

(SITE QUALITY CONTROL PLAN)

(CAPACITY TO PERFORM QUALITY WORKS)

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INTRODUCTION...

The company director and the founder must be an experienced contractor who has the capabilities to carry out and manage such projects.

founders and the key personnel of the company must be engineers of different trades that have worked in various large international investment projects.

Contractor should will develop a straight forward, easy to follow construction program completely run by local work force and installed with the best valued internationally acclaimed products to ensure a good reference for its progress as a general contracting firm in Iraq for many projects to come.

Contractor will follow a Quality Control and Assurance plan outlined in the following page to achieve a quality wise acceptable job for the customers & clients.

A brief description of the plan is given below:

I. QUALITY CONTROL PLAN:

A-PURPOSE:

The aim of this plan is to prepare a helpful guide for the project and consideration to be completed according to the drawings and specifications within the specified calendar days in an engineering approach, in this way the highest required quality will be maintained.

B-GENERAL LAYOUT:

Throughout the work, the quality control is going to be carried out under the responsibility of an organized quality control team. In general, the required quality is going to be achieved by;

- B.1) Receiving and warehousing,
- B.2) Inspections,
 - B.2.1) Preparatory inspection
 - B.2.2) Initial inspection
 - B.2.3) Follow-up inspection
- B.3) Records of inspection and tests

C-DETAILS:

C.I. Quality Control Organization:

The following personnel shall constitute the quality control staff for this project;

- C.I.1) Chief Quality System Manager (Engineer)
- C.I.2) Quality System Manager Alternate (Civil Engineer)

C.II) Methods of Quality Control Inspection:

Mainly three types of inspections are going to be performed for an adequate quality control. These inspections will result in a report and given to the supervisor.

The daily logs form is also a part of the quality control plan. These daily logs are going to be given to the supervisor after the inspection.

These reports will verify that material and equipment received at the job site are properly stored and protected from hazardous effects of construction action.

C.III. INSPECTION:

C.III-A-PREPARATORY QUALITY CONTROL INSPECTIONS:

These inspections are performed prior to beginning of any work, they will consist of, but not limited to, the following:

- C.III. A.1) Define the work to be performed according to the drawings and the technical specifications.
- C.III. A.2) Check the work area, the equipment, and the materials to be used from safety point of view with the safety supervisor.
- C.III. A.3) Check the relative items of work (i.e., materials, equipment and procedure) if they are Approved by the supervisor.
- C.III. A.4) Check the personnel assigned to that specific job, if they are qualified or not.
- C.III. A.5) Check the testing equipment on the job site if applicable.
- C.III. A.6) Fill in the inspection charts and the test report afterwards
- C.III. A.7) Preparatory inspection meetings will be held regarding the planned start of the subject activity with the participation of QC Engineers/s, Project Manager Superintendent, supervisor and related sub-contractors staff if needed.
- C.III. A.8) The minutes of the meeting will be recorded by Q.C. Engineer and submitted to supervisor.
- C.III. A.9) Supervisor will be notified at the last 24 hours prior to the meeting.
- C.III. A.10) Preparatory inspection check list will be submitted to supervisor as enclosure at Q.C. daily reports.

III-B) INITIAL INSPECTION:

These inspections will be performed prior to a representative portion of the particular feature of work being accomplished.

- B.1) Check the safety precautions.
- B.2) Check the compliance of the work with respect to specification and drawings as the specific work progresses.
- B.3) Check the dimensions and measurements.
- B.4) Check the details as the work progresses.
- B.5) performs the necessary tests (if applicable.)
- B.6) Fill in the inspection charts and test reports afterwards.
- B.7) Supervisor will be notified at least 24 hours prior to initial inspection through Q.C daily log or orally, upon the request of the project manager.
- B.8) Check list of the initial inspection will be submitted to supervisor as enclosure to Q.C. daily report.

III-C) FOLLOW-UP INSPECTION:

These inspections are performed as frequently as necessary to assure continuing compliance with contract requirements.

