

RESCUE PLAN



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RESCUE PLAN

INTRODUCTION

Fatalities caused by falls from elevation continue to be a leading cause of death for construction employees, and fall protection remains Occupational Safety and Health Administration's (OSHA) most frequently cited violation across all industries as of 2018.

Preventing falls is always best, and having a Fall Protection Program in place is an excellent preventative step, but it is not enough. Just as installing smoke detectors isn't enough to prepare for the possibility of a fire, you need a plan of action for your team to follow in the event of an emergency. Creating a Fall Rescue Plan arms workers with the knowledge and processes they need to follow in the event of an emergency to prevent injury or death.

Together, having a proper fall protection program and a rescue plan in place give companies the best chance of avoiding falling injuries and ensuring that all workers go home safely.



A Rescue Plan goes beyond simply wearing PPE and having fall protection in place. Even after a worker's fall has been arrested, the danger has not passed. Fall protection is intended to distribute the force of a fall, but additional dangers exist for workers that remain suspended while awaiting rescue.

A rapid rescue is essential for preventing secondary injuries and even death that can occur in a fall incident, even after the danger of direct falling injury has passed.

Having a plan in place for how to retrieve a fallen worker and what to do after the worker is rescued is crucial to preventing falling injuries and fatalities. Calling the local fire department to retrieve a fallen worker is not always a viable rescue plan, because minutes and seconds count. Ensuring your team has a thorough rescue plan in place can prevent secondary injuries and save lives.

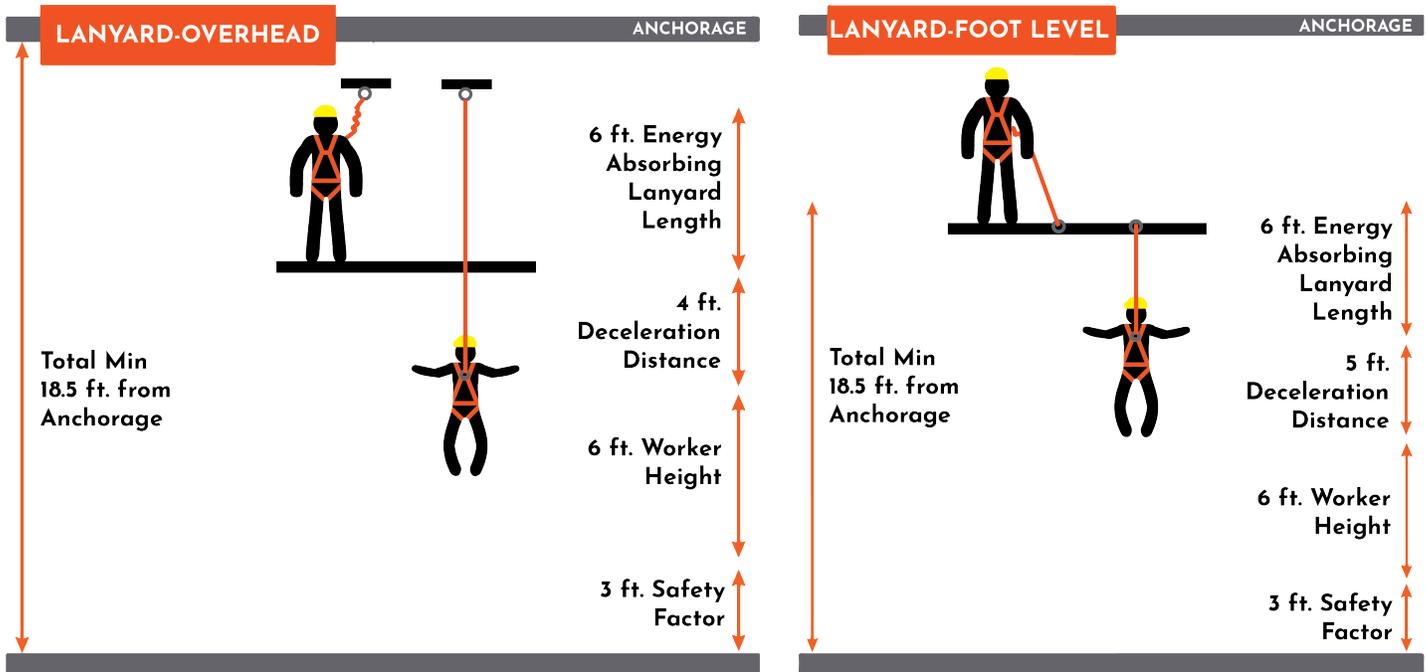


CALCULATING CLEAR FALL DISTANCE

The first step to ensuring worker safety in the event of a fall is to calculate the clear fall distance before work begins.

