City of Oak Harbor, Washington

FALL PROTECTION PROGRAM

Last Updated January 2016

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Fall Protection Program

Purpose and Scope

The purpose of this fall protection program is to establish guidelines to protect all employees engaged in outdoor or indoor work activities that expose them to potential falls from elevations.

The scope of this fall protection program includes all agency/institutional buildings and staff. In particular, those staff engaged in work activities which expose them to falls from heights of 4 feet or more.

Goals

The goal of this Fall Protection Program is to follow WAC 296-155 Part C-1 (Fall Protection in Construction) and WAC 296-800-260 (General industry Fall Protection), and prevent the occurrence of falls from elevations of 4 feet or higher. This goal will be accomplished through effective education, engineering and administrative controls, use of fall protection systems, and enforcement of the program. This fall protection program will be continually improved upon to prevent all falls from occurring. **All records of training, equipment inspections, maintenance and annual evaluations (appendix 1-6) and Fall Protection Work Plan (appendix 7) will be filed and maintained by the Public Works Administrative Assistant.**

Definitions

Competent Person: An individual knowledgeable of fall protection equipment, including the manufacture's recommendations and instructions for the proper use, inspection, and maintenance; and who is capable of identifying existing and potential fall hazards; and who has the authority to take prompt corrective action to eliminate those hazards; and who is knowledgeable of the rules contained in this part regarding the installation, use, inspection and maintenance of fall protection equipment and systems.

Qualified Person: An individual, who by possession of a recognized degree, certificate or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, work or the project.

Anchor Point: A secure point of attachment for lifelines, lanyards or deceleration devices. An anchor point must be capable of supporting at least 5000 pounds (3600 pounds if engineered/certified by a qualified person) per person and must be independent of any anchorage being used to support or suspend platforms.

Full Body Harness: A configuration of connected straps that meets the requirements specified in ANSI Z359.1-2007, that may be adjustable to distribute a fall arresting force over at least the thighs, shoulders and pelvis, with provisions for attaching a lanyard, lifeline or deceleration device.

Connector: A device which is used to connect parts of the personal fall arrest system and positioning device system together. It may be an independent component of the system, such as a carabiner, or it may be an integral component or part of the system.

Deceleration Device: Any mechanism, such as a rope grab, rip-stitch lanyard, a specially woven lanyard, tearing or deforming lanyard, automatic self-retracting lifeline/lanyard, etc., which serves to dissipate a substantial amount of energy during a fall arrest.

Deceleration Distance: The additional vertical distance a falling employee travels excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body harness attachment point at the moment of activation of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

Free Fall: The act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Fall Distance: The actual distance from the worker's support to the level where the fall would stop.

Fall Arrest System: A fall protection system that will arrest a fall from elevation. Fall arrest systems include personal fall arrest systems that are worn by the user, catch platforms and safety nets.

Guardrail System: A barrier erected to prevent employees from falling to lower levels. This system includes a toe board, mid rail and top rail able to withstand 200 pounds of force applied in any direction.

Lifeline: A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline) or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline). This serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Low Pitched Roof: A roof having a slope equal to or less than 4 in 12.

Personal Fall Arrest System: A system used to arrest (catch) an employee in a fall from a working level. It consists of an anchorage location, connectors, a body harness and may include a lanyard, deceleration device, lifeline or any combination of the before-mentioned items.

Rope Grab: A deceleration device, which travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee.

Roof Work: The hoisting, storage, installation, repair and removal of materials or equipment on the roof.

Safety Monitoring System: A safety system in which a competent person is responsible for recognizing and warning employees of fall hazards. All other fall protection systems must be deemed "infeasible" (through infeasibility study/review) to select/use a safety monitoring system.

Safety Watch System: A fall protection system as described in WAC 296-155-24615(6), in which a competent person monitors one worker who is engaged in repair work or servicing equipment on low pitched roofs only.

Snaphook: A connecting snaphook that requires two separate forces to open the gate; one to deactivate the gatekeeper and a second to depress and open the gate which automatically closes when released; used to minimize roll out or accidental disengagement.

Steep Pitched Roof: A roof having a slope greater than 4 in 12.

Toe board: A vertical barrier at floor level erected along all open sides or edges of a floor opening, platform, runway, ramp or other walking/working surface to prevent materials, tools or debris from falling onto a person passing through or working in the area below.

Unprotected Sides and Edges: Any side or edge of a walking or working surface (e.g., floor, roof, ramp, runway, etc.) where there is no guardrail at least 39 inches high.

Warning Line System: A barrier erected on a walking and working surface or a low pitch roof (four in twelve or less) to warn employees that they are approaching an unprotected fall hazard.

Types of Fall Protection Systems

1) An articulating man lift provided with a restraint system and full body harness to an anchor point below the waist (preferably at the floor level).
2) Guardrail with a toe board, mid rail and top rail.
3) Personal fall arrest systems.

    - Anchor points (rated at 5000 pounds person).
    - Full body harness.
    - Restraint line or lanyard.
    - Retractable lanyard.
    - Rope grabs.
    - Connectors (self-locking snaphooks).

4) Engineered lifelines.
5) Warning lines.
6) Safety nets.
7) Safety monitor systems.

Appropriate fall protection will be determined by the task (job) to be performed.

