1.0	INTRODUCTION:	3
1.1	Objectives:	3
2.0	PROJECT SAFETY	3
3.0	PHASES AND STAGES OF AN EMERGENCY	9
3.1	Phases:	9
3.2	Status of an Emergency:	9
4.0	MAJOR SAFETY RISKS AND CONCERNS	.10
4.1	Accident and Spills Procedures	.10
4.2	Ear Protection	.10
4.3	Eye Protection	.11
4.4	Respiratory Protection	.11
4.5	Ergonomics (Body Mechanics)	.12
4.6	Foot Protection	.13
4.7	First Aid	.14
4.7.1	Breathing	.14
4.7.2	Respiratory Failure	.14
4.7.3	Heavy Bleeding	.14
4.7.4	Shock Prevention	.14
4.7.5	Wounds, Cuts, and Abrasions	.15
4.7.6	Burns	.15
4.7.7	Working with Corrosives	.15
4.7.8	Eye Injury	.15
4.7.9	Electrical Injury	.15
4.7.10	Broken Limbs, Sprains, and Dislocations	.16
4.7.11	Skull and Spine Injury	.16
4.7.12	Stomach Injury	.16
4.7.13	Lifting a Person	.16
4.8	Fire Prevention	.16
4.9	Fork Lift Safety	.17
5.0	GLOBAL TASKS	.17
5.1	General Contingency Plan:	.18
6.0	SAFETY GUIDES:	18

7.0	REFERENCES	20
-----	------------	----

1.0 INTRODUCTION:

The National Works Agency's Occupational Safety Guidelines provide regulations and procedures to address safety concerns and to minimize the consequences of emergency, negligence, or injury that may occur on our project sites. These guidelines will be administered to our contractors as part of our general environmental management plans and procedures.

1.1 Objectives:

- (i) To protect human life and to preserve the environment.
- (ii) To minimize safety hazards or risks by enforcing appropriate safety procedures.

These objectives will not be altered by any speculative action or consideration.

2.0 PROJECT SAFETY

The traveling public constitutes a hazard to project personnel when the project is being constructed under traffic or immediately adjacent to the traveled way. Hazardous conditions exist when a survey party is working in traffic or where existing pavements are being widened or resurfaced. It is the responsibility of the person in charge to see that the available safety equipment such as caps, vests, flags, and cones are used properly. Chains or tapes should be unreeled on the ground clear of traffic and should not be thrown into the traveled way. Flagging must be done in the standard method so as not to confuse the drivers.

A Survey Party Chief should schedule his work to minimize being in areas where heavy equipment is used or where operations area concentrated in a relatively small area. Tapes or chains should not be thrown over power lines of thrown into the wind in the vicinity of power lines. Equipment such as axes, sledges hammers, picks and hatches should be checked frequently.

Each employee should be aware of the unpredictability of traffic and be ready to take evasive action, if required. Risks can be minimized by remaining in or adjacent to traffic no longer than absolutely necessary.

It is the responsibility of the Resident Engineer to see that the Contractor provides the necessary safety devices and uses them in the required manner to control traffic in the vicinity of construction operations. The use of **uniform flagging procedures** as outlined below, are of the utmost importance.

2.1 FLAGGING PROCEDURES

2.1.1. Qualifications for Flaggers

Standard: A flagger shall be a person who provides temporary traffic control. Because they are responsible for road user safety, and because they make frequent contact with the public, flaggers should have the following minimum qualifications:

- 1. Sense of responsibility for the safety of the public and the workers;
- 2. Adequate training in safe temporary traffic control practices;
- 3. Average intelligence;
- 4. Good physical condition, including sight, mobility, and hearing;
- 5. Mental alertness and the ability to react in an emergency;
- 6. Courteous but firm manner; and
- 7. Neat appearance.

2.1.2. High-Visibility Clothing

For daytime work, the flagger's vest, shirt, or jacket shall be orange, yellow, yellow-green, or a fluorescent version of these colors. For nighttime work, similar outside garments shall be retroreflective. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300 m (1,000 ft). The retroreflective clothing shall be designed to clearly identify the wearer as a person.