- C.1) Check the safety precautions as the work progresses and after the specific work are completed.

- C.2) Check the quality and quantity of materials used.
- C.3) Check the dimensions and measurements.
- C.4) Perform the related tests.
- C.5) Fill in the inspection charts and test reports.
- C. 6) Supervisor will be notified of the follow-up inspections for every applicable day with Q.C. report.

III-D) TEST METHODS:

The tests to be performed are going to be in accordance with related section of the technical specifications and RFP. The in-situ tests will be performed by the chief of Quality Control in the field. The off-site tests if deemed necessary are going to be performed in approved laboratories. The test results will be submitted to supervisor with Q.C. reports.

III-D.1) On-site Tests:

III-D.1.1) Tests on Civil Works:

- a) Field density and moisture tests.
- b) Compaction Tests
- c) Smoothness, thickness control and gradation tests for base course under paved areas
- d) Concrete and/or Asphalt tests.

III-D.1.2) Electrical:

- a) Insulation Resistance Tests.
- b) Continuity Test.
- c) DC High Potential Test.
- d) Operating test of electrical system.
- e) Off-Site Tests: Not applicable for this project.

III-E) DOCUMENTATION:

All the items explained so far, are going to be recorded by the relevant Q.C. personnel and submitted to the contracting officer on standard forms.

These forms will mainly include the following.

- 1) Report number, date, contract number and weather conditions.
- 2) Description of work performed.
- 3) Inspections performed by Q.C. staff.
- 4) Attachments

2. SECURITY PLAN:

Due to the nature of the construction work inherent in this project a wide and long line of work site will be covered during the construction period.

This special requirement which does not allow to works in a confined and controlled site brings additional security and safety issues considering the current conditions in Iraq today. Thus the security plans to be developed for this project will have job specific issues that may not be resolved by protective methods alone.

However, the following basic Security plan shall be implemented to safe guard the work and the labors.

1. PURPOSE:

The Purpose of this Security Plan is to outline how the safety and Security of the personnel working will be assured while working in General Construction services Project.

This Plan will include provisions for the safety and security of personnel both at job site and while in transit between their place of accommodation and the work site, where appropriate security arrangements at the place of residence are also included.

2. GENERAL:

The detailed Security Plan will be prepared and submitted in accordance with the requirements given in the Tender Specifications.

2.1-Certified Private Security Company Personnel will be used where it is necessary.

2.2-The majority of the workers, subcontractors, suppliers will be chosen locally to set up good relations with the Local people.

2.3-The offices, warehouses, sites will have access control and Company Identification Card system and Escort systems will be used for controlling accessing such places

2.4-The access control system will give the authority to the Guards to check the Loads of the vehicles when they are suspected

2.5-The material and Equipment transports will be done from the approved suppliers and with well-known transporting companies.

2.6-Storages will be in secured areas and the material stored in the storages and sent from the storages will be recorded. Explosive materials will never be remitted in the stores.

2.7-Personnel Security Rules will be in compliance with the general project security rules and this will be noticed to each worker against his signature when they start to work in the project.

2.8-For communication purposes only cell phones and local telecom network will be used

2.9-Each site, office and Storage will have emergency plan to be followed in case of any terrorist attack.

2.10-All security measures taken in the places belong to the Contractor will be in compliance with the Client's requirement, rules and instructions

2.11-Prompt and detailed reporting system will be developed for incidents of loss, theft or vandalism to Contractor

2.12-Forehead Reports will be submitted to the Contractor and Customer before starting at any work site which shows the number of the workers and their names and the requirements for security of the subject area.

3. SAFETY PLAN:

1. INTRODUCTION:

This Accident Prevention Plan has been prepared in the light of and to comply with the requirements of the END USER and Health Requirements Manual EM385-1-1 September 1996 Edition and Chapter 8 of 1 ABR 92-1 of the Fire Department Regulation entitled "Requirements for Contractors and Vendors", both of which constitute integral parts of this plan, the Article SC-28 of the Special Clauses entitled Accident Prevention Requirements. The provisions of this plan shall be strictly enforced and followed by the personnel of (Contractor) and its Subcontractors in the prevention and control of hazards associated with materials, equipment and services performed.

