10			Flame proof electrical equipment	10		
Emergency Alarm	10			Portable tools more than 24 V	10		
Warning for Exit way and electrical panel boards	10			Double insulation / earthing condition of portable equipment	10		
High visibility waist	10			Transformer used in without compressed air	10		
Warning lights	10			Bare conductor or semi enclosed fuse	10		
Sub total	50			Sub total	50		
14.7 Illumination and Ventilation	**A**	**B**	**C**	**14.8 Compressed air**	**A**	**B**	**C**
Illumination / ventilation levels	10			Adequacy of air supply	10		
Air circulation	10			Emergency power supply	10		
Level of oxygen / other toxic gas	10			Flame proof equipment	10		
Temperature level (not more than 29° C)	10			Available in man-locks and medical-locks	10		
Emergency power supply for luminaries	10			Hoses free from damage	10		
Sub total	50			Sub total	50		
14.9 Fire Prevention	**A**	**B**	**C**	**14.10 Health and Welfare**	**A**	**B**	**C**
Adequate water supply	10			Man-lock and medical-lock	10		
Fire alarm	10			Drinking water	10		
Flammable materials inside work areas	10			Medical officer	10		
Water outlet points	10			First-aid room	10		
Inspection and maintenance	10			Shelter room	10		
Sub total	50			Sub total	50		

Contractor's Observations:	Employer's Observations:

Section Scores	500			Section % Score	100		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.								
Contract No.:	Contractor's Name:							
15.0 Traffic management								
15.1 Traffic marshals	**A**	**B**	**C**	**15.2 Vehicle operators**	**A**	**B**	**C**
Sufficient numbers	10			Driving licence	10		
Professionally qualified or trained	10			Medically fitness	10		
Medically fit	10			Defensive driving training	10		
Driving licence	10			Refresher training	10		
Familiar with traffic signs	10			Fire fighting training	10		
Sub total	**50**			**Sub total**	**50**		
15.3 Traffic control devices	**A**	**B**	**C**	**15.4 Barricades**	**A**	**B**	**C**
Cons	10			Erected around the construction site	10		
Drums	10			Free from defects and protruding parts	10		
Delineators	10			Numbered	10		
Traffic cylinders	10			Painted and maintained in good condition	10		
Traffic signs and barricades	10			Barricade register	10		
Sub total	**50**			**Sub total**	**50**		
15.5 Barricades	**A**	**B**	**C**	**15.6 Regulatory Signs**	**A**	**B**	**C**
Barricade inspector & supervisor appointed	10			Approval from police and traffic authorities	10		
Retro reflective strips shape and size	10			Warning signs	10		
Reflective strips placed at a angle at bottom	10			Red light / flag indicator	10		
Minimum gap between retro reflective strips 1000mm	10			Design as per employer's approval	10		
One red light / blinker per barricade	10			Material made of reflective type.	10		
Sub total	**50**			**Sub total**	**50**		
15.7a Vehicle	**A**	**B**	**C**	**15.7b Vehicle**	**A**	**B**	**C**
Vehicle number and company name	10			Brakes in good working order	10		
Inspection stickers & license plate	10			Are wiper blades in good condition	10		
Seat belts	10			Rear view mirrors	10		
Two reflective triangles on rear side	10			Speedometer	10		
Fog lights (front & rear)	10			Vehicle's horn and reverse alarm	10		
Sub total	**50**			**Sub total**	**50**		
15.8 Heavy motor vehicles	**A**	**B**	**C**	**15.9 Operator cabin**	**A**	**B**	**C**
Automatic safe load indicator	10			Made of fire resistance material	10		
Load chart of the vehicle	10			Protection from vibration	10		
Fitness certificate	10			Weather protection	10		
Manufacturer details	10			Adequate ventilation	10		
Marking of safe working load	10			Suitable fire extinguisher	10		
Sub total	**50**			**Sub total**	**50**		
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**500**			**Section % Score**	**100**		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.								
Contract No.:	Contractor's Name:							
16.0 Personal Protective Equipment								
16.1 Head Protection	**A**	**B**	**C**	**16.2 Foot Protection**	**A**	**B**	**C**
Use enforced	10			Use enforced	10		
As per standard	10			Suitable type	10		
In good condition	10			Toecaps effective	10		
Colour and company logo	10			Fair condition	10		
Available for issue	10			Available for issue	10		
Sub total	**50**			**Sub total**	**50**		
16.3 Eye protection	**A**	**B**	**C**	**16.4 Hearing Protection**	**A**	**B**	**C**
Use enforced	10			Use enforced	10		
As per standard	10			As per standard	10		
Suitable type	10			Suitable type	10		
Good condition	10			Available for issue	10		
Available for issue	10			Noise levels monitored	10		
Sub total	**50**			**Sub total**	**50**		
16.5 Respiratory Protection	**A**	**B**	**C**	**16.6 Protective Gloves**	**A**	**B**	**C**
Use enforced	10			Use enforced	10		
As per standard	10			As per standard	10		
Suitable type	10			Correct type for operation	10		
Good condition	10			Good condition	10		
Available for issue	10			Available for issue	10		
Sub total	**50**			**Sub total**	**50**		
16.7 High-Visible Waist	**A**	**B**	**C**	**16.8 Fall Protection**	**A**	**B**	**C**
Use enforced	10			Use enforced	10		
As per standard	10			As per standard	10		
In good condition	10			In good condition	10		
Warning signs displayed	10			Warning signs displayed	10		
Available for issue	10			Available for issue	10		
Sub total	**50**			**Sub total**	**50**		
16.9 PPE for visitors	**A**	**B**	**C**		**A**	**B**	**C**
Use enforced	10						
10% PPEs for visitors in site office	10						
In good condition	10						
Colour and company logo	10						
Available for issue	10						
Sub total	**50**			**Sub total**			
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**450**			**Section % Score**	**100**		