2.1. 3. Hand-Signaling Devices

Hand-signaling devices, such as STOP/SLOW paddles, lights, and red & Green flags, are used to control road users through temporary traffic control zones.

The STOP/SLOW paddle should be the primary and preferred hand-signaling device, because the STOP/SLOW paddle gives road users more positive guidance than red flags. The use of flags should be limited to emergency situations.

The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. STOP/SLOW paddles shall be at least 450 mm (18 in) wide with letters at least 150 mm (6 in) high and should be fabricated from light semirigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at night, the STOP/SLOW paddle shall be retroreflectorized.

The STOP/SLOW paddle may be modified to improve conspicuity by white flashing lights. Two lights may be installed and centered vertically above and below the STOP legend, or centered horizontally on either side of the STOP legend. Instead of the above twolight arrangement, one light may be centered below the STOP legend.

Flags, when used, shall be a minimum of 600 mm (24 in) square, made of a good grade of red and green material, and securely fastened to a staff that is approximately 900 mm (36 in) in length.

The free edge of a flag should be weighted so the flag will hang vertically, even in heavy winds. When used at nighttime, flags shall be retroreflectorized red.

2.1.4. Flagger Procedures

The use of paddles and flags by flaggers are illustrated in Figure 1

The following methods of signaling with paddles shall be used:

- To stop road users, the flagger shall face road users and aim the STOP paddle face toward road users in a stationary position with the arm extended horizontally away from the body. The free arm shall be held with the palm of the hand above shoulder level toward approaching traffic.
- To direct stopped road users to proceed, the flagger shall face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body. The flagger shall motion with the free hand for road users to proceed.
- To alert or slow traffic, the flagger shall face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body.

To further alert or slow traffic, the flagger holding the SLOW paddle face toward road users may motion up and down with the free hand, palm down.

The following methods of signaling with a flag shall be used:

- 1. To stop road users, the flagger shall face road users and extend the flag staff horizontally across the road users' lane in a stationary position so that the full area of the flag is visibly hanging below the staff. The free arm shall be held with the palm of the hand above the shoulder level toward approaching traffic.
- 2. To direct stopped road users to proceed, the flagger shall stand parallel to the road user movement and with flag and arm lowered from the view of the road users, and shall motion with the free hand for road users to proceed.
- 3. Flags shall not be used to signal road users to proceed.
- 4. To alert or slow traffic, the flagger shall face road users and slowly wave the flag in a sweeping motion of the extended arm from shoulder level to straight down without raising the arm above a horizontal position. The flagger shall keep the free hand down.

2.1.5. Flagger Stations

Flagger stations shall be located far enough in advance of the work space so that approaching road users will have sufficient distance to stop before entering the work space.

Guidelines for determining the distance of the flagger station in advance of the work space are shown in Table 1

The distances shown in Table 1 may be increased for downgrades and other conditions that affect stopping distance.

Flagger stations should be preceded by proper advance warning signs. At night, flagger stations should be illuminated. The flagger should stand either on the shoulder adjacent to the road user being controlled or in the closed lane prior to stopping road users. A flagger should only stand in the lane being used by moving road users after road users have stopped. The flagger should be clearly visible to the first approaching road user at all times. The flagger also should be visible to other road users. The flagger should be stationed sufficiently in advance of the workers to warn them of approaching danger by out-of-control vehicles. The flagger should stand alone, never permitting a group of workers to congregate around the flagger station.

At a spot constriction, the flagger may have to take a position on the shoulder opposite the closed section in order to operate effectively.

Table 1 may be used to determine the visibility distance for road users approaching the flagger. At spot lane closures where adequate sight distance is available for the safe handling of traffic, the use of one flagger may be sufficient.

