HEALTH, SAFETY & ENVIRONMENTAL PLAN

(In accordance with OHSAS 18001:2007)

BIN RASHED TRANSPORTING & GENERAL CONTRACTING Est.

(ROAD CONSTRUCTION SECTION)

STATUS OF REVISION

DATE	DESCRIPTION	PREPARED BY	REVIEWED BY	APPROVED BY
	HEALTH, SAFETY & ENVIRONMENTAL PLAN	***Manager-HSE***	***Sr.Project Manager***	***CLIENT***

TABLE OF CONTENTS

ANNEXURE

Sl.No.	DESCRIPTION
1	EMERGENCY EVACUATION MAP
2	EMERGENCY RESPONSE PLAN
3	EMERGENCY RESPONSE TEAM FLOW CHART
4	IMS POLICY
5	ESTABLISHMENT ORGANIZATION STRUCTURE
6	HSE ORGANIZATION STRUCTURE
7	PROJECT ORGANIZATION STRUCTURE
8	SAFETY ORGANISATION RESPONSIBILITY
9	ISO 9001-2000 CERTIFICATE

H.S.E FORMS

Sl.No.	DESCRIPTION	FORM No.
1	H.S.E INDUCTION FORMAT	
2	DAILY SAFETY REPORT	
3	DAILY SITE SAFETY CHECKLIST	
4	TOOL BOX TALK	
5	SAFETY MEETING	
6	WEEKLY SAFETY REPORT	
7	MONTHLY SAFETY REPORT	
8	NEAR MISS REPORT	
9	FIRST AID REPORT	
10	ACCIDENT PRELIMANARY REPORT	
11	ACCIDENT INVESTIGATION REPORT	
12	H.S.E COMMUNICATION FORM	
13	H.S.E COMMUNICATION LOG	
14	HAZARD IDENTIFICATION & RISK ASSESSMENT REGISTER	
15	ENVIRONMENTAL ASPECT & IMPACT REGISTER	
16	H.S.E VIOLATION NOTIFICATION	
17	H.S.E YELLOW CARD	
18	H.S.E RED CARD	
19	COLD WORK PERMIT	
20	HOT WORK PERMIT	
21	PERMIT TO WORK REGISTER	
22	AUDIT CHECKLIST (OHSAS 18001-2007)	

FORMATS FOR SUB-CONTRACTORS

TABLES

1. Introduction

This Health, Safety and Environmental (HSE) Plan provides a goal setting frame work for the action which BIN RASHED Est. (BIN RASHED) will take during the course of road construction activities to manage Health, Safety and Environmental issues. The overall objective of the plan is to provide for the implementation of applicable laws, Client/ Consultant/ BIN RASHED. HSE policies, procedures and thereby through active participation of all project personnel to achieve the highest possible HSE standards.

The HSE Plan is structured in such a way as to be auditable, with specific of the plan that HSE issues are the responsibility of and require commitment from all project staff and workers throughout the duration the project. M/s. BIN RASHED and its sub-contractors who all have a contribution to make it successful and safe execution of the project.

2. Scope

This procedure is intended for use by the contractors of BIN RASHED to provide recommendations on how to plan and safely execute road construction works. Although many recommendations of this document may apply, it is not intended to cover service works and sub-contracted transportation works which may have to follow specific rules.

3. IMS Policy

BIN RASHED GEN Transport Est.(BIN RASHED.) Integrated Management System Policy attached duly signed by General Manager. ***Attached.***

4. Objectives

To lay down the procedure for the control of contractors/sub-contractors for Bypass

Project works. BIN RASHED HSE plan will provide a frame work for the program defining when HSE activities shall be performed and the deliverables needed to satisfy the plan. In addition to compliance with client course of practice and other relevant authority documents, BIN RASHED Transport and General Contracting Establishment (BIN RASHED) shall comply with the HSE requirements contained in the latest version of the HSE documents. The objective of this HSE plan is to present the project HSE management systems and activities for the Bypass Project works of MM.

4.1 Management Commitment

BIN RASHED Transport & General Contracting Est. recognizes and accepts its responsibility as an employer for providing a safe and healthy work place and working environment for all its employees including Sub-contractors.

The overall objective of the plan is to pay particular attention for the implementation of Client / Consultant /Company HSE policies and procedures and thereby, through active participation of all project personnel, achieve the highest possible standards.

The company is committed in developing and improving the health, safety and environmental protection of both, its employees and others who may be affected by its activities as follows:

1. Ensuring compliance with all applicable HSE laws, regulations, rules, codes of practice and client / consultant permit conditions;
2. Providing the necessary resources to ensure continual improvement for the effective implementation of the policy;
3. Minimizing the adverse effects of roads construction operations;
4. Accident and injuries are unacceptable; Safety is a line- management

responsibility;

5. Every employee is responsible for his own and his colleagues safety at work;
6. Minimize and manage any environmental impacts.

The sub-contractors who are involved in our project, irrespective of their background, will abide by the client/consultant company's HSE plan. Once the sub-contractor is awarded the job, he shall be issued ' HSE guide lines to contractors' depending on the number and duration of the site visits by his staff.

4.2 Personal Conduct

1. Observe all site safety sign boards and notices.
2. Horse play, fooling, fighting and the possession or use of alcoholic beverages and illegal drugs are strictly prohibited.
3. Do not play with compressed air. Compressed air must never be used for cleaning your clothes or body.
4. Do not ride on bulldozer, cranes, excavators or other equipment.
5. Hard hats (helmets) are to be worn by all employees at work site.
6. Wash your hands with soap and water before every meal. Personal hygiene is very important.
7. Watch and concentrate on what you are doing. Keep your mind on the job, don't day dream.
8. Always obey instructions. If you are in doubt ask your supervisor.
9. Comply with all site safety rules, procedures and instructions. Inform to superiors about unsafe acts and conditions immediately, if any.

4.3 Public Safety and Welfare

1. Keep the public and all other unauthorized persons away from the work area.
2. Place fencing, railings or barricades at excavations, floor openings, and open floors as required.

3. Place barricades, signs and notices to warn traffic, overhead dangers, etc. Have warning lights, flagman or watchman if necessary.
4. Be aware of work going on around you. Keep clear of suspended loads, traffic areas, etc.

4.4 General Safety Precautions at Work Site

1. A clean site is a must with safety posters displayed.
2. Oil, grease and water spills must be cleaned up forthwith.
3. Keep loose materials off stairs, walkways, ladders, etc.
4. Hard hats (helmets) are to be worn by all while at work site.
5. To wear clothing suitable for weather and work. Dhoti', lounges and half pants are prohibited.
6. Have safe access to work areas.
7. Be alert, report unsafe acts/conditions immediately.
8. Lift correctly. Use your legs to take the strain and not your back.
9. Avoid shortcuts - always use ramps, stairs, walkways, ladders, etc.
10. Use scaffold, if solid footing or safe ladder access is not possible.
11. Use of safety belts by the workers working at an elevation is a must. (**1.8 meter and above**)
12. Sturdy ladders on firm base, angling out **1/4th** of ladder height with projection 1 meter above landing for free access preferred.
13. Face ladder when climbing. Use both hands.
14. Platform planks should overlap supports not less than 15 cm and not more than 25 cm and properly secured from shifting plank strength should be tested.
15. To take care of footing before stepping-watch out for overhanging planks, slippery spots, loose objects, etc.
16. Always have enough light on stairs, aisles, basements, work areas, etc.
17. Be careful of projecting nails in stairs, scaffolds, either pull out or bend over.

18. Wear safety goggles or face shields when exposed to flying objects of welding work.
19. Wear proper respiratory when spray painting, burning, exposed to dust or other toxic hazards, as required.
20. Ear protection in the form of earmuffs or approved earplugs will be worn on all high noise level jobs as directed. Cotton or waste will not be used as earplugs.
21. Use gloves, aprons or other suitable skin protection when handling rough materials, chemicals or hot objects. Replace if worn.
22. Safety shoes / gum-boots are to be worn by all while at work site.
23. Consider all electrical wires 'live' until checked and locked out. Keep safe distance (10 feet) from 'live' electricity.
24. Keep 6 meters distance away from overhead electrical cables without fail.
25. Report every injury including minor ones.

4.5 Tools, Equipment and Machinery

1. Do not use electrical power tools or equipment while standing in water unless proper precautions are taken. All electrical power tools and extension cord shall have approved insulation. Damaged cords should be replaced, not repaired.
2. Only qualified personnel should make electrical repairs or installations. Do not use metal ladder near high voltage electricity. Have all cords, leads, hoses, etc, placed to avoid tripping hazards or getting damaged and away from oil, grease.
3. Power tools shall be operated only by authorized personnel with guards furnished by manufacturer and in place. Electrical tools must be grounded unless they are doubly insulated.
4. Use hand tools properly. Damaged or worn parts must be promptly repaired or replaced.
5. Hand tools shall not be used for any other purpose than the intended. All damaged tools or worn parts should be reported to the supervisor for

replacement or repair.

6. Tools, equipment, machinery and work areas are to be maintained in a clean and safe manner.
7. No employee shall operate any machinery, equipment tool unless he has been properly instructed in its use and is thoroughly familiar with all details of its operations.
8. Defect and unsafe conditions shall be reported to supervisor.
9. All switches or drives on machinery shall be shut down before cleaning, greasing, oiling or making adjustments and repairs. All machine guards shall be kept in place while machinery is in operation. Tampering with guards is prohibited and any removal requires the prior approval of supervisor.
10. All guards are to be promptly replaced after the repair work that necessitated their removal has been completed.
11. No employee shall remove a cover from any floor opening, or guardrails, without specific authority from his supervisor.
12. Compressed air or oxygen is not to be used for dusting off clothes or cleaning equipment.
13. Compressed gas cylinders shall be stored in an upright position and will either be tied off or in racks and shall not be allowed to accumulate in the work areas.
14. Compressed gas cylinders shall have valve caps in place except when in use and shall not be handled by slings or magnet.

5. Health

With regards to health the company is committed to the continuous improvement of its working conditions and towards educating its employees about the potential health hazards in the operations, they are involved and the means to minimize or eliminate the hazards.

The aim of the health plan is to protect the project personnel from any health hazards that may be associated with the work and/or working environment.

In order to achieve the protection and promotion of the health of persons at work, actions will focus on the following main areas:

1. Provide and ensure effective first aid facilities;
2. Ensure all project personnel are medically fit;
3. Record incidence of sickness of the project and analyses data for possible trends;
4. Provide hygienic / sanitary /working / living condition.

5.1 ***Drinking Water***: Sufficient supply of drinking water shall be provided and maintained easily accessible to workers at project site.

5.2 ***Washing Facilities***: Separate, adequate and suitable facilities for washing shall be provided and maintained for the use of all employees.

5.3 ***Latrines & Urinals***: Sufficient number of latrine and urinal facilities shall be provided and shall be maintained in good working order.

5.4 ***Medical care hospital listing and location***:

A visitor doctor shall be arranged to the site for medical checkup for all employees as scheduled. Office-in-charge shall identify emergency hospitals in the vicinity of the project site as to avail medical treatment to the injured person during emergency and shall prepare a list of hospitals. The complete list of approved medical care hospital listing along with their addresses and telephone numbers, and displayed at the project site office. Apart from this a male nurse to be appointed at site on regular basis by BIN RASHED *Establishment (Road Construction Section).*

5.5 *Occupational Health*

"Occupational Health Hazard" is the one which becomes chronic in nature, over a period of time, due to continuous exposure of personnel to operations / situations such as handling chemicals, working in noisy areas and sun hot, ergonomic reasons, etc.

For effective management of occupational health risks at work, it is essential to identify inventories – the potential physical, chemical, biological, ergonomic and psychological health hazards.

Essential data shall be collected and evaluated for the risks associated with occupational health and there after preventive / corrective measures are decided which shall be incorporated to avoid the risks. *Risk Assessment and Job Hazard Analysis to be carried out by HSE Engineer and get approval from client/consultant.*

Necessary Personal Protective Equipment (PPE) shall be provided to the supervisors and crafts that are associated with jobs involving occupational health risks.

6. Safety

With regards to Safety, target is set for ***Zero accidents***. All serious nature of incidents / accidents, including fatal shall be reported to the Client/Consultant, Project Manager, HSE Manager and HSE Coordinator/Engineer/Officer immediately.

6.1 Project Organization Structure (enclosed)

6.1.1 HSE Organization Structure (*enclosed*)

6.1.2 HSE Responsibilities

a. General roles and responsibilities

Sr.Project Manager/Project Manager

The Sr.Project Manager/Project Manager of the region is ultimately responsible & accountable for Health, Safety and Environmental issues within the region.

1. Ensure that HSE Policy is carried out effectively at project site under his control.
2. Review all significant region reports on Health, Safety & Environment including those concerning accidents and re-portable incidents.
3. Monitor management of the Client/Consultant and Company's HSE Policy and ensure that all recommended corrective action is implemented.

Section Heads

Section Heads shall be responsible and accountable for the safety of the subordinate staff and operators under their control. They are expected to promote a high degree of Health, Safety and Environmental (HSE) awareness among the personnel. Their responsibilities are as follows:

1. They shall have overall responsibility on HSE issues (including sub-contractors) for this project.

2. Ensure that scheduled HSE Committee Meetings are held and minutes of meetings recorded & recommended corrective actions are implemented.
3. Arrange for the scheduled training of all employees in aspects of safety care relevant to their work.
4. Ensure that all incidents involving injury, damage to property as well as near-miss incidents are reported to the concern and are thoroughly investigated to identify the causes, so that there is no recurrence. They are also responsible for implementation of corrective actions which are recommended to avoid recurrence.
5. Report immediately any unsafe or unsatisfactory plant, equipment, system or procedures and ensure appropriate corrective action is taken.
6. Ensure that all subordinate staff is made aware of any potential hazards and know their individual responsibility.
7. They shall be responsible for the preparation of specific safe working procedures for all hazardous works in consultation with HSE Officer.

HSE Manager

1. Support the Sr. Project Manager to ensure that Health and Safety responsibilities are met.
2. Assist with the keeping up to date of the IMS Policy and ensure that it is brought to the attention of all employees.
3. Ensure potential sub-contractors are assessed as competent and that enquires include the relevant contractual requirements & sub-contractors Safety Management Plans (SMP), to ensure they adhere with company policy and legislative requirements.

4. Where possible, resolve any ambiguities in the contract documents, which could lead to unsafe working.
5. Prepare instructions for the organisation and methods for carrying out the company policy, to make sure each sub-contractor is aware of their responsibilities and the means by which they can carry them out.
6. Administer the policy throughout the company's operations maintaining all the company's health and safety records. And carry out internal audit programs.
7. Monitor statistics and collate information on all accidents, incidents and other safety monitoring data. Ensure a report is issued to consultants as required.
8. Arrange for or carry out investigation of incidents and dangerous occurrences as required. Ensure Emergency Procedures are instigated in the event of an Incident / Accident.
9. Ensure upon all notifiable hazards, accidents and incidents' are reported.
10. Provide Health & Safety advice to all staff as required.
11. Liaise with & monitor the duties of the appointed sub-contractor.
12. Ensure effective communication and coordination between Client/Consultant, BIN RASHED & subcontractors, especially with regard to health, safety and environmental issues.
13. Carry out inspections on regular basis. Ensure resulting actions are implemented within the specified time scale.
14. Understand the legislative requirements affecting the company's operations and advice the General Manager, Projects Manager and Project Manager accordingly.
15. Ensure Monthly Performance targets are met, if not exceeded.

16. Arrange and coordinate monthly meetings.
17. Ensure various subcontractors under BIN RASHED's control meet the site HSE guidelines and legislative requirement.

HSE Coordinator

Responsibilities shall be as follows;

1. He shall monitor that Client / Consultant and Company's procedures are followed during construction activities. Inspect work site daily. Report unsafe act/conditions to foreman or senior management.
2. He will report to the Project Manager as well as interfacing with HSE Manager and bring to the notice of any HSE violation by any person at site for immediate corrective action.
3. He will promote HSE awareness among the construction personnel at all levels through audio/visual means, HSE meetings and training.
4. He will carry out HSE Inspections on Excavation, Scaffolding, Equipment, Ladders, Lifting Equipment and Tools on regular basis, recommend corrective actions and monitor implementation of recommended corrective actions. Keep records of MVA, fires, injuries, accidents, incidents.
5. He will prepare HSE statistics, accident/incident/near miss reports and submit same to the Client / Consultant, Project Manager, Manager - HSE.
6. He will advise Project Manager on HSE related issues including hygiene of labor camp and work site. He will ensure site camp HSE aspects.
7. He shall monitor improvements of HSE performance in weekly tool

box meetings and HSE committee meetings at this project. Keep records of all HSE meetings.