MONTHLY AUDIT RATING SCORE (MARKS)

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

Contract No.:	Contractor's Name:

17.0 Industrial Health & Hygiene and Lighting & Ventilation

17.1 Medical examination	A	B	C	17.2 Occupational Health Centre	A	B	C
All worker under gone	10			Construction medical officer & qualification	10		
Covered all testes as per standard	10			Availability nurse & sweeper	10		
Conducted by qualified person	10			Floor area minimum 15 m^2 with two rooms	10		
Confidential report for all workers	10			Adequate equipment	10		
Frequency of medical test maintained	10			Medical emergency equipments	10		
Sub total	50			**Sub total**	50		
17.3 First-aid	A	B	C	**17.4 Ambulance van and room**	A	B	C
Equipped with all items as per standard	10			Equipped with all items as per standard	10		
Sufficient numbers	10			Availability and numbers	10		
First-aid room facility	10			Maintained in good repair	10		
First-aider & his qualification	10			Equipped with standard facilities	10		
Register for first-aid	10			Record of all cases of accident & sickness	10		
Sub total	50			**Sub total**	50		
17.5 Mosquito breeding	A	B	C	**17.6 Alcohol and drugs & HIV / AIDS prevention**	A	B	C
Water retain on the site	10			Employee working under the influence of alcohol / drugs	10		
Periodic interval	10			Smoking at public worksites	10		
Still waters	10			Smoking at public worksites	10		
Posters	10			HIV / AIDS awareness training provided	10		
Usage of insecticides	10			Workers participation / co-operation	10		
Sub total	50			**Sub total**	50		
17.7 Noises	A	B	C	**17.8 Vibration**	A	B	C
Are procedures for noise evaluation in the Safety Plan	10			Monitoring method	10		
Are noise assessments carried out	10			Frequency of monitoring	10		
Are noise zones identified	10			Vibration limits	10		
Is correct PPE provided	10			Report maintenance	10		
Usage of PPE	10			Control plan	10		
Sub total	50			**Sub total**	50		
17.9 Radiation	A	B	C		A	B	C
Method statement	10						
Approval from Employer	10						
Use and storage of radioactive substance	10						
Disposal of radioactive substance	10						
Appropriate PPE	10						
Sub total	50			**Sub total**			

Contractor's Observations:	Employer's Observations:

Section Scores	450			Section % Score	100		

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.								
Contract No.:	Contractor's Name:							
18.0 Welfare amenities								
18.1 Toilets / Urinals	**A**	**B**	**C**	**18.1a Toilets / Urinals**	**A**	**B**	**C**
Enough no available	10			Is it properly illuminated	10		
Separate for men and women	10			Is it having separate and ample water facility	10		
Access within 500m from worksite	10			Is it having proper drainage system	10		
Is it properly cleaned	10			Water leaking or spillage	10		
Is it washed regularly	10			Records kept and available	10		
Sub total	**50**			**Sub total**	**50**		
18.2 Drinking water	**A**	**B**	**C**	**18.3 Canteen**	**A**	**B**	**C**
Quantity is sufficient	10			Is canteen available	10		
Quality is good	10			Is it neat and clean	10		
Laboratory test done	10			Is the flooring dust free	10		
Access within 200m from worksite	10			Is the cost 'no loss and no gain' basis	10		
Is it 6m away from toilets and urinals	10			Lighting, ventilation and water facility	10		
Sub total	**50**			**Sub total**	**50**		
18.4 Labour Accommodation	**A**	**B**	**C**	**18.5 Creaches**	**A**	**B**	**C**
Cooking, bathing, washing and lavatory facilities	10			Is it free from mosquito and other biological agent	10		
Is it free from mosquito and biological agent	10			In-charge to keep the children.	10		
Is it properly illuminated and ventilated	10			Is it properly illuminated and ventilated	10		
Is it adequate for all	10			Is it adequate for all	10		
Is it neat, clean and hygiene	10			Is it neat, clean and hygiene	10		
Sub total	**50**			**Sub total**	**50**		
18.6 Shelter	**A**	**B**	**C**	**18.7 Illumination**	**A**	**B**	**C**
Adequate to all workers	10			Minimum illumination requirement	10		
Is it properly illuminated and ventilated	10			Minimum 50 lux at work place	10		
Is it neat, clean and hygiene	10			Minimum 30 lux on trolley tracks	10		
Is it free from mosquito and biological agent	10			Minimum 10 lux elsewhere	10		
Drinking water and Toilet facilities	10			Adequate Emergency lighting provided	10		
Sub total	**50**			**Sub total**	**50**		
18.8 Ventilation	**A**	**B**	**C**		**A**	**B**	**C**
Oxygen level less than 19.5	10						
Air circulation of $6m^3$/min for each building Worker employed underground	10						
Free air flow movement in work place	10						
Ventilation system in operation	10						
Maintenance records kept and available	10						
Sub total	**50**			**Sub total**			
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**450**			**Section % Score**	**100**		