Table 1: Distance of Flagger Station in Advance of the Work Space

Speed (km/h)	Distance (meter)
30	10
40	15
50	30
60	45
70	65
80	85
90	110
100	135
110	170
120	205

2.2 Working in High Risk Areas

All staff working in the vicinity of blasting operations, bridge construction, pile driving pipe laying, and operations that involve the use of cranes or draglines shall take extra precautions. They should never walk under any load suspended by a crane or dragline; remain a safe distance from a crane or dragline that is working in the vicinity of power lines.

In addition to the hazards pointed out for ground level operations, staff working above ground should be aware of additional hazards related to height and the limited working (or walking) area. Staff should never be required to work at high elevations when they are adversely affected by height. They should be properly dressed in regards to hard hat, safety shoes, and cuffless pants. Care should be taken when ascending and descending ladders, and when working on windy days.

Staff working on a high bridge that spans over water will be required to use life jackets and /or safety belts. Boats shall be inspected to determine if they are seaworthy and capable of safely carrying the weight of the crew and equipment. The boat shall not be overloaded. All members of the crew being transported by boat shall wear life jackets. Footwear type should be such as to prevent slipping.

Processing plants such as concrete batch plants, asphalt, and priestess yards present these hazards:

- Moving machinery,
- Vehicular traffic,
- Overhead operations,
- · Ladder stairs, and
- Hot materials such as liquid asphalt or asphaltic mix.

The seriousness of the hazards is compound by the continual high level of noise. Staff should take extra precautions when in and around such item as crushers, and asphalt and asphalt batch plants.

When an accident occurs that results in personal injury, the affected staff should fill out or have filled out for him an accident report form, no matter hoe insignificant the injury appears. This form should be submitted as soon as possible.

When as accident occurs involving a project vehicle, the driver must fill out the required accident forms no matter how minor the damage appears. This form, with the required copies, is to be submitted as soon as possible.

3.0 PHASES AND STAGES OF AN EMERGENCY

3.1 Phases:

(a) **Detection and notification**:

If a site staff/worker observes or is informed of a change in normal conditions, the project manager and the safety manager should be notified. If it is deemed necessary that the emergency plan should be implemented, the alert status for the response group should be established.

(b) Evaluation and start of alert Phase:

Once an emergency has occurred and evaluated, the emergency plans should be implemented along with controls, recovery measures and possible evacuation of injured people if necessary.

(c) Emergency Control:

Fires:

For the control of fires an officer can act independently. Consideration will be given to notifying the fire department

Spills:

The control of spills implies the participation of own personnel as well as specialized contractors who will put in place the current "industry" procedures. As far as possible, local efforts will limit the extension of the spill and recover the material as well as mitigate any damage to water bodies and the surrounding environment.

Slides:

The control of slides will be the responsibility of the contractor who will assign personnel and equipment to remove debris and to stabilize the area.

Floods:

The control during floods will include the detection of unsecured areas and the removal of people in danger. The removal of debris will be done by the contractor and disposed of in an environmentally safe location.

3.2 Levels of an Emergency:

Level 1: There is no danger beyond the project limits. The emergency situation can be taken care of by the Contractor's personnel. The emergency can be reported the next day.

Level 2: There is no immediate danger beyond the project limits but there is potential danger that the emergency might extend beyond the project limits.

Level 3: The project is non-operational and external assistance is needed. There is a certain risk of major injuries or death among the personnel of the public.

Level 4: The project is non-operational and external assistance id needed. There are deaths and major injuries among personnel and the public.

For the last three levels, the project manager must be immediately informed.

4.0 MAJOR SAFETY RISKS AND CONCERNS

On the project sites, workers are exposed to a variety of environmental, mechanical, and situational settings that may have adverse effects, posing serious safety risks and concerns. Some concerns are more likely to arise due to the nature of the National Works Agency's work but despite the hazard, all safety concerns should be immediately reported to the nearest supervisor/safety director and surrounding co-workers must be made aware of the potential safety hazard.