2. SAFETY AND HEALTH POLICY:

The objective of This Safety Plan (SP) is to establish and implement safety and health standards and requirements for the prevention of accidents and hazards. Under the provisions of this plan, workers shall not be required to work in surrounding or under working conditions which are unsafe or dangerous to his/her health.

2.1. Contractor shall be responsible for initiating and maintaining a safety and health program which complies with the END USER safety and health requirements.

2.2. Each individual employee is responsible for complying with applicable safety requirements, wearing prescribed safety equipment, and preventing avoidable accidents.

2.3. Safety and health programs, documents, signs, and tags shall be communicated to employees in the Iraqi Language.

2.4. For activities where employees are engaged in other than routine office/administrative functions, consideration shall be given to the development of a safety and health program.

2.4.1. Such as: activities, include, operations and maintenance, recreational resource management, surveying, inspection, and testing, construction management, warehousing, transportation, research and development, and other activities when the designated authority and the command safety and occupational health office agree on the benefit of such a program in accident prevention.

2.4.2. The safety and health program shall address those items in addition to the Government's specific safety and occupational health program requirements.

2.5. A job hazard analysis shall be prepared and documented for each phase of activity as warranted by the hazards associated with the job tasks.

3. ADMINISTRATION:

Contractor's Chief Engineer and the Safety Officer, who will report to him, shall be responsible for the implementation of this plan and for the prevention of accidents, material and health hazards.

The practices of the Chief Engineer with respect to matters of safety from the headquarter`s quarterly at periodic intervals. Primary responsibilities of the Chief Engineer and the Safety Officer are as follows;

- 3.1. Take all measures needed for the enforcement of the SP to provide safe working conditions and to avoid accidents and hazards.
- 3.2. Provide all employees with initial indoctrination to enable them to follow the provisions of the SP and to perform their work in a safe manner.
- 3.3. Investigate, report, analyses a keep records of all accidents, which occur incident to the execution of this project.
- 3.4. Prepare activity hazard analysis and submit for review and approval prior to the beginning of each major phase of work.
- 3.5. Prepare emergency plans to ensure the safety of the employees in the event of fire or other emergency conditions.
- 3.6. Prepare and implement contingency plans for severe weather conditions.
- 3.7. Make arrangements for medical facilities and personnel to provide prompt attention to the injured and for consultation on occupational safety and health matters.
- 3.8. Provide and maintain washing facilities in healthful and sanitary conditions.
- 3.9. Take appropriate measures for the disposal of waste material and rubbish.
- 3.10. Maintain work areas and means of access in safe and orderly manner.

4. INDOCTRINATION AND TRAINING:

All employees shall be provided safety and health indoctrination and continuing safety and health training to enable them to perform their work in a safe manner. Indoctrination and training shall be based on the SP and shall include but not limited to:

- 4.1. Requirements and responsibilities for accident prevention and maintaining safe and healthful work environments.

4.2. General safety and health policy and procedures and pertinent provisions of the END USER Safety and Health Requirements Manual and Iraqi regulations on workers' health and safety.

4.3. Employee and supervisor responsibilities for reporting all accidents.

4.4. Provisions for medical facilities and emergency response and procedures for obtaining medical treatment or emergency assistance including the location of first aid kit and introduction of first aid attend ant.

4.5. Procedures for reporting and correcting unsafe conditions or practices.

4.6. Job hazards and the means to control/eliminate those hazards, including applicable job and/or activity hazard analyses.