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.								
Contract No.:	Contractor's Name:							
19.0 Environmental management								
19.1 Air quality	**A**	**B**	**C**	**19.2 Water quality**	**A**	**B**	**C**
Monitoring by competent person	10			Monitoring by competent person	10		
Monitoring equipment as per standard	10			Monitoring equipment as per standard	10		
Monitoring method	10			Monitoring method	10		
Report to Employer	10			Report to Employer	10		
Control plan	10			Control plan	10		
Sub total	**50**			**Sub total**	**50**		
19.3 Noise monitoring	**A**	**B**	**C**	**19.4 Illumination monitoring**	**A**	**B**	**C**
Monitoring by competent person	10			Monitoring by competent person	10		
Monitoring equipment as per standard	10			Monitoring equipment as per standard	10		
Monitoring method	10			Monitoring method	10		
Report to Employer	10			Report to Employer	10		
Control plan	10			Control plan	10		
Sub total	**50**			**Sub total**	**50**		
19.5 Temperature monitoring	**A**	**B**	**C**	**19.6 Dust control**	**A**	**B**	**C**
Monitoring by competent person	10			Water sprinkler arrangement	10		
Monitoring equipment as per standard	10			Frequency water sprinkler inside the site	10		
Monitoring method	10			Dust screens	10		
Report to Employer	10			Dust level under permissible limit	10		
Control plan	10			Environmental monitoring	10		
Sub total	**50**			**Sub total**	**50**		
19.7 Waste Management	**A**	**B**	**C**	**19.8 Felling of Trees**	**A**	**B**	**C**
Dustbin in construction site	10			Approval from forest department	10		
Temporary dumping area	10			Trees used for anchorage.	10		
Separate dumping pit for disposable and non-disposable wastes	10			Trees exposed or injured by construction equipment	10		
Frequency of removal of waste	10			Protective barriers around tree	10		
Burning of waste	10						
Sub total	**50**			**Sub total**	**40**		
19.10 Energy Management	**A**	**B**	**C**		**A**	**B**	**C**
Uniform illumination	10						
Size and length of cable and wires	10						
Efficient luminaries	10						
Efficient motors and pumps	10						
Efficient air-conditions	10						
Sub total	**50**			**Sub total**			
Contractor's Observations:				**Employer's Observations:**			
Section Scores	**440**			**Section % Score**	**100**		

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LTD..

Contract No.:	Contractor's Name:

20.0 Batching Plant and Casting Yard

20.1 General	A	B	C	20.2 Layout	A	B	C
Is procedure in ESHS Plan	10			Plan of layout	10		
All operators medically fit/over 21	10			Drainage system	10		
No unauthorized riding on plant	10			Welfare amenities	10		
Daily inspections / recorded	10			Plan for vehicle moving area	10		
Equipped with all	10			Barrication	10		
Sub total	**50**			**Sub total**	**50**		
20.3 Material Handling & dust protection	**A**	**B**	**C**	**20.4 PPE**	**A**	**B**	**C**
Handling of cement bag	10			Hand protection	10		
Loading and unloading cement	10			Respiratory protection	10		
Handling of launching segments	10			Head protection	10		
Is dust level under permissible limit	10			Foot protection	10		
Environmental monitoring	10			Ear protection	10		
Sub total	**50**			**Sub total**	**50**		
20.5 Traffic management	**A**	**B**	**C**	**20.6 Welfare facilities**	**A**	**B**	**C**
Barricades	10			Toilet	10		
Warning boards	10			Drinking water	10		
Traffic marshals	10			Canteen	10		
Delineators	10			Shelter	10		
Lane warning	10			Labour accommodation	10		
Sub total	**50**			**Sub total**	**50**		
20.7 Fitness certificate	**A**	**B**	**C**		**A**	**B**	**C**
Crane	10						
Hydra and all equipment	10						
Ropes and chains	10						
Hooks and shackles	10						
Rigger & Operator	10						
Sub total	**50**			**Sub total**			
	A	**B**	**C**		**A**	**B**	**C**
Sub total				**Sub total**			