8. He shall ensure that the accident investigation and reporting procedure is communicated to all employees.
9. He shall ensure awareness of emergency procedure among all employees. He shall organize required training session at site.
10. He will interact with client/consultant regarding HSE issues to full fill their requirements. He will carry out liaison activities related to HSE issues. Obtained approval of Risk Assessments, Substances Hazardous to Health assessments and Method Statements, including sub-contractors documents.

HSE Engineer

Should assist the Safety officers in ensuring the following task are carried out:

1. Day to day running of the project, resources, materials and plant.
2. Ensuring that all Risk Assessments and Method Statements are being followed. Shall be carried out internal audits.
3. Incorporate safety and health instructions in routine orders and see that they are obeyed.
4. Prevent personnel from taking uncontrolled risks.
5. Ensure as far as is reasonably practicable, that all operatives are trained and competent for work in which they are engaged.
6. Ensure new employees are inducted and made aware of possible hazards and the associated controls. Give them additional information, instruction, training and supervision taking into account inexperience or immaturity, and check during their first few days they are working to acceptably safe standards.

7. Ensure others, including the general public, are protected from the work under our control.
8. Check plant & equipment, including power and hand tools are maintained in good condition and ensure defective items are taken out of use, as required.
9. Ensure instruction is given in the use of substances hazardous to health.
10. Ensure that all operatives are provided with, and use, suitable and appropriate personal protective equipment, as assessed.
11. Maintain a tidy, organised and safe work area.
12. Ensure that plant and equipment is switched off when out of use and the work area is always left in a safe condition.
13. Ensure welfare facilities are maintained in a clean and safe condition with adequate supplies.
14. Commend those who, by action or initiative, eliminate or control arising hazards.
15. Prevent "horseplay" and discipline those who consistently fail to consider their own well-being and that of others around them.

HSE Officer

Responsibilities shall be as follows;

1. Ensure to achieve the following:
    - Ways to prevent injury to personnel, damage to plant and/or equipment and fires.
    - Ways to improve existing work methods.
    - Legal and contractual requirements affecting safety, health and welfare.

- Provision and use of protective clothing and equipment.
- Potential hazards on site before work starts and on the safety organization and fire precautions required.
- Changes in safety requirements.

2. Carry out site safety surveys to see that only safe work methods are in operation, that health and safety requirements are being observed, and welfare and first aid facilities are adequate and properly maintained.
3. Determine the cause of any accident (or dangerous occurrence), and recommend means of preventing recurrence of such an incident.
4. Supervise the recording and analysis of information on injuries, damage and production loss. Assess accident trends and review overall safety performance.
5. Assist with training employees at all levels.
6. Take part in discussions on injury, damage and loss control.
7. Keep up-to-date with recommended codes of practice and safety literature. Circulate information applicable to each level of employees.
8. Foster within the company an understanding that injury prevention and damage control are an integral part of business and operational efficiency.
9. Attend job progress meetings where safety is an item on the agenda. Report on job safety performance.

Site Engineers, General Foremen and Craft Foremen

All Engineers, General Foremen and Craft Foremen shall be responsible

& accountable to ensure the following:

1. Work under their control is executed in a safe manner in order to prevent the risk of injury to personnel and damage to property.
2. Employees are made aware of any health, potential hazards and risk to the personnel that may arise during their day-to-day or specific or out-of-work activities.
3. No unsafe activity or condition shall be allowed, if any unsafe conditions of plant, equipment and any unsafe act of any employees are noticed, the same will be reported immediately to the line management.
4. To ensure that employees are made aware of their individual responsibilities, accountability and targets for their own safety.
5. All incidents involving personal injury, effect on health, damage to property, and effects on the environment, near-misses, incidents and accidents are to be reported immediately to the line management and the HSE Department. An investigation shall be carried out to identify root causes & recommended corrective actions shall be carried out to avoid recurrence.
6. Shall complete all necessary reports as soon as possible in the event of any incident and submit to the Project Manager & Site HSE Department.

Individual Employees

All the company personnel have a duty to themselves, all their co-workers and any other persons who may be affected by their actions to work in the safest manner possible.

In particular, Managers, Engineers, Supervisors and employees at all level must:

1. Abide by all the laid down Company's site HSE requirements as

well as statutory Health-and-Safety-at-work obligations.

2. Avoid any action that might have potential hazard to themselves or others.
3. Bring to the notice of Managers, Engineers, Supervisors or concerned personnel of any potential health or safety hazard and any practices likely to cause an accident or any unsafe practice or act being followed.

b. Resources & Assignment of Accountabilities:

Foremen:

Foremen are accountable to the site Engineers for the following.

1. Labour under their supervision are wearing suitable ***protective clothing (PPE)*** and using ***safe tools*** and equipment regularly checked and inspected.
2. Employees under their supervision has the adequate drinking water and other welfare facilities were arranged such as toilet units and transportation
3. ***Rigging, slinging and fastening*** safety regulations are being met, regular inspections are being conducted on timely basis.
4. ***Motor vehicles and Mechanized Equipment*** handling safety regulations are being met; regular inspections are being conducted on timely basis.
5. ***Warning signs, lights, barricades and flags*** are placed in hazardous places and situations to prevent hazardous accidents.
6. ***Fire prevention awareness*** is disseminated to work force under their supervision.

7. ***Scaffolds, ladders*** are erected and dismantled in accordance with manufacturer's instructions and standard.
8. ***Welders*** under foremen supervision are provided with necessary protective clothing (PPE) and face shield, with instructions for safe handling, placing capping of gas cylinders, and safe operation of electrical welding machines.
9. Adequate precautions and care in case of machine or ***hand excavation in the vicinity of existing, utilities*** specially live cables and lines belonging to other authorities or contractors.
10. Site Foremen shall be identified as responsible to monitor safety compliance; they will wear a yellow (or green) high visibility vest and shall be responsible to take corrective actions in the event of non-conformance.
11. Foremen will share responsibility with Site Engineers to ensure that a documented inspection of all equipment is provided prior to plant being put into service.
12. Foremen will share responsibility with Site Engineers to ensure that employees receive a daily safety talk on expectations and safe work practices for their assigned task. They will be in attendance at site when the talks are given and will participate in the talks on regular basis.

Site Engineers:

Site Engineers are accountable to Project Manager for ensuring satisfactory performance of their foremen and workforce in implementing the safety site objectives & practices under the contract requirements.

He is also accountable of the following.

1. ***Reporting to the Project Manager (PM) or HSE Department any accident occurrence*** together with facts finding investigation, determination of responsibilities, and proposals for corrective action and maintain documented records in relation thereto.
2. ***Reporting to the PM or HSE Department the deficiencies or "near miss" occurrences***, and proposal for corrective action and maintain records of the same.
3. ***Inspect the site condition*** to ensure compliance of the signing, barricading, slinging, trenching, scaffolding, excavation in the vicinity of existing utilities if any, disposal of waste material, earthworks activities with HSE Project Procedures, approved method statements and HSE Manual.
4. ***Inspect constructional plant*** entering on site to ensure compliance with safe operation. Ensure that heavy-duty drivers and machine operators are aware of the site approved ***work accesses***, the ***speed limit*** to be observed, and the ***dust limitation*** practice.
5. Inspect dust control measures including spraying dusty stockpiles with water and covering of dusty loads on vehicles with Tarpaulin.
6. Site Engineers will ensure that employees receive a daily safety talk on expectations and safe work practices for their assigned task. They will be in attendance at site when the talks are given and will participate in the talks on regular basis.
7. Site Engineers will ensure that a documented inspection of all equipment is provided prior to plant being put into service.
8. Site Engineers shall be identified as responsible to monitor safety compliance; they will wear a yellow (or green) high visibility vest and shall be responsible to take corrective actions in the event of non-conformance.

9. Prepare and follow work method statements and risk assessment and use both of method statement and risk assessment to plan the work.
10. Provide daily STARRT for their work force to make sure that work force aware about work method statement and associated risk and the control measures required to do their job safely.

HSE Manager / HSE Coordinator / HSE Engineer and HSE Officers:

HSE Manager is accountable to the General Manager in Head Office and the Project Manager for Bypass Project works.

Ensure that all persons/employees working on site, including persons delivering material are ***properly instructed about HSE*** measures to be observed, and all persons are conversant with the obligations and requirements of the IMS Manual, Company's procedure, Bypass Project works HSE Plan, road safety policy.

1. Make regular inspections of the site in association with site supervisors to ensure proper and approved working methods are being practiced, rectify where required, and be allowed ***to instruct a suspension of work*** should a situation arise that may lead to an incident.
2. Advise site supervisors/engineers concerning ***safe working practices***, and potentially dangerous occurrences.
3. Maintain an up to date record of all information connected with accident prevention, ***injury reports*** and an analysis of accident trends to continually ***improve the severity accident rates***.
4. Advise on and implement the ***HSE Training of all levels of the work force*** as per the project requirements including the HSE Orientation and induction course.

5. Hold weekly meetings/tool box talks with all levels of the work force in accordance with Client/MM regulations and HSE Plan requirements
6. ***Inspect the living conditions*** of the work force regularly to ensure a high standard of hygiene. Initiate improvements and corrective actions.
7. ***Ensure prompt removal of garbage/waste material*** from the site and living quarters to an environmentally safe location approved statutory Authorities.
8. Ensure, in conjunction with the Plant Supervisor that ***vehicles are kept in safe working condition*** and used in a safe manner, report any deficiencies to the Project Manager (PM) and remove any non-complying equipment from the site.
9. Regularly check that ***safety clothing (PPE) and apparatus*** is properly maintained, used in the proper fashion and report any defects immediately to the PM.
10. Conduct routine check, on ***fire fighting equipment*** and safety equipment to ascertain proper functionality.
11. Inspect constructional ***plant entering on site*** and remove such plant that does not meet statutory requirements or standards.
12. To inspect work permits, vehicle permits and permits to work where required and ***stop work*** in the event of documents being found unsatisfactory.
13. To inspect site ablution units, accommodation areas and personal effects to ensure that hygiene, sanitation and daily cleaning are implemented satisfactorily. Initiate improvements and corrective actions in coordination with the PM.
14. Awareness and implementation of ***Emergency Procedures***.

15. Ensure adequate and relevant ***safety signage*** is available in all applicable languages (English and Arabic).
16. Prepare a ***Monthly HSE report*** to PM and BIN RASHED Main office
17. Report to Client (MM) in accordance with the provisions of the Contract.
18. Identify, elaborate and propose to the Project Manager Revisions and improvements on safety issues.
19. Inspections of Worksites

    The project HSE Manager will ensure that as equipment is brought on line, audits will be carried out to compare actual levels of noise, vibration, heat flux, temperature, dust, etc. with those predicted by the design phase studies. Corrective action will be taken where deficiencies are found.

    In addition a key element of managing hazards and risks will be continual and ongoing pro-active procedures requiring HSE Observations to be reported and actions taken, plus a wide range of site inspections tours, reviews and audits.
20. Environmental Monitoring

    The HSE Manager will ensure that the monitoring programs and the upgrades of the HSE Impact Assessment will continue during the construction phase of the project. (Environmental Monitoring shall be according to the BIN RASHED IMS procedure.
21. Emergency Plan

    The HSE Manager will ensure that relevant Management will be briefed in and hold copies of the BIN RASHED emergency response plan. For more details, please see IMS procedure.
22. Health and hygienic standards

Health standards and the standards for medical facilities to be adopted by the Project shall meet or exceed Abu Dhabi Municipality standards as well as MM requirements and will apply to all personnel and work sites operating under the direct control of the Project during the construction and commissioning phases.

23. HSE Manager or HSE Officers shall participate in all incidents investigations.

All Labours

1. Comply with company and project policies
2. Reports hazards
3. Reports injuries
4. Reports accidents / near misses
5. Be physically fit and mentally alert.
6. Operate vehicles / equipment in a safe and prescribed manner.
7. Operate or repair equipment only when authorized
8. Knowledgeable of emergency procedures
9. Follow personal safety and perform duties in a safe manner.
10. Follow all safety instructions and considerations in additional with safe behavior and attitude.
11. Follow the good behavior and attitude.

Project Manager:

Project Manager is accountable to BIN RASHED General Manager (Road Construction Section) and client for the implementation of BIN RASHED HSE Policy, Bypass Project works HSE Plan in accordance with Client/MM Regulations. He shall supervise and monitor the HSE Project Plan implementation, direct the project staff for improving deficiencies

and expediting follow-up actions, initiate and implement modifications to this plan as required and approved by Client/MM Project Manager.

The P.M. shall hold monthly safety meeting with the Project key personnel staff.

Dy. Project Manager

The Dy. Project Manager has day to day management responsibility for ensuring that all aspects of the project activities are carried out according to the contract. The Dy. Project Manager reports to the Project Manager.

Hence, the Dy. Project Manager has management responsibility for:

1. Including health, safety and environmental matters as an agenda on staff meetings and monthly reports to Client/Consultant, as regards construction activities.
2. Assisting the development of HSE awareness during construction.
3. Providing management attendance at site HSE meetings.
4. Providing management assurance that HSE procedures and instructions are followed during construction.
5. Providing a management check that all findings of HSE audits and other recommendations that arise from HSE matters during construction are properly attended to.
6. Ensuring that health, hygiene and sanitation arrangements at the temporary facilities and work sites meet contract requirements.

6.2 Communication:

It is the policy of company that regular project site HSE meetings be conducted by the Project Manager, Office Manager, HSE Manager and/or the site HSE Officer to:

1. Orient all company and sub-contractors trades' people to project requirements and objectives.

2. Identify areas on the site that present special problems or concerns, and determine the best corrective action for each situation.

The company Project Site HSE Meeting program is arranged in three levels:

1. The Initial Project HSE Orientation Meeting.
2. Project Site HSE Committee Meeting.
3. Periodically "Tool-Box" HSE Meetings.

6.2.1 Initial project HSE orientation meeting

The Project HSE Orientation Meeting is conducted by the HSE Coordinator presiding by Project Manager at their respective site at onset of the project with all company employees and sub-contractors trade foremen. The meeting must be given the complete attention by all project participants that it deserves. All sub-contractors shall be required to participate. Attendance shall be documented.

Minimum items to be reviewed at the meeting include:

1. All HSE requirements of the company to be followed and implemented by all company and sub-contractors employees during the course of their employment at project site.
2. Company HSE rules and procedures.
3. The project site utilization program, specifically with regard to arrangements for stored materials, materials handling, traffic, access, security, communication, etc.
4. Fire protection requirements and procedures.
5. Display of all emergency phone numbers.
6. Specific project site precautions with respect to protection of workers and protection of the public; temporary protection, fall protection, hard hat, safety shoes, gloves, eye protection, etc.
7. Project site security issues and arrangements.
8. Notification to all company and sub -contractor's participants that willful

and/or repeated violation may be grounds for suspension or termination from the project site.

9. Notification of the expectation of regular participation in periodic HSE meetings.

6.2.2 Site HSE committee meetings

The Project HSE Committee is to be formed constituted of both from site representatives and sub-contractors representatives who are charged with the responsibility of general oversight of the Project HSE Program. The Committee convenes weekly, and performs the important functions.

The Project HSE Committee should have the following members:

1.	Sr.Project Manager/Project Manager	Head
2.	Dy. Project Manager	Member
3.	Project Section Heads	Member
4.	HSE Manager	Executive
5.	Project Administrator	Member
6.	Workers Representative	Member
7.	Sub contractor Representative	Member

HSE committee convenes once a month and at least within one week of a reported accident or disease. This emergency meeting to be attended by a majority of the members with at least one representative from the workers. The agenda for this meeting includes:

- Ensuring that all HSE regulations and precautions previously approved by the committee are implemented throughout the working site.

- Discussion of accidents and injuries (if any) that took place in the previous month.
- Discussion of HSE issues results.
- Reviewing attendees' recommendations and other suggestions.

Management Review

HSE (Health, Safety and Environment) on the Project will be managed in accordance with the contract requirement and HSE standard.

The HSE Management System will cover areas such as:

Strategy

- General Policies and Strategic Objectives.
- Communications.
- Safety Culture and HSE Targets.