To calculate your **total fall distance**, add up the following measurements:

- Length of the fall protection connector system—the sum of the length of the lanyard
- Height of the worker
- Free fall distance—the distance before the fall protection system engages. OSHA allows up to 6'
- Deceleration distance—the distance during which personal protective equipment (PPE) such as a clutching self-retracting lifeline (SRL) works to decelerate and arrest the fall.
- Safety factor 3'—movement of the harness attachment, and length of the harness stretch. (Standard harnesses stretch 1', and comfort harnesses stretch up to 2.5'.)



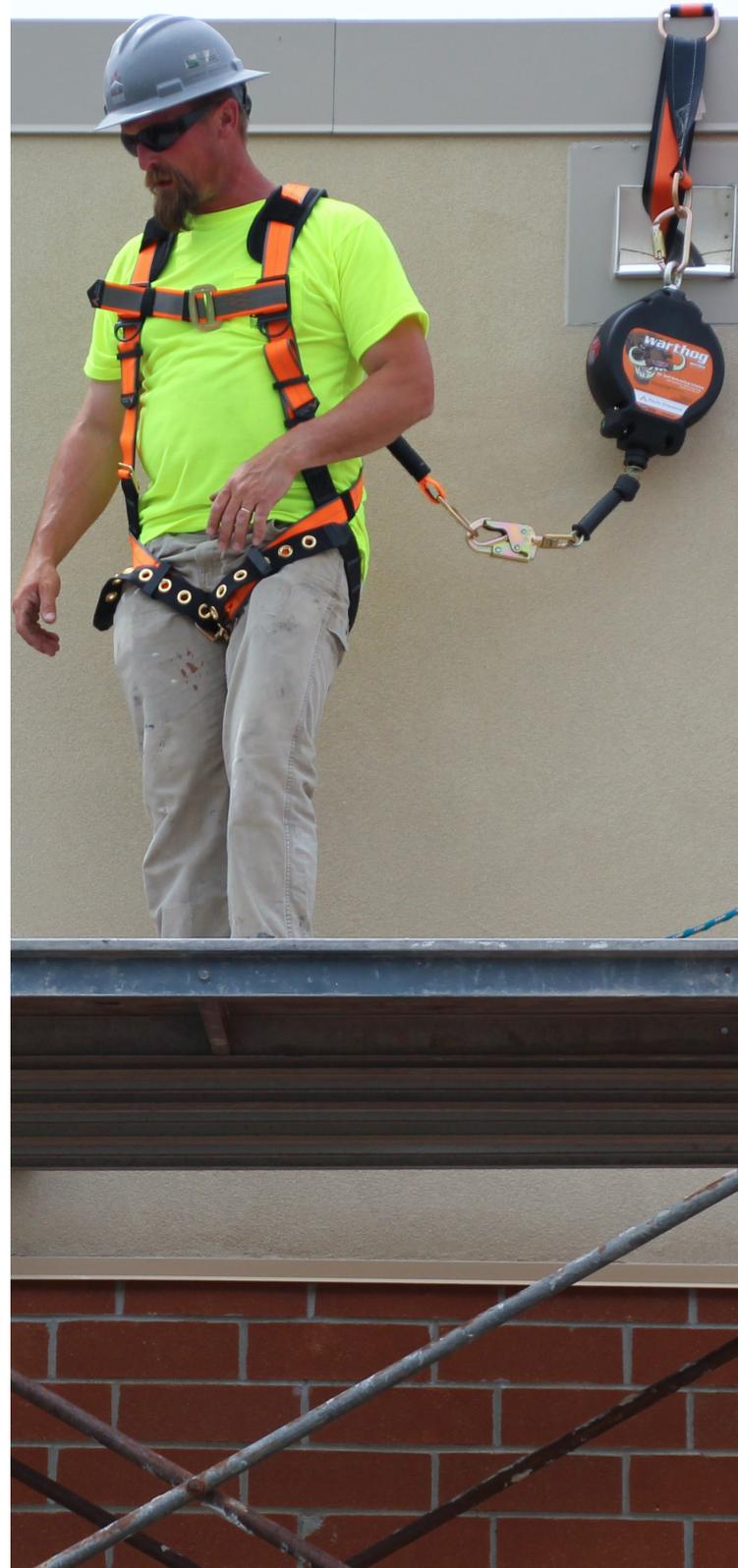
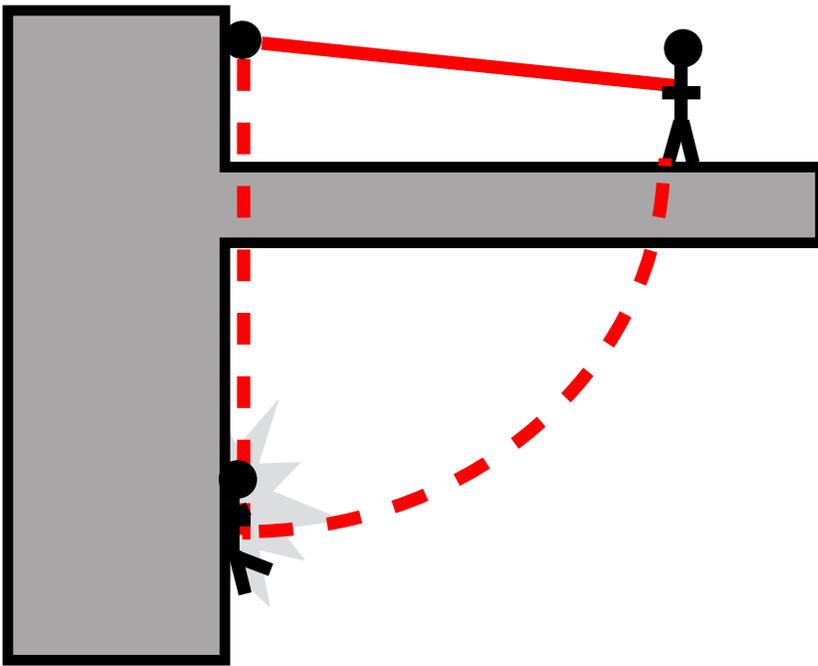
The total fall clearance below the worker should be measured from the anchorage connection. Ensure that the total fall distance below this point is clear of all obstructions and avoid potential contact with the ground or lower-level obstruction.