4.7. Firefighting and other emergency procedures.

4.8. Compliance with the requirements of wearing prescribed safety equipment and preventing avoidable accidents.

4.9. Handling emergency situations.

4.10. Handling of hazardous substances in the job site.

5. SAFETY MEETINGS:

Safety meetings shall be conducted as follows to review past activities, plan ahead for new or changed operations, review pertinent aspects of appropriate activity hazard analysis (by trade), establish safe working procedures for anticipated hazards, and provide pertinent safety and health training and motivation:

5.1. Regularly scheduled safety meetings shall be held at least once a month for all supervisors on the project to review past activities, to plan ahead for new or changed operations, to establish safe working procedures for anticipated hazards. The outline of the meetings shall be submitted to the SUPERVISOR and the meetings shall be recorded on the daily QC Report.

5.2. At least one safety meeting shall be conducted weekly by field supervisors of foreman for all workers for the review of the provisions of the SP and Safety and Health Requirements Manual with the aim of ensuring the performance of works currently being undertaken in safe and orderly manner.

These meetings shall be documented giving date, time, attendance subjects discussed and the name of individual (s) who conducted the meeting.

The documentation of these "Weekly Tool Box Meetings" shall be maintained and copies furnished to the SUPERVISOR on request.

6. HAZARDOUS MATERIALS AND ENVIRONMENT:

6.1. Prior to bringing hazardous substances onto the job site, all employees potentially exposed to the substance will be advised of information in the Material Safety Data Sheet (MSDS) for the substance. A copy of the MSDS for each hazardous substance at the project will be provided to the COR and made available to all potentially exposed employees.

6.2. Hazardous environment with an atmosphere, which possess a risk of death, incapacitation, injury, or illness due to flammable or explosive hazards; oxygen concentrations below 9.5 % or above 22 %; or any other atmospheric conditions recognized as immediately dangerous to life or health. Workers shall be excluded from work in hazardous environment.

7. EMERGENCY SITUATIONS:

7.1. Training shall be provided in handling emergency situations that may arise in the activities or use of equipment on the project.

7.2. All persons who may have occasion to use emergency and rescue or life saving equipment shall be familiarized with the location of the equipment and its capabilities and limitations and medically qualified for its use.

8. PHYSICAL QUALIFICATION OF EMPLOYEES:

8.1-All persons shall be physically, medically, and emotionally qualified for performing the duties to which they are assigned. Some factors to consider in making work assignments are strength, endurance, agility, coordination and visual and hearing acuity.

8.2. at no time while on duty employees use or are under the influence of alcohol, narcotics, intoxicants, or similar mind-altering substances. Employees found to be under the influence of or consuming such substances will be immediately removed from the job site.

8.3. Operators of any equipment or vehicle shall be able to read and understand the signs, signals, and operation instructions in use.

8.4. Operators of hoisting equipment, draglines, mobile construction equipment, and other equipment motor vehicles shall not be permitted to operate beyond the following limits: (Variation in these requirements require documented approval of the SUPERVISOR.

8.4.1. Operators of hoisting equipment, mobile construction equipment and draglines shall not be permitted to exceed 10 hours of duty time in any 24-hour period, including time worked at some other occupation, without an interval of 8 consecutive hours of rest.

8.4.2. Operators of other equipment and motor vehicles, while on duty, shall not operate

equipment or vehicle for a continuous period of more than 10 hours in any 24-hour period without at least 8 consecutive hours of rest; nor shall any employee, while on duty, operate any equipment or motor vehicle after being in a duty status for more than 12 hours during any 24 hour-period without at least 8 consecutive hours of rest.

9. ACCIDENT REPORTING AND RECORD KEEPING:

9.1. All accidents which occurred incident to an operation project, or facility for which this Manual is applicable will be investigated, reported, and analyzed as prescribed by the SUPERVISOR authority.

9.1.1. Employees are responsible for reporting all injure or occupationally-related illnesses as soon as possible to their immediate supervisor or to the Site 1

9.1.2. Employers and immediate supervisors are responsible for reporting all injuries to the SUPERVISOR within 24 hours.

9.1.3. No supervisor shall decline to accept a report of injury form a subordinate.

9.2. An accident with any of the consequences listed below shall be immediately reported to the SUPERVISOR these accidents will be investigated in depth to identify all causes and to recommend hazard control measures together with measures to avoid the recurrence of similar accidents. Contractors are responsible for notifying the Occupational Safety and Health Administration when one or more of their employees are seriously injured.