Structure

- Organizational Responsibilities.
- Liaison.
- Performance Standards.
- Evaluation of Sub-Contractors.

Systems

- Health and Safety Plans.
- Accident / Incident Investigation and Reporting.
- HSE Inspection.
- Recruitment Training and Development.

- Risk Analysis.

Operations

- Operating Procedures.
- Emergency Procedures.
- PPE
- Permit to Work.
- Access Control.

The Contract HSE Plan will be reviewed on a regular basis in order to ensure that the Plan continues to give reasonable guidance during the life of the contract. Attendees for the management review shall include, Head office management, HSE and Quality Management in additional with Project Management team.

The frequency for the management review shall be every three months or according to the project requirement.

Checking and Corrective Actions (Performance Measurement and Monitoring)

Monitoring of HSE performance will be controlled by the commitment of the project management team and company top management by implementation of HSE procedures and take any action required against any un safe act or safety issue to achieve HSE compliance. Also implementation of HSE-MS items (plan-do-check-feedback) will be the key to improve the HSE performance

We will carry out risk assessment for all our activities and all control measures will be implemented in order to prevent or reduce the risk to ALARP (As Low As Risk Practicable) to keep the project safe.

Also the communications is the key to monitor HSE issues on site by conducting weekly meetings, tool box talks, reporting of HSE issues and both HSE inspections and HSE audit, any outstanding items will be discussed on the weekly HSE meeting to take the necessary action required.

We will ensure that priority is given to matters of HSE and adequate resources and funds are available to support actions and initiatives that have been developed. Targets for improving HSE standards will be set, in accordance with the company's 'Zero Accident Philosophy'.

BIN RASHED Work within "Zero Accident" Policy, because the Good HSE Performance will Contribute and Determine the Success of the Business.

Also all personnel are responsible for understanding the HSE impacts, hazards and risks associated with their jobs and for following the proper procedures to minimize or eliminate those impacts, hazards and risks. All employees and subcontractors are required to perform their duties having in mind that individual responsibility for HSE cannot be delegated.

The implementation and monitoring will be maintained by proactive and reactive, proactive means such as (HSE awareness and training, effective supervision, management commitment, total safety task instructions (TSTI), tool box talk, site HSE meeting, HSE inspection and HSE audit, reporting any un safe act or near miss).

The reactive means such as (Incident reporting, accident and incident investigation, actions against any safety issue).

BIN RASHED shall follow the measurement and monitoring according to the project requirement

6.2.3 Weekly Tool Box Meetings

A weekly ' Tool box ' HSE meeting on the first day of the week shall be held by the concerned discipline supervisor / foreman with the work-force under their control.

Propose topics under tool box meeting are:

1. Use of Personal Protective Equipment (PPE);
2. Safety in use of Hand Tools;
3. Safety in use of Portable Electrical Tools;
4. Safety while welding /gas cutting operation, Excavation;
5. Safety in Scaffold Erecting & Dismantling;
6. Safety while Working at Height;
7. Housekeeping & Fire Prevention;
8. Safety while Material Handling;
9. Safety while Grinding Operation; and
10. Emergency Response procedure.
11. Environmental Protection procedure.

In addition to this meeting an extra ' Tool box ' talk shall be given by the HSE Department, prior to start of every new activity.

6.3 HSE Training

6.3.1 HSE Training Program

All employees engaged for this project shall be given 'HSE Induction' under this HSE Plan. We have identified various topics mentioned below, of which training is required for various categories. These training courses will be organized during the project.

6.3.2 HSE Training Responsibilities

Project Manager & Section heads are responsible to ensure all employees receive adequate training. The HSE Manager / Coordinator / Officer shall co-ordinate with the section heads and administer the HSE training. Also he is responsible for monitoring of the training as well as the compilation of the HSE training conducted. The structural training for management staff (middle and senior management) and tool box meeting for lower management staff will be conducted as per below schedule.

6.3.3 HSE Training Schedule

Sl. No.	Safety Training Topic	To be Conducted By	Who should have training	Target date
1	Occupational Health & Safety Management System (structural training)	From reputed training institute	All Site Engineers	2nd week of July
2	OSHAS 10 hours course (structural training)	From reputed training institute	All Foremen	Yearly Once
3	Restricted Area Safety (structural training)	ADNOC	Entrant/Attendant/Entry Supervisor	As and when required
4	PPE (tool box meeting)	HSE Officer	All employees	Once in a month
5	Environmental Protection (tool box meeting)	HSE Engineer	All employees	Once in a month
6	Fire Fighting (tool box meeting)	HSE Officer	All employees	Quarterly
7	Mechanical & Manual Handling (tool box meeting)	HSE Officer	All employees	Quarterly
8	First Aid Training (structural training)	Recognized Organization	Nominated first aiders	Yearly Once

6.3.4 HSE Induction Program

Guidelines have been prepared to assist in carrying out Induction Training to all employees at project site before commencement of work and issue of ID card /

PVC sticker to be pasted on front side of employee's helmet (HSE INDUCTED) who has undergone HSE Induction Training.

A. The topics covered in the induction course includes but not limited to the following:-

1 BIN RASHED IMS Policy
2 Basic HSE Rules
3 Emergency Procedures
4 Personnel Protective Equipment(PPE)
5 Construction Safety Practices
6 Fire Prevention & Protection
7 Vehicle & Equipment Safety
8 Code of Discipline
9 Accident/Near Miss Reporting
10 Scaffolding
11 Ladders
12 Permit to Work
13 Excavation
14 Injury Reporting
15 Site Electricity
16 Material Handling & Storage
17 Traffic on Site
18 Housekeeping
19 First-Aid
20 Camps/Housing Safety Regulations
21 Safety Behaviors and Attitudes
22 Safe Driving
23 Rigging & Lifting Operations
24 Risk Assessment
25 Safe Driving
26 Safe behavior & attitude.
27 Environmental requirements

B. Tool Box Meeting: A weekly toolbox talk will be conducted by the responsible supervisors (Site Engineer and Foreman) on every on every shift of the work at the first hour for a period of 15 minutes approximately. The selection of the subject and the contents can be suggested by the HSE representatives based on the task requirement, accident findings, violations and infractions noted recent developments, health hygiene, environment protection etc. Attendance in the meetings is mandatory and is recorded.

C. Task Safety Instruction: All supervision staff (Site Engineers and Foremen) is to conduct Task Safety Instruction for his crew before the start of each day's work and/or before the starting of any new task. The main contents of which are to identify as discuss the task-related hazards, personal protective equipment, safety precautions required etc.

D. Fire Extinguisher Training: All the employees involved in some kind of other type of hot work have to undergo this training. The topic discussed in this training are :

a) Understanding Fire Hazards
b) Chemistry of Fire & Types of Fire
c) Principles & Techniques of Extinguishing Fire
d) Available Extinguishing Medium
e) Classification of Fire Extinguisher
f) Rescue & First Aid Treatment

E. Emergency Response Training : All the workers working in the Project as a mandatory requirement has to undergo this course which covers the topics relating to the following :-

بـــن راشـــد
BIN RASHID
للنقليات والمقاولات العامة
Transporting & General Contracting Est.

BIN RASHED TRANSPORTING & GENERAL CONTRACTING Est.

HEALTH, SAFETY & ENVIRONMENTAL PLAN

JAS-ANZ
IAF
Quality Seal

a) Understanding Emergency & Types
b) Individual Responsibilities
c) Reporting Procedures
d) Types of Alarms
e) Action in case of Emergency Alarms
f) Response in case Emergencies
g) Response in case of accident

F. Other HSE Training: HSE Trainings are also conducted on various topics relating to Construction activities, Health, Hygiene, Safe Driving, Environmental protection as deeded necessary. The topics for HSE training is also selected based on the near miss record, records of safety infractions, audits etc.

G. Supervisory HSE Training: Company supervisors (Site Engineers and Foremen) will attend to the HSE training designated to supervisors (site engineers and foremen); this is in additional with HSE Orientation and induction.

Record keeping of the attendance in the HSE Training Courses shall record in the format and maintained with the HSE Manager.

6.4 HSE Audits & Inspection

During the construction phase, the project HSE Coordinator/Engineer along with the discipline in charge shall carryout inspection of work site, as scheduled to ascertain whether the implementation of various procedures have been carried

out as per plan or not. The inspection shall be carried out as targeted in this plan and deficiencies observed during the inspection shall be rectified by the concerned discipline engineer / foreman. Every quarter an audit shall be carried out during the project by the project HSE Coordinator/Engineer after the actual commencement of work to ascertain implementation of various procedures under the plan. The detailed checklist shall be prepared before the audit. This will include audits of sub-contractors activities. Major findings of the audit report with learning points shall be discussed during the HSE meetings. Project Manager to ensure that recommended corrective actions are being closed. It is the responsibility of all site engineers and foremen to regularly observe project sites, work areas, tools, and equipment daily, and take all appropriate actions necessary to eliminate or control any hazards that are identified. The frequency of inspection will be determined by the Project Manager in consultation with HSE Coordinator/Engineer at site.

The Corporate HSE Manager shall make scheduled and surprise inspections. The results of his inspection will be discussed with the project management and executive staff immediately following the inspection. Site engineers and foremen will take immediate action to eliminate, correct, or control the hazard, or ensure that project management has taken such action.

HSE inspection report form

The report of all project site inspections shall be completed using the HSE Inspection Report Form.

6.4.1 HSE inspection schedule

Sl. No.	Place of Inspection	Action by	Target	Ref. Document
1	Scaffolding work	Scaffold Engineer	Daily	Checklist
2	Lifting crane	Site Eng./Cr.Op.	Monthly	Checklist
3	Lifting gears & tackles	Site Eng./Foreman	Weekly	Checklist

4	Hand held Electrical tools	Electrical Engineer	Monthly	Checklist
5	Excavation, Welding, Gas cutting & Grinding	Civil Engineer	Weekly	Checklist
6	Heavy lifting operation, Vehicle safety	Site Engineer	Prior to lift	Checklist
7	Personal Protective Equipment (PPE)	Store keeper/HSE	Weekly	Checklist

6.4.2 HSE Audit Schedule (Once in 3 months)

Sl. No.	Type of Audit	Place of audit	Action By
1	Erection activity	Scaffolding & working platform	Project Engineer & HSE Manager.
2	Mechanical Activities	Fabrication & Erection	Project Eng. & HSE Manager.
3	Mechanical Activities	Lifting equipment/Gears/Tackles	Site Engineer& HSE Manager.
4	Material Handling	Loading & Unloading operations	Store Keeper & HSE Manager.
5	Electrical Activities	General electrical status	Elect Eng. & HSE Officer.
6	Storage Facilities	Storage of chemicals & other materials	Office Engineer & HSE Officer.
7	Maintenance	Equipment/Machinery	Site Eng. & HSE Officer.
8	Power tools	Hand held electrical tools and machines	Site Eng. & HSE Officer.
9	Sub –Contractor	Sub-contractors activities	Office Engineer & HSE Officer.
10	General Safety	Overall implementation of HSE at site.	Office Engineer & HSE Officer.

6.4.3 Accident/Incident Analysis:

Any Accident/Incident report prepared by Foremen/Site Engineer or any other person will be analyzed/investigated by the BIN RASHED HSE Manager and construction specialist prior to issuing to the Company.

The purpose of this procedure is to provide information and the necessary guideline for reporting & investigation of any Accident or Incident involving employees or machinery & vehicle to prevent the recurrence.

This procedure establishes the necessary guideline for reporting & investigations of any Accident or Incident involving employees or machinery vehicles

The effort of all company employees are directed towards the prevention of accident, however in the event of an accident /incident it is necessary that a complete investigation be made.

All incidents / accidents that result in or have the potential to cause serious injuries or property damage shall be suitably investigated by BIN RASHED responsible authorities. The corrective & preventive actions as a part of the analysis will be disseminated to the Project Management Team for immediate implementation.

All the incident / accident reports will be documented for audits / inspections and duly analyzed to establish trend, calculate incident rate & safety performance of the Company.

Incident Reporting

It was agreed with BIN RASHED project manager and company top management in establishing the site accident reporting system. The Incident Reporting Procedure shall be used to identify root causes and will form the basis for the management of the system. It will be applied to all project activities related to BIN RASHED scope of works.

The following items will be followed for incident reporting:

Print the necessary forms distribute them; train the supervision staff in completing the form.

Inform client and BIN RASHED Project Management as soon as possible after any fatalities, reportable accidents or incidents occur.

Ensure that all injury, damage, near misses and accidents are investigated and that site supervision is involved in such investigations.

Examine accident reports, perform statistical analyses and publicize the results as necessary.

An immediate oral report shall be made to the BIN RASHED site Management & client representative in case of the following

a. All fatal injuries
b. All injuries requiring medical attention.
c. All damage in any amount to clients property.
d. All damage in any amount to company's equipment or property.
e. Accidents & near misses.

Accident & Incident Investigation

The point of an accident investigation is to prevent recurrence of similar accidents: to determine facts rather than to find faults. The main reasons for conducting an accident investigation are:

1. To find the causes (including root causes) so that similar accident may be prevented.
2. To determine the point at which "unplanned" events took over from the “Planned” sequence of events.
3. To recommend what corrective action should be taken.

The investigation should ensure the following for proper investigation:

a. Check the condition of accident site/ equipment involved.
b. Check the activities at the scene of accident / incident.
c. Check environment/equipment and preserve physical evidences

d. Interview people: injured, witnessed, supervisors, those directly involved.
e. Verify statement & resolve anomalies, and identify leads.
f. Peruse leads.
g. Take picture of the area if allowed / permitted.
h. Check the contributory factors.
i. Establish the sequences of critical events, underlying causes and its consequences.
j. Record & disseminate the investigation of the investigation to prevent recurrence.

The HSE Manager will submit a weekly HSE report to the Management giving details of all lost work day cases (LWDC) , lost time days, occupational fatalities and the subsequent lost work day case rate statistics. The Monthly Report will include the occupational disease cases and the cost estimate of material and equipment losses due to accidents. This report will include the summary of the HSE deficiencies revealed by HSE inspection and audits tours, give a summary to the root causes of the accidents during the month and corrective actions to be considered for achievements during the next month.

All injuries frequency rate = $\frac{\text{No of all injuries x 1,000,000}}{\text{Total Man hours worked}}$

Lost time injuries frequency rate = $\frac{\text{No. of LWDC x 1,000,000}}{\text{Total Man hours worked}}$

Severity rate = $\frac{\text{Total Days Lost x 1,000,000}}{\text{Total Man hours worked}}$

In addition to the above, the site first aider shall maintain a record of all injuries that require treatment including first aid or illness.

All lost work days caused by injuries shall be investigated by HSE and line management and will be submitted to the Client. Each report must include the measures taken to prevent recurrence of similar injuries at all the Project work sites. Potentially serious incidents shall also be reported in this same manner.

Reporting of accidents/incidents/ near miss will be encouraged among the workforce through tool box talks and safety notice board etc.

6.4.4 Risk Assessment

BIN RASHED already did the risk assessment required for the project and submitted to the client; the control measures will be taken in consideration for the project activities to minimize the risk to ALARP (As Low As Risk Practicable).

For more details, please see BIN RASHED Risk Assessment.

a) Identification, assessment and control of hazards and effects management

Hazards are classified as High (H), Medium (M) and Low (L) to describe potential severity in the event of an accident.

- "**High**" (H) - A condition or practice likely to cause permanent disability, loss of life or body part and/or extensive loss of structure, equipment or material.

- "**Medium**" (M) - A condition or practice likely to cause serious injury or illness (resulting in temporary disability) or property damage that is disruptive, but less severe than "High".
- "**Low**" (L) - A condition or practice likely to cause minor (non-disability) injury or illness or non-disruptive property damage.

b) Methods and procedures for hazards and effects management

Risk assessment must be done prior to any activity and corrective and protective action taken.

Risk assessment must be done by the concerned Engineer/Supervisor and reviewed by the HSE Manager. The records must be submit to all concerned (Engineers and Foremen) and should be maintained by the HSE Manager for Client's Audit and future requirements.

Hazard identification methods, risk assessment and risk control based and planned on the following:

- Work method of statement.
- Material Safety Data Sheet (MSDS).
- Incident investigations and near miss reports.
- Employee consultation.
- Scope of work.
- Tool Box Talks (TBT).
- Safety Task Analysis Risk Reduction Talk (STARRT).
- Effective supervision for the project activities.
- HSE awareness and training.