The situations and procedures that are most readily applicable to the project sites are as follows:

4.1 Accident and Spills Procedures

When handling hazardous chemicals or wastes, using proper handling techniques is the most effective way to prevent health and environmental disasters. In the event of toxic exposure to hazardous chemicals and wastes, remember that toxic dust or vapor as a result of a solid or liquid spill can have serious effects upon entering your system, so move quickly and safely. When approaching a spill for clean-up, remember to:

- (i) wear gloves, goggles, and other necessary protective equipment
- (ii) administer first-aid as necessary
- (iii) if fire occurs, exit area and call for immediate help

4.2 Ear Protection

Extremely loud and consistent exposure to noise impairs your ability to function by affecting blood circulation, producing stress, and, in some cases, causing immediate or eventual loss of hearing. Hearing protectors that include ear plugs, canal caps, and earmuffs can protect your hearing. Even though you may feel that you've grown accustomed to the noise level and consistency that you are exposed to, it still may gradually reduce your ability to hear over time and require you to undergo annual audiometric testing. On the worksite, clear communication is critical for receiving instructions, information, and safety warnings. Keep in mind that if you are unable to speak in a normal tone of voice when standing at arm's length, the noise level may compromise your safety and require you to be even more acutely aware of your surroundings.

4.3 Eye Protection

One must be able to recognize hazardous situations that compromise the safety of one's eyes. Exposure to the following may require eye protection:

- (i) dusts or powders, fumes or mists
- (ii) flying objects or particles
- (iii) injurious gases, vapors and liquids
- (iv) splashing metal
- (v) thermal and radiation hazards such as heat, glare, ultraviolet and infrared rays
- (vi) lasers
- (vii) electrical hazards

To protect one's eyes it is important to firstly minimize unnecessary exposure to that which may prove harmful to one's eyes. For example, wetting the roads of a construction site may reduce the amount of surrounding dust. Safety glasses provide protection and may be made of glass, plastic, or polycarbonate. Varied situations may warrant the use of a specific lens type. Polycarbonate lenses are lightweight and offer great impact resistance. Glass lens are effective against infrared radiation. Daylight or bright light exposure may require tinted or antiglare lenses. Goggles fit closer to the eyes providing a seal around them but if full face protection is needed, face shields are appropriate. Please be aware that some equipment has specific guards or movable screens attached to it. Proper ventilation, lighting, emergency eye-flush facilities, and routine vision testing also safeguard employees against eye injury.

4.4 Respiratory Protection

Exposure to dust, mist, pungent chemicals, toxic liquids, and fine particles may pose a threat to one's respiratory functioning. Inhalation of such matter is a common hazard on the work site which can be minimized. Wetting roads of construction with potable or acceptable quality water, reduces the amount of dust

that may be present in the air. In rare and severe situations, a respirator may be necessary to provide an alternate means of breathing without the surrounding pollutants. As with all equipment, the respirator must be maintained and used according to the provider's guidelines.

4.5 <u>Ergonomics (Body Mechanics)</u>

As your body responds and reacts to the machinery and equipment around you, improper handling can result in serious bodily dysfunction and disorder which may further lead to long term damage over time. An effect of stressful general body use is Cumulative Trauma Disorders (CTDs) which include disorders of the musculoskeletal and nervous systems. This may be caused by repetitive motion, forceful exertion, constant vibration, hard and sharp edges, sustained or awkward postures or by exposure to noise over extended periods of time.

Carpal Tunnel Syndrome (CTS) is a localized disorder affecting the hands and wrists. Caused by the pressure of repetitive motion, symptoms include tingling, numbness, or severe pain in the wrist or hand, usually at night. The injured person may also lack strength in the hand; be unable to make a fist, hold objects, or perform other manual tasks. Continued pressure may cause nerve damage, permanent loss of sensation and eventual partial paralysis.