Contractor's Observations:	Employer's Observations:

Section Scores	350			Section % Score	100		

Attachment -5 Safe Work Procedure for Work Near Railway Track

1.0 Safety precautions and measures to be observed during execution of ROB/ RUB/ Viaduct/ any other works in Railway and adjoining areas:

1.1 The Contractor(s) shall not allow any road vehicle belonging to him or his suppliers, etc. to ply in HRIDC/railway land next to the running line. If for execution of certain works viz. earthwork for parallel railway line and supply of ballast for new or existing rail line gauge conversion, etc. road vehicles are necessary to be used in railway/HRIDC land next to the railway line, the Contractor(s) shall apply to the Engineer-in-Charge for permission giving the type and number of individual vehicles, names and license particulars of the drivers, location, duration and timings for such work/movement. The Engineer-in-Charge or his authorized representative will personally counsel, examine and certify the road vehicle drivers, Contractor(s)' flagmen and supervisors and will give written permission giving names of road vehicle drivers, Contractor(s)' flagmen and supervisors to be deployed on the work, location, period and timing of the work. This permission will be subject to be following obligatory conditions:

1.2 Construction Activities and Safety:

(a) The 'Methodology of Working' shall be incorporated in GAD and Temporary Arrangement Drawings.

(b) The activities of work to be taken up during the railway traffic block/under speed restriction, etc. should be clearly mentioned in such drawings. If at any stage of execution, any discrepancy is found in the drawing with respect to the site condition affecting safety or some new activity of work is required to be done, the same should be brought to the notice of Railway & HRIDC Engineers and such works should be done only after approval by Railways & HRIDC representative. In such cases, scheme may be modified and, if required, fresh CRS sanction shall have to be obtained.

1.2.1 The works required to be done under traffic block protection, are to be carried out only in the presence of Railway & HRIDC Engineering Officials. The Railway's and HRIDC's Supervisor has to certify safe conditions for passage of trains before resumption of traffic. The works to be done under traffic shall be carried out under the provision of banner flag and protection by Engineering Flagman.

1.2.2 Following important activities of works shall be carried out under supervision of Railway/HRIDC Engineer or his nominated Supervisor:

(a) Excavation at foundation/ground level near to railway track

(b) Concrete casting and/or masonry work very close to railway track
(c) Erection of temporary structures near to running lines.
(e) Casting of structures like girder/slab over railway track
(e) Stage-prestressing of girders when placed across railway tracks properly supported
(f) Launching of precast/pre-assembled girders across railway tracks
(g) Any work of lifting, side shifting and slewing of girders over the railway track
(h) Dismantling of temporary structures, shuttering, scaffolding, etc. adjacent to and above the railway track. For carrying out activities of casting, erection, launching, handling and dismantling as listed above, the Contractor's Engineer shall furnish the Construction Programme in advance to HRIDC Supervising Engineer & Engineer representative. No such work should be taken up in absence of the HRIDC Supervising Engineer & Engineer representative. For the activities which are to be done in presence of the HRIDC Engineer and prior intimation shall be given in writing and acknowledgement obtained from HRIDC's representative.

1.2.3 To ensure 'Safety' during construction activities, HRIDC Site Engineer & Engineer representative may direct the Contractor's Supervisor/Engineer or their nominated representative for safe working procedures/ instructions, notwithstanding the contractual or MOU conditions prevailing between/ among Railways/other Departments like NHAI/Contractors/ Concessionaire.

1.2.4All the records of Quality Assurance/Quality Control, testing of the materials and satisfactory completion of an activity shall be maintained at site by the Contractor's Engineer and Supervisor. On the basis of these records, HRIDC Site Engineer shall do stage-wise clearance of the works at following stages:
(i) Completion of foundation
(ii)Completion of substructure
(iii)Completion of superstructure
Without such stage clearance, the work in next stage of construction shall not be allowed by the HRIDC Supervisor, unless proper system of check and exercise is followed at the site.

1.2.5 Normally, the high beam PSC girders are designed with wider top flange and shorter bottom flange with very high beam which makes the girder unsuitable during lowering, slewing and launching time.