- Routine and non routine activities.
- Activities of all personnel having access to the workplace (including subcontractors and visitors).
- Facilities at the workplace.

c) Assessment of exposure of the workforce to hazards and aspects.

Supervision staff shall brief their crews prior to the commencement of any new task on the hazard and control measures.

Please see the specific risk assessment for the project activities and the control measures which required eliminating and controlling the hazards

7. ENVIRONMENT

With regards to environment the objective is that the Company shall put in use its best to prevent and take all reasonable precautions to avoid pollution or contamination of the working location or water, arising out of its performance of the work in Bypass Project works.

It is BIN RASHED's policy to manage waste in such a manner as to prevent danger to the health and safety of its employees, sub-contractor's employees, others and to minimize the adverse impact on the environment. For these reasons, BIN RASHED has committed for controlling and monitoring safe disposal of the various type of waste usually accumulated at the construction locations and camps.

7.1 Dust & Noise:

Dust Control: The BIN RASHED shall support environment and dust control and special emphasis shall be ascertained for good housekeeping during the construction of the project. HOUSE KEEPING is perhaps the most important factor influencing the safety of road construction job. Good housekeeping should be planned at the beginning of the job and carried through to the final clean – up.

Suitable waste containers will be provided at various locations and emptied daily. Waste collection points will be designated and maintained (in proper and suitable containers). All refuse and rubbish will be disposed outside the job site (At the Abu Dhabi Municipality incinerator area) to be decided by the Company according to the Abu Dhabi Municipality incinerator area.

BIN RASHED will support the environmental requirements with good housekeeping system and waste management control by segregation of all waste materials. To protect the environment we will: -

Prevent the uncontrolled release of hazardous materials to the environment.

Pick-up all refuses from site and put into proper containers.

Report all spills and follow directions for cleanup. According to the Construction Environmental Management Procedure in IMS Manual.

Dust on Project site shall be controlled by: -

1. Watering the access roads and outside site offices etc.
2. Monitoring speed limit on site by vehicles and operating mobile equipment.

Noise Control: All practicable measures will be taken to minimize noise arising due to operations by carrying out preventive maintenance of machinery, equipment and vehicles etc. Engineering noise control devices to be used upon heavy machineries which need work continuously. Noise proof generators will be used at work site area by BIN RASHED.

7.2 Waste Management

Specific disposal requirement will be identified / provided to assist site management. Sub-contractors and others will be clearly notified the goals to assist the client in maintaining the site environment safe side.

The waste management plan will observe three categories of waste:

1. Bio-degradable waste (Domestic and office wastes) – generally non-hazardous can be disposed of in a simple disposable facility within skippers which are provided by the BIN RASHED Est.,
2. Non-hazardous waste can also be disposed of in a simple disposable facility.
3. Hazardous wastes, special or chemical, require disposal in appropriate label container provided by the BIN RASHED Est., accordance with the environmental protection act to prevent any hazard to human health or to the environment. It is BIN RASHED Est., responsibility to follow the way of proper treatment and disposal of hazardous waste by engaging authorized

or approved agency.

7.3 Pollution & Site Hygiene

1. Mechanical plant, equipment, etc. which emits smoke, fumes or other obnoxious gases should not be allowed on the site.
2. Provide and maintain temporary channels, drains and the like for keeping the site clear of water.
3. All reasonable precautions are to be taken to ensure the efficient protection of all streams and waterways against pollution arising out of or by reason of the execution of the works.
4. No unwanted building debris, chemicals, any noxious or polluting matter should be dumped on any vacant land or plot of land, roadside or drains thereby causing blockage leading to mosquito breeding or causing contamination of the site soil or the drainage system.
5. No food is to be consumed or left in work areas.
6. Place of work to be left in a tidy and safe condition at the end of each work period.
7. Smoking is not to be allowed in work areas.
8. Where a work presents a potential hazard, appropriate notices must be supplied / displayed, and the area made secure as far as is reasonably practicable.
9. No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
10. Asbestos shall not be used.
11. All workers should be trained in safe manual handling as incorrect manual handling results to back injuries. Also special objects require special handling.
12. Where the work process is such that it significantly increases the ambient

noise level in those area preventive measures such as enclosure, noise proof engineering devices and PPE (ear muffs/plugs) shall be used to reduce the noise level below the threshold limit.

13. The project HSE Officer shall be informed prior to the commencement of work, procurement of materials connected to the contract work of a hazardous nature.
14. All efforts are to be made to see that contamination of any product is avoided.
15. Certain areas designated as hazardous (e.g. noisy areas) warning signs must be obeyed.
16. Necessary sanitary convenience for the staff and workmen will be provided and maintained in a clean orderly condition and clean and deodorize the ground after removal.

8. Emergency Response Procedure

Potential emergencies could include the following:

a) Personal injury.
b) Fire.
c) Vehicle or equipment accident.

1. A construction emergency action plan for evacuation of the work area in the event of project emergency will be provided to all employees and sub-contractors staff.
2. Each employee will receive training to ensure that he knows how to perform safely and effectively in an emergency situation such as fire evacuation, vehicle or equipment accident and assistance to an injured or disabled fellow employee.

3. During their instruction in Emergency Response Procedures they will be informed of the locations of the nearest assembly point.
4. Provision will be made for the adoption of Health, Environmental and Safety targets. Incentives will be provided to achieve minimum accident / incident objectives. Statistical data will be submitted to the Company on a weekly basis, including man-hours, accidents, incidents, frequency rates.

8.1 Reporting system incase of emergency:

On the occurrence of personal injury the following should be immediately effect:

1) Site Engineer, HSE Manager & Project first aider will be immediately informed.
2) First aid will be provided to the person by the project male nurse and/or a staff who received first aid training.
3) If the condition of the injured suggests further treatment, the injured will be transferred by the ambulance to the nearest emergency unit or hospital with an authorized person to admit the injured for treatment.
4) The HSE Manager / Site Engineer / Foremen will supervise the above procedure.
5) The HSE Manager will be responsible for registering the occurrence logging the incident in the safety record log, and take immediate steps to reduce or prevent the possibility of a further occurrence of the same nature by implementing the lessons learned.

8.2 Response procedure in Case of Fire:

The following procedures will be following if a fire is detected in site office premises or site:

1) Fire alarm will be set off and premises checked and cleared of personnel, to collections points allocated to employees.
2) Fire extinguishers which are installed at conspicuous places in different buildings and open places within the premises will be used to extinguish the

fire initially. Should the fire be substantial the CIVIL DEFENSE fire authority would be called for assistance.

3) Muster points will be allocated to evacuate and check numbers of personnel. Key maps showing these collection points will be affixed at caravans entrances, Mess walls, and recreation room board.

In the meantime the necessary precautions such as removing materials which can catch fire from close proximity of fire and switching off the electric circuits in that area will be taken to limit the fire.

The project HSE Manager / Site Engineer / Foremen will supervise above operations.

8.3 Response procedure in case of Equipment Damage / Accident

If an accident occurs on site involving equipment, the equipment will be stopped and the HSE Manager will be informed. HSE Manager / Site Engineer / foremen will assess the damage and take necessary measures to inform police and insurance as required.

All accidents and damage will be reported in accordance with Client (MM) procedures and regulations on approved report forms. ALL Incidents will report to the client immediately. Any vehicle, equipment or car accident will be report to police as per the UAE Regulations. During early works, CONTRACTOR (BIN RASHED) shall organize desktop reviews of the following emergency scenarios:

a) Medical Emergency;
b) Vehicle Accident;
c) Fire and;
d) Major personnel-carrier/bus accident.

The desktop reviews shall consider the following, for each emergency scenario:

a) Evacuation of area(s) - ensure all personnel advised of assembly areas;
b) Complete Assembly of Personnel;
c) Reporting to Client through CONTRACTOR (are contacts and phone numbers available and correct?);
d) Contact Emergency Services (are contacts and phone numbers available and correct?);
e) Identify exclusion zones (is there anywhere that should not be an Assembly area?);
f) Consider practicalities of isolating equipment where necessary (high winds, extreme weather, etc); and
g) Consider need for additional resources (material, personnel, services, etc).

Changes to this plan may be made based on the findings of the desktop drills.

The following medical facilities shall be provided by the BIN RASHED.

- At a minimum, BIN RASHED shall provide a male nurse or first aider to provide medical care and initiate medical evacuations, if required;
- CONTRACTOR (BIN RASHED) medical facilities shall be located in a central area in site offices , set-up in weather-proof containers or shelters, and provided with the following:
  a. Adequate lighting and air conditioning;
  b. Desk/file area, examination table and chair;
  c. Potable water and disposable cups;
  d. Medical waste container, properly labeled;
  e. Mobile Phone
  f. Medical equipment (e.g. medical treatment/first aid, PPE, fire-fighting equipment, horns, Whistles, signage), as defined.

BIN RASHED shall provide the emergency equipment as required such as medical

equipment, emergency vehicle, fire proof blankets, fire extinguishers etc.

All emergency equipment shall be maintained periodically according to the standard.

Emergency drills shall carry out by BIN RASHED periodically; BIN RASHED will notify the client in advance.

Lessons learned from emergency drills will be included in the emergency plan.

BIN RASHED will provide fire proof cabinets for vital records.

BIN RASHED will include any lesson learned from incident\exercise in this procedure.

Assembly Points

Assembly points will be located for project personnel which will be utilized on the basis of the individual going to the nearest point during any Emergency.

Each assembly point will be highlighted by a sign stating "ASSEMBLY POINT "BIN RASHED will formulate an **"EMERGENCY RESPONSE TEAM"** comprising of members of the project. They will act as co-coordinators at assembly points during any emergency situation and trained to assist in first aid fire fighting and basic rescue techniques.

8.4 Roles And Responsibilities of GTGC Project Personnel in case of Emergency:

Immediately on being informed of an emergency, dedicated personnel from the Project Emergency Response Team will take up specified positions and as a team work together in the management of the incident.

Responsibilities are as per the followings:

Sr.Project Manager/Project Manager

The Project Manager will, immediately on being informed, his role will be to:

- Assist the Emergency Response Team when any resources are required.
- Organize specific equipment to assist in specific operations e.g. Heavy Lifting.
- Gather information from the assembly points to determine numbers of personnel are accounted for.
- Gather information as to the casualties and extent of equipment damage from the HSE Manager.
- Ensure that both client and Sub-Contractors management are informed of the situation.

HSE Manager

The HSE Manager will upon hearing the alarm or being notified of an incident, proceed directly to the scene of the incident, only where safe to do so. His role will be to:

- Lead the Emergency Response Team until such time as the local authorities arrive to take over.
- Keep the Project Manager informed of all developments in order that he in turn can full fill his role.
- Liaise with local authorities i.e. Civil Defense

Emergency Response Team Members

Emergency Response team members will, immediately on being informed, report to the scene of the incident. Their role will be to:

9.0 Safe Operating Procedures

9.1 House Keeping

Good housekeeping is an important element of accident prevention. It should be planned at the beginning of the job and carefully supervised until the final clean-up while handing over the site to the client. Our procedure depends on each person is responsible to ensure the work site is kept clean of waste and supplied materials all times and after completion of each task and at the end of the day.

The following items will be including in our procedures.

a) All spills and tripping hazards will be cleaned up as soon as they are seen .
b) All rubbish will be paced in the designated containers .
c) Doors exits and emergency equipment shall not be blocked .
d) Tools and equipment will be returned to their proper storage place.
e) Any UN-safe condition will be corrected immediately through the project supervision staff (site engineers and foremen) .
f) Equipment and supply materials will be maintained in an orderly fashion , and covered as required .
g) Toilet facilities

Enough toilet facilities services will be exist in offices and work areas facilities these will be cleaned and maintained on daily basis and as per the project requirements.

A dedicated area will be set aside and facilities made therein for the consumption of food and beverages for the work force according to the project requirements.

It is recommended to have a regular clean up in all our job sites to ensure cleanliness, tidiness, and safe environment. However, housekeeping should be the concern of all supervisors and engineers in their area of working and not left for the cleanup crew. In any case, housekeeping should be a part of daily routine with cleans up being a continuous procedure in order to maintain the site and surroundings in a neat and orderly manner, free of accumulating debris, haphazard stacking of materials, unhygienic and unsafe environment.

Simple rules for house keeping:

1. Storage areas: All materials should be maintained in neat stockpiles with well laid aisles and walkways for ease of access. There shall not be any projections in the walkways.
2. Work areas: Loose materials, scrap, tools, etc. shall not be allowed to be lying in the working areas especially in the vicinity of ladders, ramps stairs, etc. This is more important at heights where the loose materials are liable to fall down. Spills of oil and grease should be removed immediately. An effective means of preventing loose pieces lying dangerously at heights is the provision of suitable receptacles for waste and scrap pieces. Equipment and other materials should not be kept/ left in hazardous condition. Special attention is to be paid to potential fire hazards, which is to be suitably handled / discarded. Nothing shall be done or omitted to be done to render unsafe or obstruct access for emergency apparatus, such as firefighting equipment.
3. Protruding nails: Protruding nails in wooden pieces is a chronic problem in civil sites; it is worthwhile to have one or two helpers continuously for retrieving protruding nails.
4. Scrap yard: Wooden scrap should be well away from any gas cutting or welding operations and “No smoking” shall be strictly ensured there. All

other combustible scrap like cotton waste, wooden boxes, and empty paint tins shall be disposed off safely then and there.

5. Lighting: Adequate lighting should be provided in and around all work areas, passage ways, stairs, ladders & other areas used by personnel.
6. Openings in floor: All openings in floors where our workmen are liable to work or even pass through shall be either closed or barricaded whose minimum height should be **1mtr**. If they are closed, a visible warning sign shall be kept to indicate the opening below the cover.
7. Approach road: The approach road from and to the work site shall never be blocked by parking vehicles or stacking materials, etc. thus blocking the movement in case of emergencies.

9.2 Personal Protective Appliances

Safety appliances play a vital role in protecting the workmen from injury during execution of jobs. Some of the important safety appliances are listed below. They must be in good condition and conform to the laid down standards for them.

1. All persons at site shall wear protective safety helmets and shoes.
2. Men working at height must wear standard safety belt of approved quality and life line should not be less than ¾" diameter and **1.8M** long. Structural attachments shall be rated at 2450 kgs.
3. Persons doing material handling jobs, gas cutting, electrical works, welding or operating paving breakers should wear hand gloves prescribed for respective job.
4. While gas cutting, brick dressing, welding, grinding, operating pavement breakers, etc., workmen must wear safety goggles recommended for the purpose.

5. To protect people from falling from height safety nets, canvass sheets, etc shall be provided.
6. Ear plug or Ear Muffs should be provided where workmen are exposed to noise level above 68 dB (as per new regulations).
7. Nobody should wear loose dress.
8. Firefighting equipment of proper type to be used while working, where there is a risk of fire hazard.
9. Workers employed on mixing asphaltic materials, cement and lime mortar shall be provided with protective footwear and protective goggles and rubber hand gloves.
10. Safety guards, safety devices of equipment should not be tampered with.
11. All safety appliances should be properly maintained and periodically serviced to maintain its original purpose/strength.
12. Persons engaged for spray painting or rubbing / scrapping of dry lead paint should use suitable facemasks.
13. Painters will be supplied with overalls and adequate facilities shall be provided to enable the painters to wash during the period of cessation of work.
14. While procuring safety appliances, due consideration shall be given to refer the relevant international standard codes, or the concerned safety engineers shall be consulted.

9.3 Transportation/ Road Safety and Preventive Maintenance:

The procedures and responsibilities for preventing motor vehicle accidents are as per Client jurisdiction. In addition, it sets the standards for driving performance, responsibility and vehicle maintenance expected of all Contractor's drivers.

The Contractor will employ only qualified personnel as drivers of appropriate motor vehicles. It is the responsibility of the driver's supervisor (Transportation Supervisor) to verify the driver's credentials prior to his employment to the project. The Contractor will adhere to the UAE Government law and Client (MM) guidelines on road safety policy.

- In vehicle monitoring system devices will be fitted into all light vehicles.
- No phone use by driver in a moving vehicle (using phone during driving is prohibited).
- Speed Limits shall be followed.

This section outlines the procedures and responsibilities for preventing motor vehicle accidents in UAE jurisdiction. In addition, it sets the standards for driver performance, responsibility, and vehicle maintenance expected of all sub-contractor, service organization and drivers. All drivers are expected to drive in a defensive manner and maintain control of their vehicles at all times.