9.2.1. Fatal injury.

9.2.2. Five or more persons admitted to a hospital, or

9.2.3. Property damage in an amount specified by the SUPERVISOR.

Except for rescue and emergency measures, the accident scene shall not Be disturbed until has been released by the investigating official.

9.3. A daily record of all first aid treatments not otherwise reportable shall be maintained on prescribed forms and furnished to the designated authority upon request.

9.4. In addition to any other applicable requirements of this section on contract operations The prime contractor shall:

9.4.1. Maintain records of all exposure and accident experience incidental to work (this includes exposure and accident experience of contractor and of his subcontractors, and as a minimum these records shall include exposure work-hours and a log of occupational Injuries and illnesses.

9.4.2. Maintain records of employee exposure to toxic materials and harmful physical Agents will immediately notify the designated authority and employees of

any excessive Exposure experience and the hazard control measures that will be taken to control the Exposure

9.4.3. Maintain access to the project's Workers Compensation Claims Report which details

The compensable accidents experienced on the project by the contractor and Subcontractor

10. EMERGENCY PLANS:

10.1. Emergency plans to ensure employee safety in the event of fire or other emergency shall be prepared, in writing and reviewed with all affected employees. Emergency plans shall be tested to ensure their effectiveness.

10.1.1. Plans shall include escape procedures and routes; critical plant operations; employee accounting following an emergency evacuation; rescue and medical duties; means of information or clarification.

10.1.2. Planning for any operation shall include the total system response capabilities to minimize the consequences of accidents or natural disaster.

10.1.3. On-site emergency planning shall be integrated with off-site emergency support.

10.2. The number of persons permitted in any location shall be limited to rescue and escape capability.

10.3. Emergency alert systems shall be developed and tested to alert all persons likely to be affected by existing or imminent disaster conditions and to alert and summon the people and equipment comprising the emergency response capability.

10.4. Detailed plans shall be prepared for emergencies as may be deemed necessary by the COR. All exist, escape routes, and location of first aid kit shall be indicated. When there are warnings or indications of impending severe weather (heavy rains, strong winds, tornados, hurricanes, floods etc.)

Weather conditions shall be monitored and appropriate precautions taken to protect personnel and property form the effects of the severe weather.

Tarpaulin or polyethylene sheets for covering building materials which might be affected by water, water pump for draining water which might accumulate; suitable clothing for workmen etc. shall be readily available on hand.

Appropriate measures shall also be taken to prevent construction from flying. Under, other

emergency conditions Base Security Police, Fire Department and the SUPERVISOR shall be informed immediately and assistance and help shall be requested.

10.5. Emergency telephone numbers and reporting instructions for ambulance, physician, hospital, fire and police shall be conspicuously posted at the work site.

11. MEDICAL AND FIRST AID REQUIREMENTS:

11.1. General:

Prior to start of work arrangements shall be made for medical facilities and personnel to provide prompt attention to the injured and for consultation on occupational safety and health matters.

Communication and transportation of effectively care for injured workers shall be provided. The telephone numbers of physicians, hospitals or ambulances shall be conspicuously posted.

11.2. First Aid Kit:

A first aid kit shall be placed in the Coffee Room of the Contractor's Site offices, which shall be accessible to all workers and each item there in maintained sterile in a special cabinet.

The contents of first aid kit shall be checked by the safety officer prior to their utilization and at least weekly when the work is in progress to insure that expended items are replaced. Safety officer and the foreman, who shall be briefed on first aid by the designated medical officer, shall serve as the first aid attendants.