SWING FALL

Swing falls occur when the anchor point is not directly above the point at which the fall takes place. The downward force of gravity combined with the side-to-side force of the fall arresting system can create a dangerous swinging motion that can cause a falling worker without proper clearance to strike surrounding objects or obstructions with enough force to potentially cause serious injury or death.

Swing falls significantly increase fall arrest distance.

Minimize potential for swing falls by working as close to the anchorage point as possible. Anchor to a point directly overhead whenever possible. Do not permit a swing fall if obstructions surround the work site or if injury could occur.



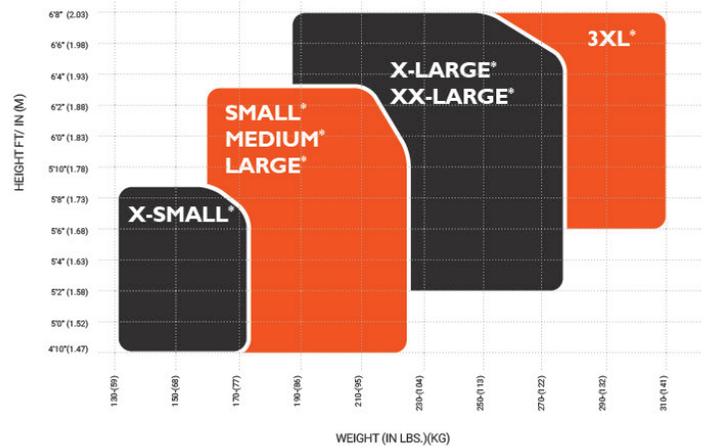
ANATOMY OF A FALL

Personal fall arrest systems (PFAS) used with a body harness are required by OSHA to limit the arresting force on an employee to 1,800 pounds. Should a fall occur, the body harness' straps and buckles are designed to distribute a maximum of 1,800 pounds of force throughout the body, to areas best able to absorb such forces such as the upper thigh muscles, chest, shoulders and pelvis.