Drivers Requirements

BIN RASHED and all its subcontractors must employ only qualified personnel as drivers of appropriate motor vehicles. It is the responsibility of the driver's Supervisor or Foreman to verify the driver's credentials prior to his employment. It is U.A.E Government Law and a Company rule that each person driving motor vehicle must possess and have on his person a valid U.A.E. Government Drivers License.

Drivers Responsibilities

1. It is responsibility of the driver to ensure that his vehicle is safe to operate.
2. It is the responsibility of each driver to take his vehicle to the proper facility for servicing and repairs when they are required or schedule.
3. The driver of the vehicle is fully responsible and accountable for the mechanical and physical condition of the vehicle. He must report any damage, beyond normal wear and tear, immediately.
4. The driver is responsible for transporting materials properly and ensuring that a load does not exceed the manufacturer's design load capacity. Al loads must be properly secured and tied down. Materials should not extend over the sides of the truck. Loads extending beyond the front or rear shall be marked with a red flag. Also such load must be equipped with visible brake and taillights at their rear and points.
5. The driver and all passengers of a Company Vehicle shall wear seat belts at all times while the vehicle is in motion.

6. Drivers have full authority to refuse to transport any passenger who refuses to use seat belts. Conversely, passengers may refuse to ride with a driver who refuses to wear his seat belt.
7. Passengers shall not be transported in the rear of pickups or truck beads.
8. Driver should not transport more passengers than the number of seat belts provided in the vehicle.
9. All drives shall be familiar with what the Company considers unsafe driving practices and avoid them at all times.
10. The driver must not exceed the posted speed limit. This is the maximum speed allowed in a certain area. Every driver is expected to reduce his vehicle speed under hazardous weather or road conditions.

Motor Vehicle Regulations: U.A.E. Government

1. Each driver shall become familiar with and abide by, the UAE Government Traffic Regulations.
2. To drive safely speed must be reduced below the allowable speed limit at night or during fog, rain and sand storm.
3. Drivers shall comply with all UA.E. Government and traffic signs.
4. All vehicles shall be parked in reverse position in designated parking areas.
5. Parked vehicles shall not obstruct other vehicles, roadways, access ways, or fire hydrants.

Vehicle Condtion

It is the responsibility of the driver to ensure his vehicle is safe to operate. The driver is responsible for inspecting a vehicle before operating it to determine if the items as per checklist have been provided and are in satisfactory condition.

Vehicle Inspection Checklist

1. The vehicle number, company name, current inspection stickers and license plate (front and back) must be in place.
2. Seat belts are mandatory for all vehicle occupants
3. Two reflective warning triangles should be in each vehicle
4. Windows and windshield must be clean and free of cracks or damage. The glass must be in good condition. The windows must open and close properly.
5. All lights (high and low beam, headlights, taillights, dash lights, stop lights, turn signal lights, and the rear license plate light) must be in working order. When fog lights (front & rear) and clearance lights have been provided, they must also be in good working order.
6. All brakes (foot and band brakes) must be in good working order. Check the foot and hand brake mechanism for correct operations.
7. The automatic transmission must be in good operation condition with no alignment or control problems.
8. Springs and shock absorbers must be in good condition with no alignment or control problems.
9. There should be no excessive movement of the steering wheel and no signs of damage. Steering knobs and loose coverings are prohibited.
10. Tires should have no breaks in the tire casing or exposed fabric and must be inflated to correct air pressure as specified by the Transportation Department. If the treads shown any signs of wear like bare patches, this could indicate defective steering. Springs and / or shock absorbers.
11. Check the wheels for rim damage. Make sure the wheels are not buckled or out of alignment and wheel lug nuts are in place and secure of the rim.

12. If the vehicle is fitted with a trailer the coupling must be intact and working correctly. The trailer should have safety coupling chains, rear brake lights, turn signals, taillights and rear license plate lights.
13. Make sure that the inside and outside rear view mirrors are clear, adjusted, secured and undamaged.
14. Check that the windshield wiper blades are in good condition, and operate properly. Inspect the rear window wiper, if fitted. The windshield washer should work properly and there should be water in the washer container.
15. The Speedometer should be in good working order.
16. Test the exhaust system by starting up the engine or the vehicle, listening for sounds and spotting any leaks associated with it. Check to see if the tail pipe extends at least three inches from the body or the vehicle. Tile tail pipe emissions should be released from a point where they do not directly come into contact with the driver or the vehicle or its occupants, thereby causing any adverse health effects to any of them.
17. A properly inflated spare tire with jack and tire wrench must be provided. The tire wrench should be the correct size to fit the wheel nuts of the vehicle.
18. Check the following fluids of leaks and proper levels, especially in hot weather.

    Radiator coolant, Oil, Brake Fluid, Transmission oil (checked with engine running), Distilled water for the battery. The Driver should check the radiator coolant level only when the engine is cool. Fluid should be added to the level mark on the overflow expansion tank only if provided
19. The vehicle's horn must be operational.
20. Note all damage on the vehicle, process the proper reports and have the damage repaired. You could be charged with a hit and run accident unless you have a police vehicle release for major damage, and back up reports

for minor parking lot ' dings and scratches'. Each driver must conduct a vehicle inspection whenever taking charges of a vehicle and periodically thereafter (at least once a month) to ensure that all system is operating properly and there is no damage.

Passengers will be carried only the passenger compartment of a vehicle. All vehicle occupants must wear seat belts. Drivers shall insist that all passengers wear seat belts before starting the vehicle. Drivers can receive a moving violation for not abiding to his regulations.

Loose materials are to be kept out of the driving compartment. Do not place materials (hard hats, etc.) on rear window shelf.

Drivers Training

BIN RASHED conducts training courses and refresher course on vehicle checks, maintenance and safe driving, every driver on the company has to attend to safe driving training through defensive driving training.

Enforcement Of Safe Driving Practices

1. After the driver is given orientation, a Register of Drivers is to maintain.
2. A logbook shall be maintained.
3. Drivers to be trained on Booking Out / In procedure
4. It shall be ensured that all drivers are medically fit to drive.
5. No driver shall work more than 12 hours shift period.
6. A maximum of 10 hours driving time is allowed within 12hours shift, by having 15 min. rest after 2 hours of continuous driving and 1 hour rest to be taken after 4 hours continuous driving.

7. No excessive driving hours to be allowed to ensure the vehicles / operation are of a standard that will enhance the safety of all vehicle drivers.

Vehicle Accident Reporting Procedure

1. All vehicles should have the ' List of Emergency Contact Telephone Nos.'.
2. All vehicle accidents and near - miss vehicle accidents should be reported immediately to the Client Project Manager and BIN RASHED HSE Manager.

3. Vehicles involved in accidents are not allowed to be removed from the accident scene without permission from local police.
4. Accidents Report From (ARF) to be completed as soon as possible.

Road Safety

1. The pedestrians, cyclists, drivers must follow the standard HSE rules framed for the purpose.
2. Nobody should try to cross the level crossing when drop gates are closed or signal is given for blocking the road. STOP LOOK AND PROCEED should be followed.
3. None should try to cross understanding wagons or down the track.
4. None should try to cross through the gap between buffers and wagons.
5. None should indulge in horseplay while on the job.
6. Undue haste should be avoided.

9.4 Hand Tools

Accidents arising out of hand tools can be attributed to any one of the following reasons:

1. Using the wrong tools
2. Using tools which are in poor condition
3. Using the tool in a wrong way
4. Keeping tools in unsafe places

If the above four conditions are taken care, we can eliminate all the hand-tool accidents.

Using the Wrong Tools:

The weight, size and type of tool should be selected to suit the job being carried out. Using pliers or wrenches as hammers, using screw drivers as pinch or chisels, using double end spanners in place of ring spanners, using pipe

wrenches as spanners are a few examples of using wrong tools.

Using Tools in Poor Condition:

Tools provided with wooden handle should always be used with the handles intact. The handles should be tightened with wedges whenever necessary. Split or broken handles should be replaced immediately. Pipes or rods shall not be used as handles.

Sharp tools improve accuracy and are safer than dull tools. Accumulated dirt or grease should be wiped off immediately to avoid slippage. Shovel and pick handles should be free from splinters, splits and cracks. Insulated and non-conducting tools should be rested frequently for their electrical resistance. Mushroomed chisel is a serious source of hazard.

Using Tools in Wrong Ways:

Wrenches should always be placed on nuts with the jaw opening facing the direction in which the wrench is to be rotated. Wrenches should not be pushed but be pulled.

Chisels should be held with steady but relaxed grip. Chisels being struck by others should be held by tongs or other holding devices. Always chip away from yourself and protect others by screening. Use goggles while chipping.

While using screwdriver, the object should not be held in hand or thigh. Blades of hacksaw should always point forward and the entire length of the blade should be used in the forward cutting stroke. The stroke should be steady and firm to avoid jumping of blade.

Keeping Tools in Work Places:

Hand tools should not be allowed to lie on workbenches, scaffoldings, etc., where they can be tipped down. They should be stored properly after the work is over. Sharp tools like screwdriver, etc. should not be kept in pockets. Hand tools shall not be held in hand while climbing up or down through a ladder. Tools should never be thrown up or down.

Jacks:

Select jacks heavy enough to rise and held the load safely. Jacks should rest on firm level foundation, adequate to support the load. Jacks of same capacity and type should be used while using number of jacks. Simultaneously be sure that the jack cannot tip and is in line with the vertical movement of load. Wooden block should be given over the jack also to avoid metal to metal contact. Load must rest on firm packing before releasing the jack or before allowing persons to work below the raised load.

Inspect frequently and use only the proper grade and clean oil. It is advisable shore up any load that must remain in a raised position for any length of time.

Portable Electric Tools:

1. Maintenance of electric tools should be systematic.
2. HSE guards provided in the tools should not be tampered with.
3. Gloves, HSE shoes, goggles, etc., should be worn by the operator wherever necessary.
4. Only experienced and authorized personnel should be permitted to operate power tools.
5. For all electric power tools, a running earth must be maintained and the supply cable should be handled very carefully
6. Electric supply should be disconnected before attempting any repairs or servicing. Even a change of wheel in the grinding machine requires the supply

to be disconnected.

Drilling Machine:

1. A prick punch or pilot hole should always be provided to guide the drill bit.
2. Suitable drill bit should be selected for the material being drilled.
3. If bit is long enough to pass through the object, care should be taken to avoid damage or injury on the far side.
4. If the object is small, it should be secured to prevent spinning.
5. Care should be taken to prevent sleeves and other clothing from being wound around drill.
6. The machines will be of **220 Volts** type provided with an adequate step down transformer.

Portable Grinders:

1. HOOD GUARD provided in the machine should be maintained & always in place.
2. Wheels of proper rpm rating should be used. Date of expiry of wheels should always be checked before mounting. If in doubt, a tap test may be conducted to check for minor cracks and the machine be allowed to run under no load in a safe place for some time.
3. The grinding wheel shall be stored & handled properly. It shall never be allowed to be dropped and stored in damp places.
4. Mounting blotter should be used when provided in the machine. The spindle nut should not be over tightened.
5. Only experienced and skilled grinders shall be engaged.
6. The grinding machine shall not be allowed to be kept on the ground when the wheel is at rotation.

Bench Grinders:

1. It should be provided with a proper earthing.
2. Eye shield and hood guard should be provided and maintained.
3. Wheels of proper rpm should be used and they should be carefully inspected to check for cracks. The object should not be forced on the grinding wheel.
4. Tool rests should be in place properly adjusted to a maximum gap of 1/8" from the wheel.

Pneumatic Tools:

1. Air hoses of Pneumatic tools should be protected against whipping. They should also be protected against damage by vehicles.
2. The air line should be de-pressurized before opening any joint.
3. Compressed air should not be directed against self or others. It should not be used for removing dirt from the clothes, etc.
4. Air hoses taken over head or vertically should be sufficiently supported.
5. Pneumatic hammers, drills, etc will be provided with suitable noise suppression.

9.5 Electrical Safety

9.5.1 Permanent Electrical Installations

1. All permanent installations of electrical materials, equipment, and circuitry or repairs, modifications, or maintenance to permanent installations of electrical materials, equipment, or circuitry must be done by a qualified person properly licensed as required in the location in which the work to be performed.

2. All repairs, modifications, and maintenance required on permanent installations of electrical materials, equipment, and circuitry must meet or exceed their original capacity and quality.

9.5.2 Temporary Electrical Installations and uses during Construction Activity

The following guidelines are to be considered the absolute minimum requirements to be supplemented by requirements of all applicable codes and standards for such work:

Wiring and Branch Circuits

1. Must be protected by a proper amperage over-current device such as a fuse or circuit breaker.
2. Must be located so as to prevent physical damage to the wire conductors.

Lighting

1. Temporary lights must be located at appropriate distances from the respective lighted work area(s)
2. All temporary lighting fixtures must be protected from accidental contact or breakage.
3. Temporary lights shall not be suspended by their electric cords unless they are designed for this type of installation.
4. Portable electric lights used in wet or potentially wet locations must be either low voltage type (**12volts or less**) or protected by an ELCB.
5. Portable light cords designed with (2) conductors are not to be used as extension cords to supply power tools.

Extension Cords

1. Must be visually checked before each use and periodically while in use to assure their original integrity is maintained. Cords with cuts, breaks, deep abrasions, etc. shall be taken out of service immediately. Repairs to extension cords shall only be performed by qualified, licensed electricians**.**
2. Are not to be hung across walkways, work areas, stairways, etc. where they create possible tripping hazards, or where they might be damaged by equipment or traffic. Cords may be hung over head with sufficient minimum clearance or rerouted under or around walkways and work places. Cords crossing vehicle traffic areas may be covered or encased by suitable material to protect them that is designed for this purpose.
3. Must not be fastened, or attached with any type of conductive material such as nails, metal wire, staples, etc.
4. Must not be allowed to lay in wet or potentially wet areas.
5. Must be of the **3-wire** type when used with portable electric tools and appliances.

9.6 **Storage, Handling & Disposal of Flammable Liquids:**

Storage of Flammable liquids, Chemicals and Lubricants:

Store flammable liquids in a separate storage area or in a purpose made bin or cupboard. Only clearly identified sealed barrels, boxes should be accepted on site. Any severely damaged, leaking barrels or barrels with broken seals must be rejected.

If barrels are stored outside they should be correctly choked at each end, stored horizontally and covered with a tarpaulin or other suitably waterproof sheet.

Keep barrels closed when not in use. Dispense liquids over a tray to avoid spillage.

Hazards

Fire

Nearly all flammable liquids, lubricants and chemicals are hydrocarbons or their derivatives and therefore constitute a potential fire hazard. The factors required for combustion is: -

1. Fuel
2. Oxygen
3. Ignition (source of energy)

The degree of composition of the above factors determines the severity of the hazard. A small oil leak or oil soaked rags will provide the fuel; the oxygen is available from the air leaving only ignition required for a fire to start. Ignition

may be from a spark from electric cable joints, welding or burning splatter or even perhaps a carelessly discarded cigarette end. Oil soaked overalls also constitute a serious fire hazard. Oil soaked rags left stored for long periods may spontaneously ignite; they should therefore be emptied from waste bins daily and either incinerated or disposed off in fireproof containers / skips.

Explosions:

Many lubrication systems operate at temperatures sufficient to produce inflammable vapors. When these systems are opened either for inspection or for oil top-up or any other maintenance function, do not smoke or apply naked flames anywhere in the vicinity - this will cause an explosion. Care must be taken to ensure that any unrelated work involving a heat source is also not being carried out in the vicinity.

General

Oil Leaks should be reported to a Supervisor.

Oil spillage must be cleaned up immediately as it poses fire and slipping hazard. If it is not possible to clean up the spillage at once, the affected area must have barriers erected to prevent people walking through it.

Oil or grease-soaked rags should be disposed of immediately after use in Toxic Waste bins and not left lying around on the job.

Dry dressing (e.g. Absorb-oil or dresser-dry) when used to clean up spillage or waste oil should be put into plastic bags, preferably Toxic Waste bags, as soon as it has soaked up the spillage and disposed of immediately in the Toxic Waste skip. The most commonly used method of dry dressing is covering the spilled area with sand and cleaning the sand after the spillage has been absorbed.

All bags of oil waste and oil soaked filters should be disposed of in the Toxic Waste skip in the Waste Compound.

Care should also be exercised to ensure that dry dressing is not allowed to contaminate and/ or block oil or water drainage systems.