Back disorders are most common on project sites as they are associated with excessive or repetitive twisting, bending and reaching; carrying, moving, or lifting loads that are too heavy or too big; poor physical condition; and poor posture. Practicing proper body mechanics is a preventative measure that must be employed alongside clear and honest communication with co-workers. Please keep in mind to:

- (i) Seek help for lifting objects that are heavy or difficult to manage.
- (ii) Only perform necessary lifting jobs.
- (iii) Avoid sudden twists and turns while carrying a heavy load.
- (iv) Ensure that your path is clear and be careful of your footing.
- (v) Use your knees to lift instead of your back.
- (vi) Be aware of proper posture when sitting, standing, or reclining.
- (vii) Follow a health-conscious diet and exercise program to ensure optimal health.
- (viii) Seek medical attention to address ailments as they arise and persist.

To prevent falls, trips, or slips while working:

- (i) Be aware of the floor surface you tread upon
- (ii) Wear appropriate shoes
- (iii) Keep floors clean and dry
- (iv) Be mindful of tool cords that may hinder your path
- (v) Report hazards
- (vi) Maintain clear visibility when walking while carrying objects

On the worksite, heat exposure and physical exertion requires the worker to pay special attention to the body's heat balance. As the body perspires to reduce your body heat, cool drinking water must be made available to replenish the fluids loss. Heat stress is noted by rising skin temperature, heart rate increase, deep breathing, and profuse perspiration. When profuse perspiration occurs, salt, an ingredient of your perspiration, must also be replenished. Insufficient hydration will cause dark urine with a strong odor.

Two medical effects of heat stress are heat exhaustion and heat stroke.

- **-Heat exhaustion** is identified by dizziness, fainting, and lowered blood pressure which are symptoms caused by a shortage of blood to the brain. To remedy this, one should lie down in a cool place to reduce body temperature and allow blood to flow to the brain.
- **-Heat stroke** causes skin that is hot and dry as a result of an ineffective perspiration mechanism. Body temperature will increase rapidly and sometimes, perspiration will cease altogether. The body can be cooled by sponging until medical attention is received.

4.6 Foot Protection

Foot injuries may occur in various ways. Some examples include:

- (i) **Compression** by falling objects or in between objects
- (ii) **Puncture** by sharp objects through the sole of shoes
- (iii) **Electricity** caused by tools or electric equipment
- (iv) Slipping- contact with oil, water, or chemicals that may cause falls
- (v) **Chemicals** may corrode some shoes and harm the feet
- (vi) Extreme heat or cold exposure
- (vii) **Sustained Wetness** may cause discomfort or fungal infection

As with other types of protection, certain types of exposure call for specific equipment. Rubber or plastic safety boots protect against oil, water, acids, corrosives, and industrial chemicals. Electric hazard shoes leave no metal to be exposed to live electrical circuits.

Foundry shoes can be quickly removed in the event of splashing molten metal or flying sparks. Conductive shoes are used where there is the danger of shock from high voltage.

Non-conductive shoes offer protection from the hazards of electric current in live circuits and equipment. There is also add-on foot protection for necessary reinforcement.

4.7 First Aid

First Aid equipment should be readily available at work site including a first aid kit and a stretcher with blankets. In the event of an accident, it is important to:

- (i) First, prevent further injury to others
- (ii) Call the supervisor, person responsible for first aid treatment or ambulance, if necessary.
- (iii) Aid the injured person

In the event of a serious accident, observe the following during the administration of first aid.

4.7.1 Breathing

If the injured person is not breathing, call for help and begin to breathe into the person's mouth. Begin with four rapid breaths and then one breath every second. If the person is unconscious, place them on their side with face down to prevent suffocation, only if neck movement is safe and allowable.

4.7.2 Respiratory Failure

If possible, tilt the injured person's hand as far back as possible, pinch nose, and begin blowing air into the mouth once every five seconds until breathing occurs, medical personnel take over, or CPR is necessary. If neck injury has occurred, grasp chin and pull it away from neck without moving neck. Be sure to watch if chest is rising and falling with breaths.

4.7.3 **Heavy Bleeding**

Apply direct pressure to a heavily bleeding wound and elevate the afflicted extremity. Allow the injured person to lie with their feet elevated unless head or chest injury or difficulty breathing is noted.