These systems divert the force of the fall away from more vulnerable areas of the body such as the stomach, groin and neck, and are designed to minimize internal trauma. Harnesses come in various sizes designed to fit different body types, and there are harnesses designed specifically for women that provide different force distribution and support to the chest, hips and lower back. (Always use a properly sized harness adjusted to fit snugly but not too tightly.)

MALTA DYNAMICS HARNESS SIZING CHART

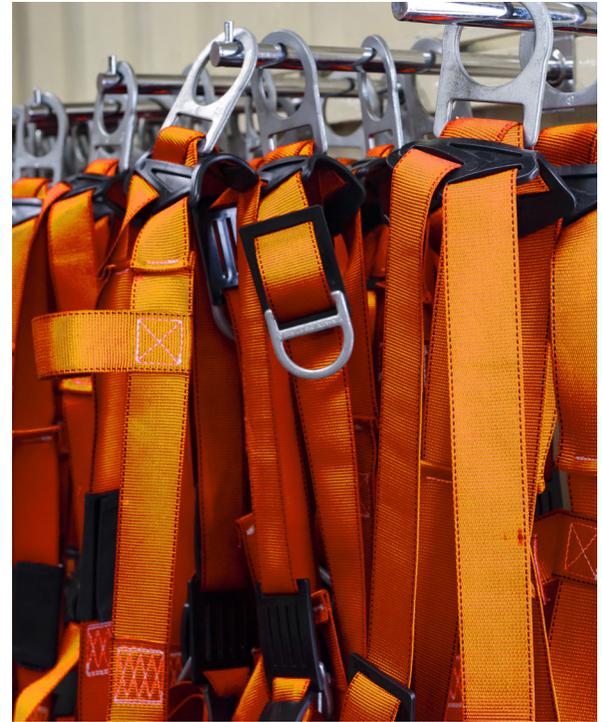
Belt Size	Waist Measurement
XS	22" - 46"
S-M-L	26" - 49"
XL-XXL	30" - 52"
3XL	30" - 53"



A full body harness also keeps a falling worker positioned upright. This position allows the device to decelerate the fall properly and keeps the worker's spine vertical in such a way that it can most safely absorb the compressive force that occurs during a fall.

It's important to note that even once a fall is arrested, the worker is not yet out of danger. Unlike harnesses used for mountain climbing, safety harness are not designed for prolonged suspension. The straps and buckles that reduced the impact of the force of the fall can begin to cut off blood circulation if the worker remains suspended for more than a few minutes.

While suspended, the harness's leg straps support the body's weight, and the femoral arteries in the legs are restricted. The worker's upright posture—ideal for safely stopping the fall—can cause the blood to begin to pool in the legs, creating a potentially deadly scenario.



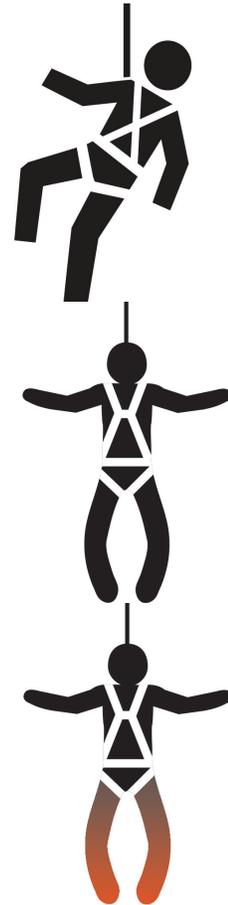
WHAT HAPPENS WHILE YOU WAIT ON RESCUE

After a fall occurs, a quick rescue is of utmost importance. While the worker remains suspended in a fall protection harness, his or her circulation is restricted, which can lead to a condition known as **suspension trauma**.

Suspension trauma, also called orthostatic intolerance or harness hang syndrome, is caused by the disruption of blood flow caused by hanging suspended in a fall protection harness. The harness straps supporting the body weight while suspended restrict blood flow through the body's large femoral arteries that circulate blood to the legs.

At the same time, the legs are dangling unused, causing the leg muscles to relax and the veins to expand, which allows blood to pool in the legs rather than being pumped back to the heart and lungs. This loss of circulation can lead to nausea, a drop in blood pressure, loss of consciousness and the onset of circulatory shock.