Disposal of Waste Oil

BIN RASHED shall provide relevant authorized agency approved by client/consultant for coordinating the use and disposal of oils on site and should be contacted first if disposal of any oil is required.

Care should be taken when disposing of used or waste oils as often the oil or its components become degraded and the resultant breakdown products may be more harmful to Human Health and Environment than the original oil.

The spilled and waste oils must be collected in a labeled Waste Oil drum. When sufficient waste oil has been collected, it is removed from site. It is normal practice to drain the waste oil into a container i.e. a barrel similar to the one in which it was delivered to site, e.g.: **220-litre** drums. The container used must be one that has previously contained the flammable liquid, chemical or lubricant, and must be clearly labeled as ''Waste Oil' to avoid any contamination with the other oil being stored. Waste Oil drums should be made available in close proximity to where the oil is used.

9.7 Excavation, Trenching, Shoring and Other Related Work Procedures:

Excavation:

Common excavation risks include toxic gases, cave-ins, falls and striking buried

service lines.

Excavation plan shall be submitted to HSE Department before commencement of the work on all excavations for preparation of risk assessment analysis report by HSE Engineer/Officer and submit same to the client/consultant for their approval. Soil moisture should be considered before attending to excavations. Before any excavations that are **1.5 meters** deep shall be shored to prevent cave-ins. Shoring may be needed on excavations with less deep trenches on different types of soil. Sides of all excavations must be slopped to a safe angle not steeper than the angle of repose of the particular soil. Angle of repose for various soils is given in Table 2. If it is not possible to give a proper slope at the sides of excavation, where there is a danger of fall or dislodgment of earth or any material shall be securely supported by timber or any other type of shoring. Where the excavation is being carried out with 'Poclain', step down procedure should be followed.

1. No excavation or earthwork below the foundation level of any adjoining building in an existing plant/ factory shall be taken up unless adequate steps are taken to prevent damage to the existing structure. In shoring design BIN RASHED executive team always keep in mind that ground loading from structures, vehicles, heavy equipment, storage, weather, overlay and vibrations must be considered. Wall sheeting material and layout will vary with depth and soil types. Portable trench boxes and sliding trench shield designs shall be approved by Q/A, Q/C and reviewed by HSE Department. Trench shield walls should be extended above the excavation walls. Brace against movement. Shoring boxes should be unoccupied during movement and installation. Only a competent person shall conduct the daily excavation and shoring inspections and note the

observations on site HSE log book. Set back all excavated soil to at least **0.6** meter from the edge of the trench. Any accumulation of the dirt pile within **0.6 meter** of the edge should be removed before entering a pit.

2. Every accessible part of an excavation, pit or opening in the ground into which there is a danger of person falling, shall be suitably fenced with a barrier up to a height of **one meter** as close to the edge of the excavation as practicable. Suitable warning signs are also to be displayed. No heavy machinery or vehicles to be allowed up to **3 meters** of edge of the excavation.
3. No material or load shall be placed or stacked near the edge of the excavation or opening in the ground. The excavated material shall not be placed within **1.5 meters** of the trench or half the depth of the trench whichever is more.
4. Cutting shall be done from top to bottom. No undercutting of side of excavation shall be allowed. All narrow trenches **1.2 meter or more deep** shall at all times be supplied with at least one ladder for each **7.5 meter** in length or fraction thereof. Ladder should be extended from bottom of the trench to at least **1 meter** above the surface of the ground.
5. The sides of trenches which are **1.5 meter** or more in depth shall be stepped back to give suitable slope or securely held by planking, strutting and bracing, so as to avoid the danger of side collapse.
6. Before starting any excavation of any description in the Bypass Project work premises, permission in writing (**WORK PERMIT/PERMIT TO WORK**) must be obtained from Electrical Division, Civil Engineering and Design Department of the clients/consultant to avoid any damage to the underground utilities.
7. Any excavation or ditch more than **1.5 meter** deep must be properly shored if angle of repose is not given, before any worker is permitted to

work in it. A competent person shall inspect all timber and planks used there in. Undercutting of banks shall not be permitted. Erosion of soil over excavated pits, trenches must be prevented from running water by dewatering pumps, etc.

8. Excavation inside any part of the existing plant / factory must be properly fenced and marked with suitable warning boards or lights at all times. This also applies to any trench or drains which has its cover removed.
9. No loose material or load shall be placed or stacked near the edge of any excavation so as to endanger the lives of person working below.
10. When it is necessary to block off any road inside the existing plant or factory premises, proper road-barrier must always be used and existing rules of clients to be followed.
11. Pick and shovel people working in excavations should be kept far enough apart to prevent injury to one another.
12. All workmen working inside the pit shall necessarily wear safety helmets, shoes and those who are working in the slopes or benches of the pit shall use safety belt also.
13. Once excavate to locate is completed inspection will be done in presence of Client/Consultant representatives.
14. Data of existing services is to be taken from excavation to locate and check it along with MM and DOT, ADDC, ADNOC, GASCO, ADTRANSCO, ADM services.
15. Prepare shop drawing to show how to protect existing cables as per our standard drawing and how many future pipes required as per Transco Engineer instruction.
16. Take approval of shop drawing from both consultant and Transco engineer to obtain Transco work permit by competent person to allow starting the duct construction.

17. Indentify our scope of work in the site as per approved shop drawing.
18. Start excavation, by using hand tools only, No pickaxes, is permitted in the vicinity of existing service.
19. Prepare the duct requirement i.e. steel, split pipes and shutter.
20. Lay the cable gently inside split pipe to protect the cable wrap with polyethylene sheets tightly and fix the steel.
21. Check the level and alignment of the pipe by consultant surveyor before closing the shutter.
22. Try to finish the work at same day if not HSE precautions shall be considered to protect the existing cable by using warning tape and plastic barrier.
23. Incase excavation is more than 1.5m depth, the sides of the excavation shall be battered/sloped away from the bottom of excavation to ground level or shored.
24. In case of any damage to the existing cables during hand excavation, shall be informed to MM, ADDC and TRANSCO immediately.
25. Safety of the excavated pit is to be done by barricade of warning tape and signs and the working site shall be kept tidy and clean at all times.
26. No work to be started unless gets approval from ADDC/TRANSCO which works to be carried out nearby live electrical cables.

Method statement of any kind of new job to be submitted to HSE department for the preparation of Risk Assessment Analysis before commencement of job. Job Hazard Analysis to be carried out by site HSE Coordinator/Engineer. Risk Assessment Format enclosed.

Other Related Works:

The wire ropes used should be of sufficient dia. and strength to take the impact lead of chisel casing and sludge pump. A regular inspection of wire ropes should be carried out at frequent intervals.

Wire ropes with broken strands should not be used. A register showing history of wire ropes be maintained giving information on the inspections, repair carried out.

Suitable attachments are made in the pump and chisel so that these may safely be recovered without sending any person inside the bore holes whenever necessary.

If a person is to be sent inside any confined space i.e. sewer line, tunnel, well etc. the following steps be taken.

1. A certificate, in writing has to be given by a competent person, based on a test carried out by himself that the space is free from dangerous fumes and fit to enter **and / or**
2. The worker is wearing suitable breathing apparatus and belt securely attached to a rope the free end of which is held by a person standing outside the confined space.

No person shall be permitted to enter any boiler furnace, boiler flue chamber, tank vat, pipe or other confined space for the purpose of working or making any examination there in until it has been sufficiently cooled by ventilation or otherwise made safe for persons to enter.

* In case there is no sufficient projection of metal casing above ground level, adequate fencing should be provided in order to avoid fall of persons inside.

9.8 Scaffolding

For any work that cannot be done from ground level or from part of any permanent structure or from other available means of support, soundly constructed scaffoldings of adequate strength shall be used as a safe means of access. A scaffold or its components should be designed to support at least **4 times** the maximum intended load. During erection and dismantling, either scaffolding components or tools shall never be allowed to be thrown up or down. Slippery conditions on scaffolding must be eliminated as soon as they occur. No floor / other part of the scaffolding should be overloaded with debris or materials as to render it unsafe.

SCAFFOLD COMPONENTS:

ERECTED SCAFFOLDS DESIGN:

1. Submit erection plans to HSE Department for all scaffolds above **12.2** meters (**40** feet).
2. Only a professional engineer should design a tube and coupler scaffolds over **38** meters (**125** feet).
3. The erection plan should be attached to the Hazard Identification Plan (HIP).
4. Erection and assembly should be done by trained and authorized persons.
5. Substitution of manufactured scaffold components shall be allowed only with the written permission of the manufacturer, or HSE Department concurrence.
6. Scaffolds should be inspected regularly by a competent supervisor, or after adjustments, modifications, or severe weather.
7. Never use substitute parts for assembly unless reviewed by HSE Department and approved by Company Representative.

8. All scaffolds should be tagged by a responsible foreman if the scaffold is tagged with red or not tagged at all it should be considered as "un safe to work on".
9. To prevent slippage or shifting planks should be of the correct length and butt jointed.
10. Planks should not be painted, cracked, or cut. Ends to be closed off.
11. Planks should extend a minimum **15** cm (**6** inches) to a maximum **30.5** cm (**12** inches) beyond the end frame.
12. Floors should be fully planked without gaps or openings with scaffold grade planks.
13. Guardrails should be capable to stop a **200** lb. side force.
14. Scaffold should be tied to solid structures every **7.9** meters (**26** feet) vertically, and every **9.1** meters (**30** feet) horizontally, but at least once in each direction for smaller scaffold. Toe board (6''), mid rail (21'') and guard rail (42'').
15. Access shall be provided by a manufactured ladders or internal stairs, or by securely attached external straight ladders.
16. Extend ladders at least **1** meter (**3** feet) above the top guard rails, or above a landing.
17. Scaffold base plates should be fully supported by timber and other stationary means to provide stability.
18. Timber sills should be at least **23** cm (**9** inches) wide by **3.8** cm (**1-1/2** inches) thick, and span at least two posts.

Scaffolds should not be Supported on Concrete Bloks, Barrels, Scafold Planks or other Loose Materials.

1. Outriggers bracing against the ground should be used on erected scaffolds more than 2 sections high.

2. To prevent the outrigger base from slipping a kicker plate (ground stake) or other positive means should be used.
3. Mobile scaffold erection
    a. Work platform
    b. Guard rail system
    c. Spring loaded access gate
    d. The board
    e. Coupler
    f. Access ladder
    g. Locking casters
    h. Horizontal diagonal brace
    i. Cross bracing
    j. Locking pins
    k. End frame
    l. Mobile scaffold operating rules:
    m. Height should not exceed 3 to 3.5 times the minimum base dimension.
    n. Nobody should ride on a moving scaffold.
    o. Caster and wheel brakes should be locked.
    p. Outriggers should be deployed before use as required.

Suspended Scaffolds:

1. Suspended scaffolds should be inspected by Q/A Q/C, and bear a valid inspection sticker.
2. Provide an independent lifeline for each worker on the suspended scaffold, and secured to an independent anchor (used to tie-off only one lifeline at any time).
3. Each worker should wear a full body harness and be attached to his lifeline by a friction brake.
4. Suspended scaffold to be designed by a competent engineer.

5. Toes board to be 150 mm high.
6. Platform to be minimum 600 mm wide.
7. Gaps between rails to be less than 470 mm.
8. Cradle is to have fall arrest equipment.
9. Electrical cables to be looped and tied at roof level.
10. Provisions to be in place for winching workers to safety.
11. Controls are to be clearly marked.
12. An emergency procedure is to be in place.
13. Supervisor is to be competent.

Scaffold Work Rules:

1. An attached ladder should be used by workers for climbing the scaffold.
2. Do not carry tools in hands while climbing the scaffold. Use rope or bucket to lift objects.
3. Do not throw or drop material from the scaffold.
4. When any of the guardrails are down, all personnel (except authorized scaffold erectors) should be tied off with fall protection.

Common faults in scaffolding

1. Supporting of boards inadequate and therefore liable to tilt.
2. Absence of toe-boards and guard rails where necessary.
3. Faulty alterations made without approval.
4. Erected on uneven ground.
5. Supported by scaffold lashings instead of wire ropes.
6. Couplers misused; use of putlog coupler where load bearing coupler to be used.
7. Absence of ties where necessary.
8. Foundations insecure.
9. False supports, for example, drums, ladders, piles of bricks, etc.

10. Outdated and damaged couplers.
11. Lack of bracing.
12. Defective boards, large knots, split, etc.
13. Inadequate access.
14. Not wide enough – three planks is normally the minimum.
15. Gangways obstructed.

9.9 Ladders

1. Place a ladder so that the horizontal distance from the base to the vertical plane of the support is approximately one fourth the ladder lengths between supports. For example place a **3.6 meter (12ft.)** ladder so that bottom is **0.9 meter (3ft)** away from the object against which the top is leaning.
2. No portable single ladder shall be over **8 meters** in length. The width between the side rails shall not be less than **30 cm.** (clear) and the distance between adjacent rungs shall not be more than **33 cm (one feet).**
3. When a ladder is used an extra helper should be engaged for holding the ladder.
4. Do not use ladder in a horizontal position as runways or as scaffolds. Single and extension ladders are designed for use in a vertical position and not in a horizontal position.
5. Never place a ladder in front of a door that opens towards the ladder unless the door is locked, blocked or guarded. Place the ladder feet on a substantial, firm and level base, and not on any other objects like barrels, wooden boxes etc.
6. When using a ladder for access to high places securely lash or otherwise fasten the ladder to prevent its slipping.
7. Secure both bottom and top to prevent displacement when using a ladder for access to a scaffold.
8. Do not use a metal ladder close to live electric wiring or any operational piping like acid, gas, etc. which could be damaged. In such areas wooden ladder is to be used.
9. While ascending or descending, the user shall face the ladder, use both hands and place his feet near the ends of the rungs rather than the middle. Be sure your shoes are not greasy, muddy or slippery before ascending or

descending.

10. All ladders of vertical height more than **9 meter (30 feet)** shall be provided with an intermediate landing with guardrail, mid rail and toe-board.
11. No portable single ladder should be over **6 meter (20 feet)** in length.
12. Ladders should not be hung from brackets, as it tends to pull down the rungs.

9.10 FORMWORK:

1. Tubular steel frames used as staging to support concrete formwork should be used in accordance with each manufacturer's recommendation.
2. Before erection of steel frame staging is started, a thorough inspection should be undertaken on it.
3. Struts and/ or diagonal braces must be in proper position and secured for frames to develop full load carrying capacity.
4. As erection progresses, all connecting devices should be in place and fastened for full stability of joints and nuts.
5. The capacity of the soil for foundations should be determined for every staging job. The effect of weather conditions should also be taken into consideration as dry clay may become very plastic after a rainfall and show a marked decrease in load carrying capacity. Care should be taken not to disturb soil used for foundation supports.
6. Timber jacks, joists, stringers and ledgers should be inspected for defects such as cracks/excessive knots.
7. Final inspection of the staging equipment should be carried out to check soundness of the footing, all lower adjustment screws snug against the leg of the panel, all upper adjustment screws or heads of jacks in full contact with the formwork, panels plumb in both directions, and all cross braces in place and locking devices in closed and secure position.

8. During concrete pouring operation, there should be constant inspection of the staging system with provision for correction as necessary. Before the reinforcement & shuttering works are started for beams, working platform/walkway are to be provided.
9. Before starting the reinforcement work on the concrete column, the existing scaffolding must be extended to more than the required height, so that it provides a means to anchor safety belts used by the workmen.

9.11 WELDING

Major risks involved in welding are electrical shock, burns, fires, hazardous light radiations, eye irritation and fumes.

Avoiding electric shock:

1. Electric shock may arise due to poor earthing. Though, the operating voltage during welding is less, any voltage more than **24V** is not considered as safe. The shock hazard mainly depends on the body condition i.e. when the welder is in soaked condition due to perspiration or when he is standing on wet places, or when his gloves, shoes are wet, their severity of shock is likely to be more.

2. Normally there will be one work lead and a return lead. These two leads should be maintained without any break in between with all rigid joints, if any. In addition to this, the job should be grounded to the main earth, also a body earthing for the welding machine is to be ensured. Earthing from job should never be connected to charged pipelines and running plant equipment.

3. The welding machine and the cables should not be kept in wet places. The

inspection lamp provided to the welders should be preferably of **24 V**. type to reduce the shock hazard. Except the electrode holding jaw, the remaining part of the welding holder should be fully insulated. Gloves should not be taken as a substitute for holder insulation. Two fire extinguishers should available nearby welding work always.