1.2.5 During launching of girders and subsequent adjustments for placement of bearing, special attention and precautions are required at site to be followed rigorously without resorting to shortcut practice or leaving the work at site to untrained or inexperienced Engineers. Normally, end diaphragms are not cast for the extreme both side girders. These shall be cast minimum 300mm on both sides for all 'I' beam girders to provide temporary supports for ensuring stability.

"OR"

For side adjustments and bearing placements below 'I' section girders, end brackets made of steel angles should be provided for all 'I' beams sequentially to avoid side titling of individual girders. End brackets shall be removed only after placing girders on bearing and casting of diaphragms.

1.2.6 During lowering, the jacks shall be operated duly keeping wooden packing of various thicknesses fixing the amount of lowering to the barest minimum, so that even if the jack fails, the wooden packing will take load and further stability of girder is not endangered.

1.2.7 Temporary crib support staging shall be interlaced with clamps and angles. Adequate base width shall be maintained proportionate to the height of stage, which is very essential for avoiding the oblong effect during launching of girders. During launching by RH girder method, the movement of the PSC girders shall be controlled both from front and rear with sync mechanism having simultaneous operation, so that the speed of the launching is always under the control. Spare hydraulic jacks shall always be kept at site. Lowering of girder shall always be carried out at one end only. Further, other end should be adequately secured by wire ropes, end brackets, etc. Thereafter, the process shall be continued alternately.

1.2.8 As far as possible, launching of girders by temporary staging shall be avoided and launching by heavy capacity cranes, wherever feasible, shall be adopted.

1.2.9 Steel girder launcher if used for launching of PSC girders should be pre-tested for the critical loading (likely to be encountered during actual launching) before deployment on the approaches regarding its strength as well as amount of permissible deflection using actual test PSC girder as a testing load. Connections at supports shall be inspected and certified prior to actual launching. It shall be adequately secured to the base support system on the pier cap.

1.3 General Construction Safety:

1.3.1 General safety precautions as applicable for civil works shall be adopted in field.

1.3.2 Working near running line: Safe practices at site and at all times non-infringement to moving trains shall be ensured. Road vehicles, material trolleys, dollies with any tendency to roll off towards the running lines to be checked by providing chains, locking arrangements, blocks, etc. shall be ensured and the Site-in-Charge of the Contractor shall be primarily responsible, secondary responsibility being of Contractor's Consultant.

1.3.3 Testing of cranes, lifting jacks and other equipment: All equipment like cranes, lifting jacks

shall be tested, duly calibrated and certified prior to the use at construction site.

1.3.4 Routine safety checks, validity of test certificates for load bearing equipment especially for cranes outsourced from third party shall be ensured prior to deployment.

1.3.5 Construction workers at site shall be provided with personal safety gear like reflective vest, helmet, Safety shoes, gloves & eyewear approved as per construction industry standards. For persons working at pier top/girder level, temporary supports, hand railing, protection with help of ropes, slings and temporary railings shall be provided.

2.0 Safety Guidelines and Precautions for working close to Railway tracks

2.1 A large number of men and machinery are deployed by the contractors for track renewals, gauge conversions, doublings, bridge rebuilding etc. It is therefore essential that adequate safety measures are taken for safety of the trains as well as the work force. The following measures should invariably be adopted.

A. The contractor shall not start any work without the presence of HRIDC Engineer at site.

B. Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work shall be so carried out that there is no infringement to the Railway's schedule of dimensions. For this purpose, the area where road vehicles and/or machinery are required to ply, shall be demarcated and acknowledged by the contractor. Special care shall be taken for turning/ reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions.

C. The look out and whistle caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable flagmen/detonators shall be provided where necessary for protection of trains.

D. The supervisor/workmen should be counseled about safety measures. A competency certificate to the contractor's supervisor as per Performa annexed shall be issued by DGM/HRIDC, which will be valid only for the work for which it has been issued.

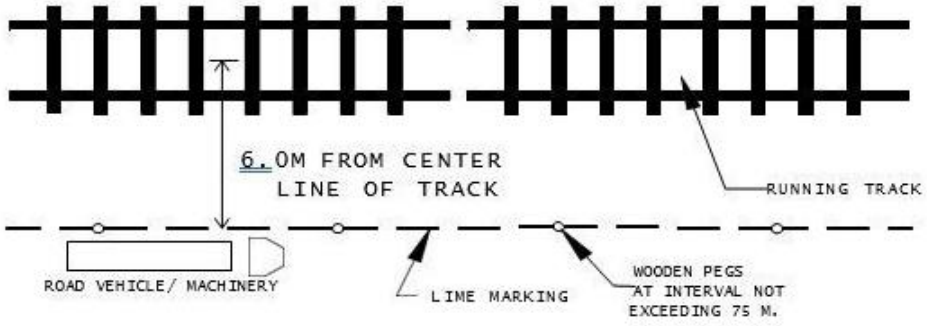
E. The unloaded ballast/rails/sleepers/other P-Way materials after unloading along track should be kept clear off moving dimensions and stacked as per the specified heights and distance from the running track.