12. TEMPORARY FACILITIES:

12.1. General:

Plans for the layout of temporary construction buildings, facilities, fencing and access routes and anchoring systems for temporary structure shall be constructed and utility connections shall be made in conformance with the approved mobilization plan.

12.2. Fencing:

Temporary project fencing shall be provided in areas of active utilization by members of public and shall be delineated as indicated in the approved mobilization plan. Signs warning of the presence of construction hazards and requiring unauthorized persons to keep out of the construction area shall be posted on the fencing.

13. PERSONAL PROTECTIVE AND SAFETY EQUIPMENT:

13.1. General:

Employees shall use any personal protective equipment which may be required to maintain their exposure within acceptable limits. SROUSHT shall insure that employees receive

training in and use and maintain all personal protective equipment which is required to maintain their exposure within acceptable limits. SROUSHT shall insure that employees receive training in and use and maintain all personal protective equipment which is required to maintain their exposure within acceptable limits.

13.1.1. Employees shall be physically able and medically determined qualified to use the personal protective and safety equipment which may be required in their job duties.

13.1.2. Users of personal protective and safety equipment shall be trained and knowledgeable of the use, limitations, inspection, testing and maintenance of the equipment.

13.1.3. Copy of the manufacturer's use, inspection, tests and maintenance instructions shall be maintained with the personal protective and safety equipment.

13.1.4. Personal protective and safety equipment shall be tested, inspected, and maintained unserviceable and sanitary condition as recommended by the manufacturer.

Defective equipment shall not be used. Before being stored or reissued to another person, equipment shall be cleaned, disinfected, inspected and repaired.

13.1.5. When employees provide their own equipment, SROUSHT shall be responsible for assuring its adequacy in protecting against the hazard and its state of repair.

13.1.6. Minimum requirements: Employees shall wear clothing suitable for the weather and work conditions the minimum for field work shall be short sleeve shirt, long trousers and leather.

Or other protective work shoes or boots. Protective equipment shall be of heat/fire resistive material when conditions warrant protection against such hazards.

13.1.7. Protective footwear, such as rubber boots, protective covers, ice clamp-on and steel

toed safety boots, shall be worn by all persons exposed to hazards to the feet. (Including but not limited to, puncture, slipping, electrical or chemical hazards)

13.1.8. Persons involved in activities which subject the hands to injury (e.g., cuts, abrasions, punctures burn, chemical irritants, or toxins) shall use hand protection appropriate for the hazard.

13.1.9. Persons exposed to vehicular or equipment traffic, including signal-persons, spotters, or Inspectors shall wear belts or apparel marked with a reflector zed or high-visibility material.

13.1.10. Overhead protection shall be provided where the public or workers are subject to injury from falling objects.

13.1.11. Persons shall not be permitted to work to above or in positions exposed to protruding reinforcing steel or other implement hazards unless provisions have been made to eliminate the implement hazard.

13.2. Eye and Face Protection:

Persons shall be provided with eye and face protective equipment when machines or operations present potential eye or face injury from physical, chemical or radiation agents, Eye and face protection shall properly fit employee.

13.3. Hearing Protection and Noise Control:

All personnel shall be provided, as a minimum, protection against the effects of hazardous noise exposure whenever the sound-pressure levels exceeds specified values in Table 5-3 of EM 385-1-1.

13.4. Head Protection:

All persons working in or visiting hard hat areas shall be provided with and required to wear protective headgear.

Hard hat areas are those areas with potential hazard of head injury:

All construction areas are considered hard hat areas. Hard hat areas shall be general areas- such as construction, alteration, demolition, quarry or similar field activities, rather than specific portions of a building or project.

All points of entry to hard hat area shall have a sign warning of the requirements to wear hard hats. Protective headgear and components shall be visually inspected on a daily basis for signs of damage that might reduce the degree of safety originally provided.

14. LIGHTING:

While work is in progress, offices, facilities, access ways, working areas construction roads etc. shall be lighted by at least minimum intensities specified in I.G.T.S. The illumination shall be arranged so that the failure of any single lighting unit, including the burning out of an electric bulb, will not leave any area in total darkness.