Avoiding fires:

1. All combustible materials such as oil, paint, rags, etc., should be cleared off where welding operations are likely to be taken up.
2. While carrying out welding works in multi-storied structures, the welding sparks should be contained to the floor in which welding is carried out by using asbestos cloth or sheets.
3. While doing hot work (welding, cutting etc.) in operational process plants, the joints in the pipelines carrying inflammable gases and liquids in the near vicinity should be covered and the atmosphere should be smothered with inert gases. The process drains and gutters should be covered not to allow any sparks entering inside.
4. While suspending the operations, even temporarily, the holder should be hung safely to avoid inadvertent contact with the job or structure-causing spark. The supply should be disconnected when the welder wants to leave the workplace ever for a short while.
5. At the end of the job, before leaving the place of work, smoldering fires, if any should be put out.
6. The welding transformer body temperature should not be allowed to exceed **85 degree centigrade**. Otherwise it will lead to fire hazard. The transformers should be kept in well-ventilated area to facilitate cooling.
7. All cable joints should be very rigidly made and properly insulated to avoid the cables getting heated up or producing sparks causing fires.
8. Welding in closed containers should be carefully planned with adequate

ventilation to ensure that there are no toxic gases inside and also sufficient percentage of oxygen content. Empty oil or paint container should never be welded or gas cut. The container shall be thoroughly cleansed and purged to remove all combustible gases inside, before doing any hot work in confined

Avoiding Burns, Heat Effects:

1. There will be radiant heat while working on preheated job. To reduce the effect of radiant heat, asbestos curtain/apron should be used.
2. There should not be any pocket in the welder's dress and the shirt sleeves or the pant cuff shall not be folded back giving a chance to the sparks to get retained their burning the dress and the skin.
3. All hot objects should be clearly distinguished so that no workmen shall touch it by mistake. The helpers also shall use goggles to avoid getting burns while chipping, cleaning etc.
4. Avoiding radiations and fumes:
5. Eye injuries are most common in welding. It could be caused
   a. Due to seeing the arc welding rays directly/ indirectly.
   b. Due to seeing gas welding and cutting flames with naked eye.
   c. Due to fumes that emanate during welding
   d. Due to fall of flying materials while removing excess metal and slag.
6. A welding shield or welding helmet made of fiber glass, dark in color and fitted with a proper shade filter glass protects the welder from radiations, spatter and hot slag.
7. While working on highly reflective materials like Aluminum, use of a welding hood which covers the head, neck and extending up to shoulders is recommended.

Welders should not be allowed to test the holders for arcing without using face shield. The helpers assisting welders must wear goggles with shatter proof lens of not less than 3 mm thick. If the surface of the metal to be welded is galvanized, the fumes evolved during welding can cause a temporary sickness. Also metals such as lead, chromium etc. can give off very toxic fumes. In such cases, exhaust ventilation must be adequately provided.)

9.12 Use of Compressed Gas Cylinders

All compressed gas cylinders shall:

- Be labeled to describe the contents. Labels shall be attached to every cylinder.
- Bear permanent stamped markings on the shoulder of each cylinder showing:

1 DOT specification number

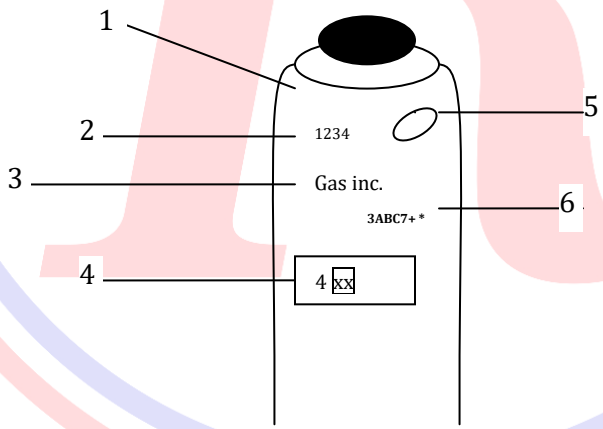
2 Cylinder serial number

3 Distributor name.

4 Inspector's mark and original date.

5 Manufacturer symbol or logo.

6 Retest date makings.



1. **A +** (plus symbol) on the shoulder after the most recent hydrostatic test allows a **10%** overfill
2. **A *** (star symbol) on shoulder after the most recent date allows **10-years** between hydrostatic tests. Color code cylinders.
3. Cylinders shall not have dents, rust, gouges, or burn marks.

4. The correct cylinder relief device shall be on the valve for the specific gas and specific cylinder pressure – verify the pressure number on the brass housing of the burst disk, fusible plug device, or other approved relief device.
5. Any compressed gas cylinder should be removed from services in violation of the above.
6. Before transporting cylinders remove regulators and replace cover caps.

Unloading of cylinders:

1 From the truck, unload directly on a raised platform by rolling over a coir mattress. If a suitable raised platform is not available slide down each cylinder over a **15cm** thick reinforced coir mattress, taking care that the bottom end touches first.

2 Lifting magnet should be used for unloading.

3 Cylinders should not be loaded loosely in a vehicle, failing which it will be subjected to heavy jolting and damage during the vehicle movement

Storage and Operation:

1. All standing cylinders should be secured to prevent falling over. Use rope, heavy gauge wire, or chain.
2. Use the correct regulator on each cylinder. No adapters are allowed.
3. Do not use grease or any type of oil on valves or valve thread.
4. Test connections for leaks with soapy water.
5. Fuel gas cylinders should be segregated 6.6 meters (20 feet) away from oxygen or other oxidizer gases.
6. Cylinders should be stored in the shade.
7. All manifolds shall have a relief device for each leg between any two shut-off valves.

8. Mark empty cylinders as “MT” with chalk.
9. Transport cylinders only in approved trucks, bottle racks with tie-downs, or secured on craftsmen trucks.
10. Cap all cylinders which are not in use.

‘Ten Commandments’ Regarding Gas Cylinders

1. Do not issue a cylinder to site unless contents are clearly identified.
2. Do not use a gas cylinder unless contents are identified.
3. Do not handle cylinders or valve assemblies with greasy hands or oily rags.
4. Do not lubricate cylinder valve threads.
5. Do not use cylinders as rollers, work supports etc.
6. Do not stack cylinders near sources of heat or in direct sun.
7. Do not lay cylinders direct on wet soil.
8. Do not place cylinders against wall on bench unsecured.
9. Do not keep cylinders in battery charging room or in oil room.
10. Do not allow cylinders to come in contact with live wires.

Compressed Gases Listed in Order of Hazard

Acetylene	250	Psi
Oxygen	2,200	Psi
Hydrogen	1,800	Psi
Chlorine	450	Psi
Ammonia	450	Psi
Nitrous Oxide	800	Psi
Sulphur-Di-Oxide	300	Psi

Methyl Chloride	300	Psi
Propylene	300	Psi
Ethylene	1,800	Psi
Nitrogen	1,000	Psi
Carbon-Di-Oxide	1,000	Psi

9.13 Pulleys

1. Proper pulleys should be used, according to the requirement of work.
2. In no case pulley meant for Manila/Nylon rope should be checked before use and lubrication done on necessary parts.
3. Sheaves, shafts, hook, hook pin, locking of pins should be checked before use and lubrication done on necessary parts.
4. Grooves of the sheaves should be uniform and smooth. The wire rope or fiber rope should run free without touching against the block or suspension parts.
5. Sheaves should rotate freely on the shaft.
6. The shaft should be free from crack and should not be worn out.
7. Anchorage should be short and firm.
8. Anti-twister should be used to prevent rubbing of ropes against one another.

9.14 Chain Block / Pull Lift

1. Chain blocks of proper lifting capacity supported by test certificate should be used for lifting known loads.
2. Chain block must be checked, and tested periodically. It should be lubricated before every use.
3. No cannibalizing should be done on chain block.

4. Chain blocks should be tested for slip by suspending safe load.
5. It should operate freely and the chain should not come out of pulleys.
6. The anchorage should be strong and rigid.
7. They should be checked for cracks, excessive wearing, elongation, etc. Hooks opened out should not be used.
8. No chain block/pulley, which has been tampered, be used unless it is thoroughly checked and tested by competent person.
9. Chain block/pulley must be checked if stored for longer time, by subjecting to shock load, to observe slipping of load, jamming of links etc.

9.15 Winches

1. Safe working load with gearing arrangement should be marked on the winch and tested regularly.
2. Winch should not be overloaded.
3. It should be placed on a firm base and properly anchored.
4. The brake, ratchet arrangement, gear and pinion including the meshing, wire rope and its clamping arrangements and direction of receiving rope drum, tie rods should be checked before using the winch.
5. Ratchet arrangement should be kept in position while hoisting a load.
6. Tie rod should be adjusted not to allow drum movement causing clutch arrangement to slip.

Mechanical Equipment Maintenance:

Cranes and Lifting Equipment

1. Report checklist deficiencies to your supervisor for corrective action.
2. The crane should have a valid inspection sticker before use. Do not operate any crane with an expired sticker or a REJECT sticker. BIN RASHED shall be followed color coding procedure by authorized agency

approved by ADPC for getting third party certification for all lifting appliance and cranes used by BIN RASHED for road construction works.

3. The operator is allowed to operate only the specific cranes and the specific configurations as described on his BIN RASHED Company certificate. (Neither weight capacity nor "crane families" are a valid criteria for certification)
4. Load charts and range diagrams should be displayed in every crane cab.
5. Verify that the mobile crane operator has a valid operator certificate issued by UAE.
6. A re-inspection by QC/QA is required after modification and repair of a crane before any use. Any modification or repair invalidates the inspection sticker.
7. Do not lift unknown weights.
8. If the object weight is unknown, determine weight by: calculation, use a load cell or a weighing scale, or use a crane with a Load Moment Indicator (LMI). Outriggers shall be fully extended.
9. When outriggers are not fully extended, the lift should be designated as on-rubber, and the load chart followed for on-rubber duty without exception.
10. Support the float pads by sand mats, cribbing, or float pad timbers on soil and sand.
11. Booms should be kept **6 meters (20 feet)** from overhead power lines up to **250,000 volts** and **7.5 meters (25-feet) above 250,000 volts.**
12. Winds above **32 kilometer per hour** require capacity reduction according to manufacturer's specifications.
13. All crane accidents/incidents shall be reported immediately to HSE Department, Crane Inspection.

14. The accidents site shall not be disturbed without HSE Department agreement, except to eliminate the imminent hazards or to provide medical attention to injured persons.

Critical Lifts are High Risks, and are:

1. Around energized electrical lines.
2. Near and over hydrocarbon, and pressurized, piping systems.
3. On barges, vessels, and hydrocarbon loading piers.
4. Around and over populated/traffic areas.
5. Tandem, multiple or tailing lifts.
6. On rubber pick-and-carry lifts.
7. Personnel platforms (man baskets).
8. High level or long reach lifts.
9. All Critical lifts should follow an approved "Lift Plan"
10. Competent Person should approve a Lift Plans before the lift
11. Man basket lifts requires an approved Man Lift Permit and a Lift Plan.

12. Travel of cranes requires removal of jibs, booms should be fully lowered and retracted, hook block secured, and swing lock engaged.
13. A signalman should direct the crane operator.
14. Each crane operator should follow the signals of on designated signalman
15. Cranes should be level within **1%,** as per the bubble level, before lifting any load.

Slings and Rigging

1. Rigging includes all attachments to the crane hook and all devices attached to the load.

2. Certificated riggers only to be carried for all rigging job at site.
3. All wire rope slings and chain slings shall have a permanent manufacturer's label which should show the following:
    a. Capacity Safe Working Load (SWL) in tones (metric tons).
    b. Manufacturer's name, trademark, or Logo.
    c. Serial number by the manufacturer.
        i. Chain slings labels shall also state the steel grade, and the SWL at the standard angles for multiple leg slings.
        ii. Synthetic webbing slings and fiber rope slings shall bear a durable label showing:
    d. Capacity (SWL) in tones (metric tons); and showing SWL for a straight pull, basket hitch, and choker hitch.
    e. Manufacturer's name, Trademark, or Logo.
    f. Serial number by the manufacturer.
    g. Type of material used in construction.
    h. Date when the sling was manufactured.
4. Multiple leg slings labels should also show:
    a. Capacity based upon standard angles.
    b. Angles not exceeding **60º** from vertical.
        i. All sling purchases should be accompanied by a manufacturer's certificate of proof-load test.
        ii. Slings without the manufacturer's label are not allowed on the construction site they should be removed from service and destroyed.
        iii. Sling construction shall comply with GCMS (BIN RASHED Company Materials Standard) descriptions.
        iv. Spreader bars and load beams should have a manufacturer's logo, permanent stamp or a plate bearing the SWL, and serial number.

v. The following items shall also be stamped or tagged with SWL, manufacturer's logo, and serial number:
   1. Shackles
   2. Eyebolts
   3. Safety hoist rings
   4. plate clamps
   5. pipe hooks
   6. come-a-longs

vi. Do not use job-made rigging to make slings.

vii. Hand tuck spliced slings shall not be accepted unless they are tagged as above, inspected by Q/A Q/C, and have a certificate of proof load test that accompanies them.

viii. A sling logbook should be kept to document routine sling inspections.

ix. Only a competent person is allowed to design the pad eyes.

x. Pad eyes should be load tested.

All Riggings with the Following Defects Should be Rejected:

1. Hook safety latches are not working or missing.
2. Wire rope with damage at or above:
   a. 10-broken wires total in 1-lay
   b. 4-broken wires in 1-strand of 1 lay
   c. 1 broken wire at a fitting
   d. Severe surface abrasion/scraping
   e. kinks, permanent sets
   f. crushing (e.g., run-over or struck)
   g. bird caging (sprung-open showing core)
   h. bent or open hooks

i. corrosion

3. Synthetic web slings with:
   a. Burns and heat damage
   b. Wear threads show
   c. Sprung fabric – bird caged
   d. Cut fabric
   e. Knots
   f. Damaged fittings
   g. Cracked, bent, worn end attachments
4. Reject hooks if they are:
   a. Throat opening more than 15% of normal
   b. Bent more than 10o out of plane
   c. Metal wear exceeding 10%
   d. Cracks in material
5. Shackles should be removed from service for:
   a. Metal wear reducing diameter 10%
   b. Bends
   c. Shackle pin threads do not extend through
   d. A substitute shackle pin
6. Eyebolt and safety hoist ring disposed if:
   a. Threads are bent or scored
   b. Bolt is bent
   c. Eye is elongated or bent
   d. Wear exceeds 10%

Mechanical Equipment

ALL OPERATORS of the following heavy equipment should possess a valid BIN RASHED Company certificate and a UAE Government license:

Bulldozer	Side Boom Tractor
Excavator	Backhoe
Roller	Tractor-Scraper
Grader	Forklift
Crane	Loader

OPERTORS of the following Mechanical Equipment are required to carry the appropriate UAE Government license:

1. Concrete trucks & mixers
2. Dumpers & dump trucks
3. Trucks with articulating boom cranes

OPERATORS of the following equipment should be qualified by the contractor:

1. Compressors Generators
2. Electric tools Woodworking
3. Machinery Concrete pump booms

General:

1. All inspections and maintenance of equipment in good condition should be done by the contractor.

2. Guards should be in place over exposed gears, pulleys, V-belts, fans, and revolving shafts.
3. The contractor should train and qualify his operators.
4. Equipment traveling or working on the highway should have lights and reflectors.
5. When vehicle are left unattended (even overnight):
   a. Stop the engine
   b. Set the parking brakes
   c. Chock the wheels
   d. Remove keys.
6. All equipment should be fitted with backup alarms.
7. Cabs fitted to equipment must give 360° visibility.
8. To prevent over-pressurization compressors should be fitted with relief valves that are calibrated, inspected, and maintained per manufacturer's specifications.

9.16 Concrete Mixers

1. All gears, chains and rollers of Concrete mixer should be adequately guarded to prevent damage/danger.
2. Concrete mixer hopper shall be protected by side railing to prevent workers from passing under them and operators shall make sure before lowering the skip that all workers are in the clear.
3. Hopper hoisting wire rope has to be checked for its condition periodically.
4. Hopper hoist and anchoring brake should be checked/ adjusted.
5. Skip hoist clutch to be checked and adjusted while slipping occurs.
6. Nothing should be kept inside the Motor enclosure.
7. Be sure that motor fan guard is secured firmly.
8. Be sure that wiring is properly connected and insulated.