Meanwhile, the uncirculated blood pooling in the legs lacks oxygen from the lungs and begins a process called anaerobic respiration, which raises the acidity of the blood. This acidic blood can shock the liver, kidneys and heart once circulation is restored.



Prompt Rescue

Due to the risk of suspension trauma, OSHA requires that fall protection plans include plans for a prompt rescue. In a technical bulletin, OSHA states that suspension trauma can be fatal within 30 minutes of the initial fall. Dangerous effects of suspension trauma, however, can occur within as little as three to five minutes of a fall. Serious adverse health effects that require medical intervention can occur in as little as 12 – 15 minutes, according to an Air Force study.

When it comes to fall rescue, speed is of the essence. Having a carefully thought-out rescue plan can save precious seconds or minutes, which can translate to saving lives.

A Lifeline: Trauma Straps

A fallen worker whose harness is equipped with suspension trauma relief straps can deploy this emergency PPE to alleviate the dangers associated with hanging suspended. Trauma straps are emergency straps coiled into pouches that are attached to the fall harness at the hips. When hanging suspended and awaiting rescue, the fallen worker can deploy the trauma straps by uncoiling them, hooking them together, and standing on the straps like a bridge until help arrives. This engages the worker's leg muscles to encourage more normal blood flow and takes his or her body weight off the harness that would otherwise cut off circulation while hanging suspended.



TYPES OF RESCUE

Having a plan in place for a prompt post-fall rescue is one of the most overlooked and most important elements of a fall safety program. It isn't enough to rely on calling for help from emergency personnel, such as 9-1-1 or the local fire department—waiting for off-site help to arrive costs valuable time, and the emergency personnel who arrive on the scene may not be trained or equipped to navigate a rescue around various obstructions or at high elevations.

Having a written rescue plan in place before an emergency strikes removes the confusion and chaos that can lead to secondary injuries or put rescue workers in danger. Rescue plans can take three forms, depending on the situation:

Self-Rescue

As the name implies, self-rescue is when a fallen worker is able to move to a safe location after a fall without assistance. There are a growing number of options for self-rescue equipment such as self-rescue ladders and controlled descent devices that can make self-rescue possible in some situations, provided the workers are equipped and trained in how to use these devices ahead of time.

Self-Rescue Ladders

A self-rescue ladder is a portable rope or nylon ladder housed in a pouch that attaches to an anchor point and to the worker's harness, deploying automatically in the event of a fall. The fall victim can simply climb the deployed ladder to safety. Even if not equipped in advance, a rescue ladder can be deployed from the original anchor point or a temporary anchor point within reach. Self-rescue ladders are intuitive and easy to use and deploy, making them ideal for workers with minimal training.



TYPES OF RESCUE

Assisted Rescue: Buddy Rescue

This form of rescue goes by many names—Buddy Rescue, Companion Rescue, or Assisted Rescue—but at its core it refers to rescue of a fallen worker by a fellow worker on site. Rescue should only be performed by an authorized rescuer—meaning the employee should be trained on rescue procedures and equipment and first-aid techniques associated with fall arrest incidents.

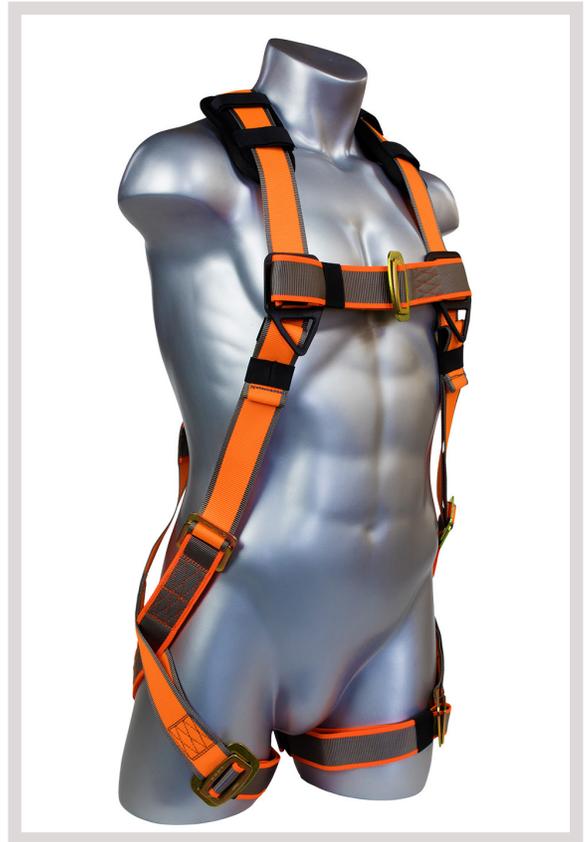
Buddy rescue is generally possible when the fall protection system is being used at heights accessible by standard industrial equipment such as ladders, lifts, or when rescuers can easily access safety mechanisms such as a harness with handles or self-retracting lifeline (SRL).