F. Supplementary site-specific instructions, wherever considered necessary shall be issued by the HRIDC's representative.

2.2 PLYING OF ROAD VEHICLES AND WORKING OF MACHINERIES CLOSE TO RUNNING TRACKS

A. Normally, the road vehicles shall be run, or machinery shall be worked so as not to come closer than 6.0m from centre line of nearest running track.

B. The land strip adjacent to running tracks, where road vehicle is to ply or machinery is to work, shall be demarcated by lime in advance in consultation with the Railway's & HRIDC's Engineer. Wooden pegs at interval not exceeding 75mtr. shall be provided along the line marking as permanent marks. The road vehicles shall ply or machinery shall work so as not to infringe the line of demarcation.



C. **If a road vehicle or machinery is to work closer to 6.0m due to site conditions or requirement of work, following precautions shall be observed**:

a) In no case the road vehicle shall run or machinery shall work at distance less than 3.5m from centre line of track.
b) Demarcation of land shall be done by bright colored ribbon/nylon cord suspended on 120 cm high wooden/bamboo posts at distance of 3.5 m from centre line of nearest running track.
c) Presence of an authorized HRIDC's representative shall be ensured before plying of vehicle or working of machinery.
d) Railway's Supervisor shall issue suitable caution order to Drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train. Whistle boards shall be provided wherever considered necessary.
e) Lookout men shall be posted along the track at a distance of 800m from such locations who will carry red flag and whistles to warn the road vehicle/machinery users about the approaching trains.

f) On curves where visibility is poor, additional lookout men shall be posted.

D. **If vehicle/machinery is to be worked closer to 3.5m from running track** - Under unavoidable conditions, if road vehicles is to ply or machinery is to work closer to 3.5m due to site conditions or requirement of work, following precautions shall be observed:
   a) Plying of vehicles or working of machinery closer to 3.5m of running track shall be done only under protection of track. Traffic block shall be imposed wherever considered necessary. The site shall be protected as per provisions of Para No. 806 & 807 of P-Way Manual as case may be.
   b) Presence of a Railway's/, HRIDC's Supervisor shall be ensured at worksite.
   c) Railway's& HRIDC's Supervisor shall issue suitable caution order to Drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train.

E. **Precaution to be taken while reversing road vehicle alongside the track**

   The location where vehicle will take a turn shall be demarcated duly approved by Railway's/HRIDC's representative. The road vehicle driver shall always face the Railway track during the course of turning/reversing his vehicle. Presence of an authorized Railway/HRIDC representative shall be ensured at such location.

F. Road vehicle shall not be allowed to run along the track during night hours generally. In unavoidable situations, however, vehicles shall be allowed to work during night hours only in the presence of an authorized Railway's/HRIDC's representative and where adequate lighting arrangements are made and where adequate precautions as mentioned earlier have been ensured.

G. Road vehicles/machinery/plant etc. when stabled near running tracks shall be properly secured against any possible roll off and always be manned even during off hours.

2.3 EXECUTION OF WORKS CLOSE TO OR ON RUNNING LINES

A. Any work close to or on running tracks shall be executed under the presence of a HRIDC's Supervisor only.

B. Precaution to be taken to ensure safety of trains while execution of work close to the running line or on running lines.
   a) Such works shall be planned and necessary drawings particularly with regard to infringement to moving dimensions shall be finalized duly approved by competent

authority before execution of work. The work shall be executed only as per approved procedure and drawings.

b) All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimension do not infringe.
c) Suitable speed restriction shall be imposed, or Traffic block shall be ensured as required.
d) Necessary equipment for safety of trains during emergency shall be kept ready at site.

C. Precaution to be taken to ensure safety of electrical/signal/ telephone cables while excavating near tracks.

a) Particular care shall be taken to mark the locations of buried electrical/signal/telephone cables on the plans jointly with S & T/Electric supervisor and also at site so that these are not damaged during excavation.
b) Copy of the cable plan should be given to the contractor's authorized representative before handing over the site to start the work.
c) Due care shall be taken to ensure that any part of the equipment or machinery or temporary arrangement does not come close to cables while working.
d) Joint procedure order No. 17/2013 issued by Railway Board vide letter No.2003/Tele/RCIL/1 PtIX dated 24.06.2013 shall be followed for undertaking digging work in the vicinity of underground signaling, electrical and telecommunication cables.

D. Precaution to be taken during execution of works requiring traffic blocks.

a) Any work, which infringes the moving dimensions, shall be started only after the traffic block has been imposed.
b) Before closing the work, the track shall be left with the proper track geometry so that the trains run safely.
c) After completion of work the released sleeper and fittings should be properly stacked away from the track to be kept clear of moving dimensions.
d) Block shall be removed only when all the temporary arrangement, machineries, tools, plants etc. have been kept clear of moving dimensions.