15. ACCIDENT PREVENTION SIGNS, TAGS, LABELS, SIGNALS:

15.1. Signs, Tags and Labels: Signs tags and labels shall be provided to give adequate warning and caution of hazards and instructions and directions to workers and public.

Signs tags and labels shall be visible at all times when the hazard or problem exist and shall be removed or covered when the hazard or problem no longer exists.

15.2 All employees shall be informed as to the meaning of the various signs, tags and labels used throughout the workplace and what special precautions are required:

All employees shall be instructed that danger signs and tags indicate immediate danger and shall be informed of any special precautions which may be required and shall be informed of any special precautions which may be required.

16. MATERIAL HANDLING, STORAGE AND DISPOSAL:

16.1. All material in bags, containers, bundles, or stored in tiers shall be stacked, blocked, interlocked and limited in height so that it is stable and secured against sliding or collapse.

16.2. Unauthorized persons shall be prohibited from entering storage areas. All persons shall be in a safe position while materials are being loaded or unloaded from railroad cars, trucks or barges.

16.3. Material shall not be stored on road ways in excess of needs for normal placement operations, or in excess of safe load limits.

16.4. Materials shall not be moved over or suspended above personnel unless positive precautions have been taken to protect the personnel from falling objects.

16.5. Persons shall not work or pass under elevated work areas unless protected by overhead protection.

16.6. When moving equipment under or near energized lines, a designated person shall assure that required clearance is maintained.

16.7. Blocks shall be stacked in tiers on solid level surfaces.

16.8. Tools, materials, extension cords and hoses, or debris shall not cause tripping or other hazard.

16.9. Tools, materials, and equipment subject to displacement or falling shall be adequately secured.

16.10. Protruding nails in scrap boards, planks, and timbers shall be removed hammered in, or Bent over flush with the wood unless placed in containers or trucks for removal.

16.11. Whenever materials are dropped to any point lying outside the exterior walls of the building, on enclosed chute of wood or equivalent material shall be used.

16.12. Unloading of round material shall be done so that no person is required to be on the

unloading side of the carrier after the tie wires have been cut or during the unlocking of the stakes.

17. SAFETY PRECAUTIONS TO BE TAKEN DURING EXCAVATION:

17.1. Planning: The digging permit shall be obtained prior to the start of excavation works.

17.2. Excavation inspection and testing:

When persons will be in or around an excavation, the excavation, the adjacent areas and protective systems shall be inspected daily as needed throughout work shifts and after every rainstorm or other hazard-increasing occurrence by the chief engineer and the QCCR. If evidence of a situation which could result in possible cave-ins, slides, failure of protective systems, hazardous atmospheres, or other hazardous condition is identified, work in the excavation stopped until all necessary safety precautions have been implemented. Excavations less than 1.50 m in depth and which as competent person examines and determines there to be no potential for cave-in do not require protective systems.

17.3. Protection from water: Diversion ditches, dikes or other means shall be used to prevent surface water entering an excavation and to provide good drainage of the area adjacent to the excavation.

17.4. Safe Access:

17.4.1. Protection shall be provided to prevent personnel, vehicles and equipment from falling into excavations

17.4.2. All wells, holes, pits, shafts etc. shall be barricaded or covered.

17.4.3. Excavations shall be backfilled as soon as possible. Upon completion of exploration and similar operations, test pits, temporary wells etc. shall be backfilled immediately.

17.4.4. Walkways or bridges with standard guard rails shall be provided where people or equipment is required or permitted to cross over excavations.

17.4.5. Where personnel are required to enter excavations over 1.20 m in depth, sufficient stairs or ladders shall be provided to require no more than 7.50 m of lateral travel.

4. REQUIRED DOCUMENTS FOR PROJECT:

Depends of Scope of work of contract.

5-ORGANIZATION CHART:

The below is a typical organization chart for a work, such as the project in a site that is central and is in an urban area.