Harnesses

Some harnesses include handles on the shoulders that allow nearby workers to safely grab the fallen worker's harness and hoist him or her back onto safe footing. This option, of course, only applies to short fall distances where surrounding workers can safely reach the victim without putting themselves at risk of falling as well.

Self-Retracting Lifelines (SRLs)

SRLs are personal fall protection devices that serve a similar function to shock-absorbing lanyards. Recovery SRLs allow a rescuer to hoist a fall victim to safety with the help of an inbuilt winch mechanism.



TYPES OF RESCUE

Assisted Rescue: Team Rescue

In rare cases involving extreme heights or scenarios where specialized equipment or skills are necessary to reach a fallen worker, a dedicated team may be needed to perform a rescue. Team rescues can be performed by trained in-house teams, by contracted external rescue teams, or by emergency personnel / first responders as a last resort. Team rescue is the least ideal because of the inherent time required to get a rescue team to the incident site before the rescue effort can begin—in a situation where time is of the essence.



REPORTING FALL INCIDENTS TO OSHA

Any fall, even one in which fall protection is successfully deployed to prevent a falling injury, should be treated as a serious safety incident. Any work-related injury that results in loss of consciousness, missed or restricted work, or requires medical treatment beyond first aid is considered a recordable incident according to the OSHA.

What to do following a rescue

Once the fallen worker and all rescuers are returned to safe ground, assess the situation. If the fall victim may have sustained an internal injury, lost consciousness at any time during the incident, or remained suspended for more than a few minutes, take the victim to the nearest hospital (if emergency services are not already on the way or at the scene).

Next, if not already informed, be sure to notify your company's safety manager and appropriate supervisor(s).

Reporting to OSHA

Record as many details of the incident as possible using the following OSHA forms:

- OSHA's form 300 (Log of Work-Related Injuries and Illnesses)
- OSHA's Form 300A (Summary of Work-Related Injuries and Illnesses)
- OSHA's Form 301 (Injuries and Illnesses Incident Report)

All three forms can be downloaded <https://www.osha.gov/recordkeeping/RKforms.html>.

OSHA may conduct an inspection following an incident. If OSHA inspectors arrive, comply with all documentation and information requests, but do not admit to hazardous conditions or violations. A company representative has a right to be present and accompany all walkaround inspections. Keep good notes and take photos and measurements during or immediately after the inspection.

The OSHA inspector will discuss any observed violations; ask the inspector to send your company a record of any citations. You should ask questions about standards being cited and may ask about the severity or penalties, but do not argue or try to negotiate. Correct any unsafe conditions revealed by the inspection as quickly as possible.

YOUR FALL RESCUE PLAN QUICK SHEET



Authorized Rescuers

Name:

Position/Role:

Fall Response Checklist:

In response to a fall, immediately review the following checklist. Remember, a quick rescue is critical to preventing secondary injuries and death.

- Can the victim be pulled to safety to avoid hanging suspended?
- Is the worker's harness equipped with trauma straps?
- Are the victim or rescuers equipped with a rescue ladder?
- Is the victim attached to an SRL that rescuers can access?
- Do rescuers have access to a lift?
- Have emergency services been called?

First-Aid Trained Employees On Site:

Name:

Position/Role:

Emergency Supplies:

Location of nearest rescue ladder:.....
Location of nearest first-aid kit:
Location of nearest defibrillator:
Location of nearest telephone:

Emergency Numbers

Supervisor:.....
Safety Manager:
Nearest Medical Facility:

Emergency Services: 9-1-1
Medical:.....
Fire:
Police:



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