E. Precaution to be taken during execution of works during night:

The work close to running line, generally, shall be carried out only during day hours. At locations, however, where night working is unavoidable, proper lighting arrangement should be made. The engineering indicator boards shall be lighted during night hours as per the provisions of IRPWM. The staff deputed for night working should have taken adequate rest before deploying them in night shift. We can specify duration of night shift from 20.00 hrs to 04.00 hrs. All other safety precautions applicable for daytime work should be strictly observed during night working.

F. Precautions to be taken to ensure safety of workers while working close to running lines:

a) Necessary lookout men with red flags and whistles shall be provided to warn the workmen about the approaching train.
b) Railway's/HRIDC's supervisor shall issue suitable caution order to Drivers of approaching train for whistling to warn the workers about the approaching train. Whistle boards shall be provided wherever considered necessary.
c) A "First aid kit" shall always be kept ready at site

G. Precaution shall be taken for safety of public or passengers, while executing works at locations, used by passengers and public

The worksite shall be suitably demarcated to keep public and passengers away from work area. Necessary signage boards such as "Work in progress. Inconvenience is regretted" etc. shall be provided at appropriate locations to warn the public/ passengers. Adequate lighting arrangement of worksite wherever required shall be done to ensure safety of public/passengers during night.

H. Precaution to be taken before stacking materials alongside the track to ensure that safety of trains is not affected - The following precautions shall be taken before stacking the materials along the track for stacking of ballast, rails, sleepers etc.

a) The sites for material stacking should be selected in advance in such a manner as to ensure that no part of the material to be stacked is infringing the Standard Moving Dimensions. A plan of proposed stacking locations be made and signed jointly by an authorized HRIDC's/Railway's representative and contractor's representative.
b) The selected locations shall be marked by lime in advance.
c) Presence of an authorized HRIDC's/Railway's representative while unloading and stacking shall be ensured.
d) The material shall be stacked in such a height so as to not to infringe SOD in case of accidental roll off.

I. **Precaution for handling of departmental material trains -** Instructions for working of material trains are contained in Chapter VIII of IRPWM which should be brought to the notice of the supervisors and other staff working on the material trains. In addition to this, following precautions should be taken:

a) Issue of 'fit to run' certificate:
   As per Para 848 before a material train is allowed to work, the complete rake should be examined by the Carriage and Wagon staff and a 'fit to run' certificate issued to the Guard.
b) As per Para 849 of IRPWM, a qualified Engineering official should be deputed on the train to ensure working of the material train as the Guard is not qualified to carry out such duties like Supervising of loading and unloading of materials.

c) As per Para 845 of IRPWM, the material train should not be permitted to work during the period of poor visibility due to fog, storm or any other cause except with the permission of the ADEN/DEN. Working of the material trains carrying labour should not be permitted between sunset and sunrise except in an emergency.
d) While unloading rail panels by the side of the running track, placement of the panels, clear of the maximum moving dimensions should be ensured.
e) Unloading of rail panels should be done by a team of trained staff under the active supervision of competent Supervisor/Officer.
f) Before unloading of rail panels, site should be prepared by way of leveling/removing extra ballast, if any, from the crib and shoulder with the objective to ensure requisite lateral and vertical clearances so as to prevent slippage of rail panels due to vibration during the passage of trains.
g) Reasonably adequate block should be asked and provided for unloading of the material and the work should be done preferably in day light to avoid shortcut in haste which may infringe the safety requirements.

J. Safety aspects to be observed while working in OHE area

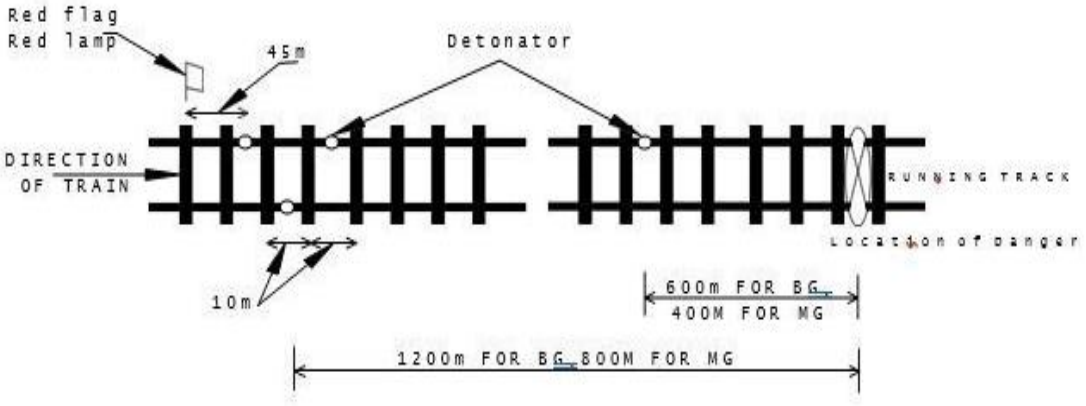
a) No electrical work close to running track shall be carried out without permission of HRIDC representative.
b) A minimum distance of 2m has to be maintained between live OHE wire and body part of worker or tools or metallic supports etc.
c) No electric connection etc. can be tapped from OHE.
d) Authorized OHE staff should invariably be present when the relaying work or any major work is carried out.
e) Power block is correctly taken and 'permit to work' is issued.
f) The structure bonds, track bonds, cross bonds, longitudinal rail bonds are not disturbed and if disconnected for the work, they are reconnected properly when the work is completed.
g) The track level is not raised beyond the permissible limit during the work