4.7.4 **Shock Prevention**

In the event of serious accidents, e.g. deep wounds with heavy blood loss, bad jamming accidents, injuries to chest or stomach leading to internal bleeding and

severe burns, etc., the injured person is at high risk for shock. As always, first check for breathing and then prevent shock by laying the injured person face down on one side. Tight clothing should be removed and a blanket placed below the injured person. The victim should be covered, protected from direct sunlight but do not give her/him anything to drink without medical orders to do so.

4.7.5 Wounds, Cuts, and Abrasions

If the injury is superficial, clean the cut or abrasion carefully with soap and water. The caretaker's hands should be washed before care and applied bandages should never be touched at the surface that will touch the wound. Serious injuries should be cared for by a medical professional.

4.7.6 **Burns**

If a person's clothing has caught fire, the fire should be quenched by rolling on the floor or in a blanket. Once the flame is extinguished, check for breathing, cool the burn with clean water, cover the burn and transfer the person to the hospital as soon as possible. Do not try to remove the victim's clothes or apply any substance besides clean water to the burn. Also, do not pierce a blister on a burn.

4.7.7 Working with Corrosives

If acid or alkali substances spills anywhere on the body, it should be rinsed thoroughly and immediately and treated similarly to burns. The face is especially sensitive to corrosive exposure. Be sure to wash hands thoroughly after contact with corrosives before touching face or eating food.

4.7.8 Eye Injury

If matter has entered the eye near the surface, you can rinse it out very carefully with a damp swab of cotton or the corner of a clean handkerchief. If a corrosive enters the eye, it should be rinsed for at least 10 minutes and medical attention should be sought. All other eye injuries, should contact medical professionals as soon as possible.

4.7.9 Electrical Injury

Electric shock can affect the heart and be fatal. The injured person should be disconnected from the electric device by turning it off at the source. If this cannot be done the person should be removed from the source or the source removed from the person, using something long, dry, clean, and non-conducive.

4.7.10 Broken Limbs, Sprains, and Dislocations

In the event of a limb fracture, the limb should be immobilised to prevent worsening of the condition and pain. A splint can be made of sticks, rolled newspaper, etc. and applied outside of clothing and secured with a bandage. The support should be long enough to cover the joints above and below the break in the bone. If a wound is present on the limb, cover wound before applying splint.

4.7.11 Skull and Spine Injury

Blows to skull can easily lead to a concussion or spine injuries. If person is breathing and conscious, do not allow movement unless it is required to clear air passages. Carefully place person slightly on side, paying special attention to spine. Do not stuff nose to prevent bleeding and do not try to rinse blood flowing from ears. If jaw is closed, do not attempt to force it open and be sure not to administer drinks to unconscious victims. If spinal or pelvic injury is suspected, allow only trained personnel to move the injured person.

4.7.12 Stomach Injury

If this occurs, carry the injured person to a hospital immediately. Do not give anything to eat or drink and cover wounds with clean, wet bandage until hospital transfer is possible.

4.7.13 Lifting a Person

If this must be done, do so by using a stretcher or big blanket. If trying to remove an unconscious victim from a fire or similar life-threatening hazard, you can drag the victim by their clothes.

4.8 <u>Fire Prevention</u>

In the event that an uncontrolled fire would occur it is critical to have access to safely stowed fire extinguishers that are prepared to function and to know what type of fire they are capable of extinguishing. Alert others and fire officials if necessary. When exiting a site of flame and smoke, remember to crawl to safety away from the direction of the flames and smoke to avoid inhaling smoke and fumes.

4.9 Fork Lift Safety

Only trained and authorized operators should drive a fork lift which requires skill, mechanical knowledge, compliance with safety rules, and defensive driving under unique conditions. Because of a fork lift's weight and use, it can easily injure others including the driver which is why only approved, alert, and appropriate behavior is allowed when using the fork lift.