9. Ensure double earthling is done for Electric mixers.

9.17 Concrete Vibrators

1. Vibrating unit shall be completely enclosed and belt transmitting the power to the unit adequately guarded.
2. Electrically operated compact Vibrators shall be totally enclosed and be protected against overloads by suitable overload relays and shall be effectively earthed.
3. Be sure that sufficient length of cable is provided to the Vibrator.
4. Ensure electric starters are fixed firmly on the stand.
5. While needle is inserted in the vibrator, be sure needle load is firmly locked.
6. Be sure to lubricate needle inner core.

9.18 Fire Prevention / Protection

9.17.1 Fire Prevention

1. The Project Manager and site HSE Officer will make regular site inspections in an attempt to identify fire hazards, and make recommendations for correction.
2. All flammable liquids / combustible materials will be protected with appropriate water or dry chemical powder extinguisher as required and away from source of heat.
3. The manner material storage must not be allowed to obstruct extinguishers.
4. Locate extinguishers where combustible / flammable materials are stored.
5. Open flame or smoking is strictly prohibited where flammable

material is stored.

6. Engines of all equipment shall be shut off during refueling operation.

9.17.2 Fire Protection

1. The basic first defense against fire is the portable fire extinguisher. Most common types used are:
   Dry Chemical Powder. (DCP)
   Soda Acid
   Water CO2
   Foam and
   CO2

2. Extinguishers must be conspicuously located, readily accessible at all times and regularly inspected to be in ready-use condition.
3. Training of fire fighting shall be provided to all employees at site periodically.
4. Extinguishers shall be procured and installed at each project site as required.

10 Work Permit System

Procedures for "Permit to Work" are intended to control and co-ordinate work activities and to ensure that hazards associated with the work have been properly identified and necessary precautions are taken.

The systems "Permit to Work" cover the following categories:

1. Work at Height Work Permit
2. Hot and Cold Work Permit

3. Electrical Work Permit
4. Excavation work Permit.
5. Confined Space Entry Permit

PURPOSE

The purpose of the work permit is to ensure that:

1. The job has been fully planned.
2. The hazard shall be identified.
3. The appropriate safety precautions are taken.
4. The conditions under which the work may take place are specified & followed strictly.
5. All workers / employees are instructed & trained properly.

10.1 WORKING AT HEIGHT

When there are chances of fall of person from height (including fall from ground level in to depth) requires issuing / obtaining "Permit to work at height" and shall be renewed every day before commencing the work at height by concern agencies.

Following precautions to be taken while working at height:

1 Proper HSE belt to be used.

2 HSE belts shall be worn and anchored to a fix structure or member properly.

3 Safe access like proper ladders, staircase, and scaffold with working platform to be provided.

4 When the erecting work is in progress the 'work area' shall be barricade or cordoned properly.

5 Any temporary structure erected shall be properly supported by tie

ropes / wire rope slings, additional temporary supports, etc. should not become obstacle to passage ways.

6 Proper HSE net should be provided at a height of 7.5 meter (25 feet) and above to avoid fall of men and material.

7 Proper care shall be taken to avoid fall of such tools and equipment.

8 Continuous and effective supervision is required.

9 Conduct tool box talk.

10.2 HOT WORK

A Hot Work Permit is necessary for all those activities where there a potential source of ignition exists. This is required where hot work is to be carried out in 'Hazardous area Hazardous areas for welding / gas cutting operations are as:

1. Gas cylinder storage, Oil storage, Paint storage, & timber storage areas.
2. Welding / Gas cutting at height where sparks are likely to fall down.
3. Stores, generator room, and electric room.
4. Welding / Gas cutting drums contaminated with flammable materials and tanks or containers.

Following precautions to be taken while working in such areas:

1. No combustible materials and flammable liquid in vicinity or protected with metal shields or protected with fire proof tarpaulin.
2. All wall and floor openings covered.
3. Welding / Gas cutting equipment in good condition.
4. Concerned area engineer / supervisor shall be notified.
5. Continuous and effective supervision required.
6. Two buckets of water & a fire extinguisher should be placed at work place.
7. Additional precautions needed for welding / gas cutting drums contaminated with flammable materials and work in tanks or containers are:
8. Drums or Tanks cleaned of all contaminated with flammable materials.

9. Drums or Tanks purged of flammable vapors.
10. Adequate air flow to be provided while welding / gas cutting is done inside the tank.
11. Continuous supervision by competent & responsible personnel.
12. Conduct tool box talk.

COLD WORK includes non igneous sources of activities like manual painting and cleaning etc.

10.3 Excavation

This is required where deep excavations or trenches work to be carried out & where there is a possibility of cave-ins or collapse of the sides.

Following precautions to be taken while deep excavations or trenches work to be carried out:

1. No deep excavations or trenches work may start without an excavation permit.
2. The whole area to be excavated must be checked for existing underground services & physically marked on the ground.
3. If any unexpected services are uncovered, must be reported immediately to Project Manager.
4. Area around the excavation to be barricade before the hole is opened or ahead of work progress.
5. Excavation must be sloped or shored when deeper than five feet.
6. Do not store spoils or other materials close to the sides of excavations.
7. Keep vehicles away from excavation where ever possible.
8. Where vehicles have to tip materials into excavation, use stop blocks to prevent from over-running.
9. Provide good ladder access or other safe ways of getting in and out of

excavation.

10. Proper precautions sign boards shall be displayed.
11. Check all excavation walls before entering and after a heavy rain.

10.4 Entry Work Permit

Activities of confined space and vehicle entry on site to be carried out as per entry work permit safety measures.

HSE GUIDELINES FOR SUB-CONTRACTORS

Purpose and Scope

The purpose of this guide is to establish minimum requirement for the safe conduct of sub-contractors work at **BIN RASHED** GEN TRANSPORT EST. project sites in order to ensure safety& health of all employees, to safe guard company's property and to protect the environment. The guide will also provide greater safety for their employees.

Communication

Sub-contractor shall appoint a supervisor responsible for the job who will be the focal point for communication with the project team. The sub-contractor supervisor shall meet Project manager before commencing any type of work at the site. Also shall meet concerned site engineer daily before commencing and before end of the day.

Procedures

The sub-contractor must follow the following procedural aspects. The procedures laid down are important and must be followed strictly by the sub-contractor. These procedures shall be reviewed with company's representative before commencement of the work at site, also as and when required.

1 Submit Form No. I, II duly filled in and signed by sub-contractor and sub-contractor's supervisor responsible for the job before commencing any type of

contract work within at BIN RASHED GEN TRANSPORT EST. project site premises.

2 Each employee of the sub-contractor must have his identity badge/card with him while entering and during the time he is at work site premises.

3 A HSE induction to all sub-contractors' supervisors, workmen will be held at site to outline Client/Consultant's and at BIN RASHED GEN TRANSPORT EST. HSE requirements and procedures specific to work site including the 'Contractors Rules'

4 Obtain certification of HSE induction under gone from site HSE Officer / HSE representative on your identity badge/card.

5 Below the age of **18 years** of the incumbent will not be employed. Employee accompanied with child will not be permitted to enter the site. Child labor is prohibited.

6 The sub-contractor must perform their work safely, so that they do not endanger themselves, other employee's life or property.

7 The sub-contractor is responsible for conveying all pertinent HSE information and requirements to his employees (including his sub-contractors) and should see that there is a strict adherence of the above.

8 The sub-contractor must comply with and is responsible for his employees (including his sub-contractors) withal provisions of statutory regulations as in force and laid down by the authorities.

9 The sub-contractor is required to maintain all registers such as employment register, wags register, leave register etc. as per statutory requirements as applicable.

10 The sub-contractor supervisor / representative must be present at all times at the site when the work is being performed by their employees. The job must not be left only to the workers.

11 The sub-contractor must submit the list of all the materials, tools and

equipment they want to take in use. They must be certified and approved by competent person before taking in to use at site.

12 Additional HSE rules or requirements may apply to specific work which is hazardous because of the location or the nature of process / activity, company's representative will advise the contractor of additional HSE requirements.

13 Special guidelines may need to be jointly established before work begins for the jobs requiring the use scaffolding and/or ladders.

14 All fabrication, erection of scaffold / material hoist / passenger hoist / tower crane etc. shall be discussed and got approved from company's representative before commencing the work.

15 The sub-contractor must obtain work permit from the concerned site engineer prior to start of activity such as Working at Height; Hot Work (welding & cutting); Deep Excavation and Entry in to Confined Space.

16 Violation of HSE rules if observed at site will be escorted out from the site premises.

11.1 Sub-Contractors Responsibility Towards Safety

A. GUIDELINES

1 The sub-contractor will be responsible for conducting their work in a manner that does not expose any employee, and / or property to unsafe conditions.

2 The sub-contractor will be responsible to ensure that their employees follow the safe practices, safe work procedures and safe provisions as per the company's HSE rules and regulations.

3 If sub-contractor fails to comply with any HSE requirements or work performed by their employee is unsafe, company may stop the work

and/or remove any non-complying employees, and immediately correct non-compliances

4 The sub-contractor shall appoint a HSE Supervisor / Representative to implement and enforce safe work procedures and safe practices effectively before commencement of any type of work at site. His name shall be conveyed to the Project Manager in writing.

5 The sub-contractor shall and abide by following general rules and specific rules intimated during the course of work.

B. GENERAL RULES

1 The possession and use of alcohol and / or drugs at the project site is strictly prohibited. Any employee appearing to be under the influence of alcohol or drugs will not be permitted to enter or work at site.

2 Always obey instructions and comply with all HSE rules, procedures and instructions.

3 Work place to be kept neat and clean, wastage / scrap to be removed after the completion of day-to-day work.

4 Make proper use of all safety devices and guards provided. They are for your protection.

5 Wear all personal protective equipment provided for your safety, i.e. helmet, hand gloves, goggles, safety belt, dust mask etc. It is mandatory to wear helmets by all while at work site.

6 Always walk. Never run at site (except in emergency).

7 Be alert and look where you are walking so that you don't slip or stumble. Use regular aisles and gangways. Do not take short cuts.

8 Do not lift the load more than safe working load.

9 Do not take undue risk or chance while at work.

10 Do not work under suspended load. Keep clear. Do not lean on stacked

material.

11 No one except the driver (operator) is allowed to ride on the excavator, bulldozer, crane, etc. No one is to operate such equipment without proper authority.

12 Never start, operate, adjust or repair any machine or equipment unless you are authorized to do so.

13 Before starting any machine or equipment, ensure that no one is in danger zone and that safety devices are in place.

14 Do not adjust, repair, clan or lubricate any machine or equipment in motion, or with engine running.

15 Treat all electrical wires as live wires. Do not insert bare electrical wires inside the socket. Use three pin plugs.

16 All electrical equipment used at site shall be of good quality and shall be fitted with good sound cable and earthing. No electrical equipment is safe if it is misused.

17 If you get injured, get first aid immediately however slight the injury may be.

18 Report all accidents to your supervisors and the concerned engineer at site.

19 If you are sick while at work, reports immediately to you are supervisor and take proper treatment / advice from the doctor.

20 When working at height a suitable scaffold shall be provided for employees for all work that can't be done from ground and/or ladder with access ladder and working platform provided with guard-rails.

21 No employee shall be permitted to work at height of 2meters and above without the use of safety belt with life line securely anchored.

22 Rolling gas cylinders is prohibited. For transferring gas cylinders from one place to another, a hand trolley shall be used.

23 The gas welder shall examine his torch, valves and hoses etc. for any gas leakages every day. Defective torches and hoses etc. shall be replaced. Always use spark lighter to light your torch. Lighting torch with match-box is strictly prohibited.

24 Always use oxygen and acetylene gas cylinders for gas welding and cutting operation. Use of Domestic L.P.G. gas cylinder is strictly prohibited at sites.

25 For electrical welding works, a good welding machine with sound welding & return cables shall be used. The welder shall not connect the earth to any structures. The welding cable shall be without any joints.

26 During welding and gas cutting, molten metal and spark are likely to fall down while working at height. The welder shall cover the length affecting the other works by wet gunny bags.

27 Compressed air shall not be used to clean clothing, a body parts etc.

28 While digging pits and trenches, the area shall be fenced.

29 Report all unsafe acts / conditions observed to your supervisors.

30 After completion of work, surrounding area shall be cleaned, scaffold if any shall be removed immediately.

C. RESPONSIBILITY OF SUB-CONTRACTORS SUPERVISOR

1 The HSE supervisors shall ensure that all his employees have received HSE induction before commencing any type of work at site.

2 Ensure that he has received copy of 'HSE Guidelines for Sub-Contractors' and all instruction pertaining to his job before commencing work at site.

3 Shall go through all safety measures, safe work procedures, understand properly and ensure that they are implemented by their work force effectively, if not shall be enforced strictly.

4 Shall ensure that employees engaged in any job or operations is fully aware of hazards associated with and follows the safe method of

working.

5 Shall attend and participate in all HSE committee meetings.

6 Ensure that all personal protective equipment are provided, used and maintained properly by their employees.

7 Ensure that safety belts with suitable anchoring arrangement are provided to his employees working at height. No employee of his shall be permitted to work at height without the use if safety belt.

8 Ensure that all accidents occurred on the site are reported immediately to the company's HSE Officer / HSE representative.

9 Any unsafe hazardous condition observed shall be corrected immediately or reported to concerned site engineer immediately or to the company's HSE Officer / HSE representative.

10 Ensure that no equipment, lifting equipment, tools and tackles are taken in use before obtaining clearance certification from company's competent authority.

11 Ensure that all pertinent safety information and requirements are conveyed to his employees and his sub-contractors, conveyed to him by the concerned company's officials.

D. HOUSE KEEPING & CLEANUP

The sub-contractor is responsible for daily cleanup of its work areas at site as follows:

1 Is to maintain good housekeeping standard at all times.

2 All work area shall be kept free from any dirt, debris, un-wanted materials, etc. to the satisfaction of the company's project management.

3 All materials placed in piles shall be done so in a manner that maintains safe clearance, and that prevents tripping or movement.

4 All loose materials shall be secured so they cannot be in-adversely pushed

off this stack.

5 Accumulation of any materials that may create fire hazard is strictly prohibited.

6 Excessive amount of materials are not to be stacked on floors or other supported areas in any manner that may possibly over weights any structural area.

7 Passages, stairways shall be kept clear of obstructions.

E. First Aid and Injury

1 Company will provide sufficient no. of First-Aid Boxes on each project sites for providing first aid to the injured employee by trained first aider.

2 In case of an injury that is serious enough to require professional medical attention the injured employee will be sent to the panel doctor appointed by the company. All treatment will be given as per the directive of the doctor.

3 The contractor shall report all injuries to company's representative immediately.

F. Fire Prevention

1 Smoking is strictly prohibited.

2 All fire extinguishers installed at site shall be kept free from obstructions, readily available for use.

3 Training of fire fighting shall be imparted at site to all employees.

4 Engines of all equipment shall be shut off during refueling operation.

5 The contractor shall inform to company the use of any flammable liquids at sites.

6 Flammable liquids like oil paint, varnish etc. shall be kept away from source of ignition.

7 Emergency procedure to be followed in the event of a fire at project site as following:

*Be concerned about your own HSE as well as of others.

* Make a safe attempt to extinguish. Do not endanger your life.

* At the same time shout ' FIRE, FIRE, and FIRE'

* Be sure you know the escape route.

* If you can't extinguish the fire alone, shout for help.

* Keep all spectators and non-essential employees away from the fire.

* If fire can't be controlled notify fire department.

NB: The Rules are Established by BIN RASHED Establishment (Road Construction Section) Corporate Safety Management for the Protection of all Employees Involved in BIN RASHED's Activity and are Subject to Changes at the Discretion of the Management.

Enclosed: **Sub Contractor Forms No. I, II, III, IV, V.**
BIN RASHED Forms
BIN RASHED IMS Policy
Tables and Risk assessment
Project Organizational HSE Organizational flow charts
Emergency Response Team Flow Chart
Emergency Evacuation Map and Contact Numbers Profile
Table of PPE Specifications and Angle of Repose

References: **UAE Federal Law No.8 (1980), Ministerial Order No.32 (1982), UAE Labor Law, Abu Dhabi Municipality Code of Construction Safety, ADDC issued documents, OSHA and NEBOSH Standards.**