2.4 PROTECTION OF TRACK DURING EMERGENCY

A. Action to be taken when a contractor's supervisor or vehicle operator apprehends any unusual circumstances likely to infringe the track and endanger safe running of trains.

a) At any time if a contractor's supervisor or vehicle operator observes any unusual circumstances likely to infringe the track and apprehend danger to safe running of track, he shall take immediate steps to advise a HRIDC official of such danger and assist him in protection of track.

b) The track shall be protected as under. One person shall immediately plant a red flag (red lamp during night) at the spot and proceed with all haste in the direction of approaching train with a red flag in hand (red lamp during night) and plant a detonator on rail at a distance of 600m from the place of obstruction of BG track (400m for MG track) after which he shall further proceed for not less than 1200m from the place of obstruction from BG track (800m for MG track) and plant three detonators at 10m apart on rails. After this he shall display the red flag (red lamp during night) at a distance of 45m from the detonators.
c) Attempts shall also be made to send an advice to nearest Railway/HRIDC station about the incident immediately.



B. Action to be taken if train is seen approaching to site of danger and there is no time to protect the track as per guidelines mentioned above.

In such a case the detonators shall be planted on rails immediately at distance away from place of danger as far as possible and attention of driver of approaching train shall be invited by whistling, waving the red flag vigorously, gesticulating and shouting.

C. What action shall be taken if more than one track is obstructed.

a) In case of single line protection as above shall be done in both the directions from place of danger.
b) In case of double line or multiple lines, if other tracks are also obstructed, the protection as above shall be done for other track also.
c) The protection shall be done in that direction and on that track first on which train is likely to arrive first.
d) The Contractor's Supervisors, Operators and lookout men shall be properly explained about the direction of trains on running tracks.

D. Equipment required for protection of track.

Minimum compliment of protection equipment i.e. 10 detonators, 4 red hand flags, 4 red

hand lamps, 4 banner flags and whistles etc. shall always be kept ready at worksites for use in case of emergency. HRIDC will arrange to provide detonators, whereas Contractor shall arrange other equipment at his own cost.

E. Arrangement of lookout men and competency required for lookout man to warn labour about approaching train.

a) Contractor will provide lookout men.
b) The lookout men shall be properly trained in warning to staff at worksite about approaching train.
c) Only those lookout men shall be provided at site who have been issued with a competency certificate by the Railway's/HRIDC's Supervisor.
d) In case, it is felt necessary to provide lookout men by HRIDC, the charges for the same as fixed by HRIDC Administration shall be recovered from Contractor.

2.5 Training to Supervisors and Operators of Contractor

The Supervisors and Operators of the contractor proposed to be deployed at wok site, which is close to the running track, shall be imparted mandatory training by the HRIDC at site free of cost about the safety measures to be adopted while working in the vicinity of running track. HRIDC's Engineer-in charge of the work shall decide the scale, extent & adequacy of training. In case training is imparted at a recognized Railway training institute, the charges for the same, as decided by HRIDC, shall be recovered from the Contractor. A competency certificate to this effect to the individual Supervisor/Operator shall be issued as given below, by a HRIDC Officer not below the rank of DGM/HRIDC. No Supervisor/Operator of the Contractor shall work or allowed to work in the vicinity of running track that is not in possession of valid competency certificate.

All the labour, materials, tools, plants etc. except detonators, required for ensuring safe running of trains shall be provided by Contractor at his own cost. Wherever lookout men are provided by HRIDC, charges at the rate of Rs. 1000/- per man day shall be recovered from Contractor.

A sample of training competency certificate is provided below for reference:

Competency Certificate

Certified that Shri …… Supervisor/Operator of M/s. …… has been trained and examined in safety measures to be followed while working in the vicinity of running railway track for the work. His knowledge has been found satisfactory and he is capable of supervising the work safely.

This certificate is valid only for the work mentioned in this certificate only.

Signature and designation of the officer