- (i) The fork lift driver should be aware of overhead clearances, the load limit of the elevators, and the appropriate speed for road conditions and loadings; as overloading is a common and fatal safety hazard when using the fork lift.
- (ii) Railroad tracks should be crossed diagonally at an angle.
- (iii) Wear appropriate protective equipment including helmets, footwear, and gloves.
- (iv) Proper and routine maintenance of the fork lift as well as maintenance of the fork lift operator's skills is crucial for continued safety.
- (v) Appropriate and clear signals should be used when directing those driving the fork lift

As with all tools:

- (i) Keep your work area clean, well-lit, dry, and clutter-free.
- (ii) Maintain your tools in proper working order and clean tools using approved and manufacturer-recommended methods.
- (iii) Use appropriate safety features, protective equipment, and attire that keeps long hair and long sleeves away from being tangled in machinery.
- (iv) Use the appropriate tool for the job.
- (v) Keep electric cables and cords clean and free from kinks and intact. Wires and cables should not be hung over nails or metal hooks as it may cause wearing of the insulation cover. Exposed wires can be dangerous as it exposes the tool's electrical conductor to its user.

5.0 GLOBAL TASKS

The Global Task of the Emergency Plan is to constitute a professional Response Group (RG) in order to utilize with maximum efficiency, the human and material resources available as well as providing the RG guidelines for the main actions to be taken in the event of emergency that may occur, such as:

- i. earth slide
- ii. fuel and oil spills
- iii. fire and explosions

- iv. evacuation of the injured
- v. traffic accidents

5.1 **General Contingency Plan:**

- 1. Due to the urgency that an emergency generates, the Response Group will be established with personnel available on site for Level I and Level II cases. For Level III external assistance will be required.
- 2. In the event of an emergency, the project manager should be informed. If this is not possible, the safety manager, chief of technical office or Chief of administration should be informed.
- The project manager or the safety manager will decide, in accordance with the magnitude of the emergency. The Engineer and the client should be informed. External assistance will be requested through the Red Cross, the fire service.

6.0 **SAFETY GUIDES**:

- 1. The Project Manager and Contractor shall each designate in writing, a safety coordinator who will be responsible for observing the Contractor's day-to-day operations to ensure that safety procedures are observed throughout the project.
- The Contractor shall designate an individual responsible for checking traffic control after working hours and on weekends/holidays to ensure proper maintenance of traffic. The Contractor shall also advise the project manager in writing how to contact the designated individual in the event of a problem or emergency.
- 3. The Contractor is required to hold safety meetings at the start of the contract. Emphasis is to be placed on the overall safety programmes objectives, housekeeping standards, accident reporting, wearing of hard hats, high visibility work vests and the maintenance of traffic responsibilities. Attendances at this meeting should be work foremen and those above. Thereafter the contractor shall hold regular meetings with a one month intervals at minimum.
- 4. The project manager's and the Contractor's safety coordinators shall conduct weekly inspections of all areas within the contract limits and identify discrepancies and the persons responsible for corrective actions. The information shall be documented (Form 1a) on the safety inspection guide all inspections and any corrective actions taken.

- 5. Before the commencement of construction activities and during construction, the project manager may consult the police to inspect and approve safety measures provided by the Contractor.
- 6. If an accident occurs, the project manager shall complete an accident report (form 1b).
- 7. All accidents must be investigated by the Project Manager's and Contractor's safety coordinators to determine whether policies and procedures were followed and establish additional measures to reduce the possibility of recurrence.

7.0 REFERENCES

- 1. Keller's Official OSHA Safety Handbook, J.J. Keller & Associates, Inc., 1994.
- 2. U.S. Department of Transportation, Federal Highway Administration. MUTCD 2000. Manual on Uniform Traffic Control Devices, Mellennium Edition
- 3. <u>Safety-Health and Working Conditions: Training Manual,</u> Joint Industrial Safety Council in Sweden, 1987

Annex 1: Procedures with Flag and Paddle (Source: MUTCD 2000 US FHA)