Fall Protection Locations

Fall protection is required wherever the potential to fall 4 feet or more exists. The City of Oak Harbor has identified the following places concerning fall protection:

- All flat and low sloped roof locations, when within 4 feet of the roof edge or during roof repair/maintenance (4:12 pitch or less).
- All exterior and interior equipment platforms, catwalks, antennas/towers, etc.
- All exterior and interior fixed ladders above 24 feet.
- All mezzanine and balcony edges.
- All open excavations or pits.
- All tasks requiring use of the articulating man lifts.
- All tasks requiring employees to lean outside the vertical rails of **ladders (i.e., painting, stairwell light bulb replacement, etc.**
- Scaffolding erection – 10 feet in height or greater.

Fall protection is not needed if an employee or employees are on a low slope roof for **pre-work inspection/observation only!**

Fall Protection Guidelines – Options

Engineering Controls

This should always be the first option for selection whenever possible (e.g., light bulb changing➜ telescoping arm, changing valve➜relocate at ground level, etc.) or utilizing a contractor in extremely hazardous areas.

Guardrails

On all projects, only guardrails made from steel, wood, and wire rope will be acceptable. All guardrail systems will comply with the current Department of Commerce/OSHA standards (i.e., contain a 42" high top rail, a mid rail and toe board, which can withstand 200 pounds of force in any direction, at any point on the top rail). These guardrails will be placed in the following areas if necessary or feasible based on job location or requirements:

- On all open sided floors.
- Around all open excavations or pits.
- On leading edges of roofs or mezzanines.

Personal Fall Protection Systems

All employees on any project that will be required to wear a personal fall arrest or restraint system will follow these guidelines:

- A full body harness will be used at all times.
- Only shock absorbing lanyards or retractable lanyards are to be used so as to keep impact forces at a minimum on the body.
- Only nylon rope or nylon straps with locking snaphooks are to be used for restraints.
- All lanyards will have self-locking snaphooks.
- The employee will inspect all personal fall arrest equipment before each use. Any deteriorated, bent, damaged, impacted, and/or harness showing excessive wear will be removed from service.

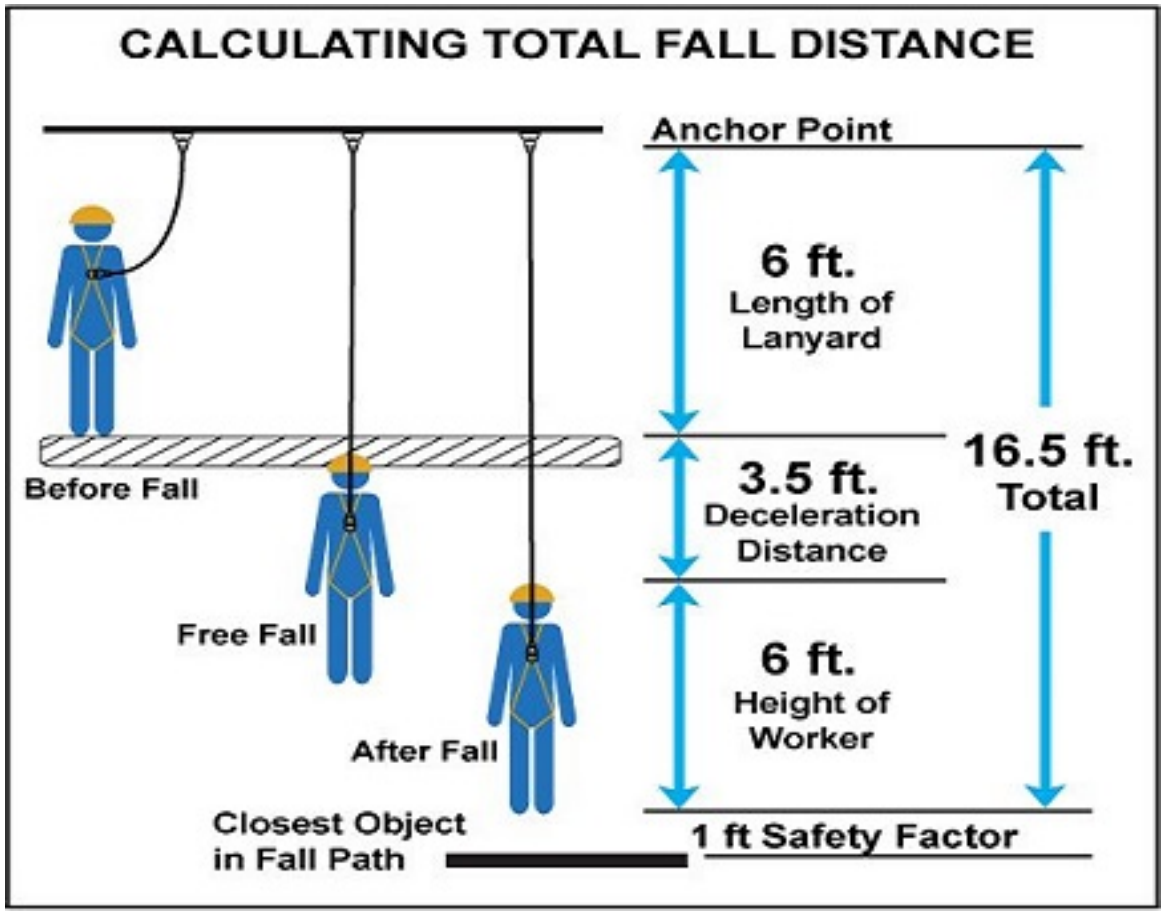
The maximum free fall distance is not to exceed 6 feet. Consideration must be given to the total fall distance. The following factors can affect total fall distance:

- Length of connecting means (i.e., lanyard length, use of carabiners, snaphooks, etc.)
- Position and height of anchorage relative to work platform/area (always keep above the head whenever possible).
- Position of attachment and D-ring slide on the full body harness.
- Deployment of shock absorber (max. 42").
- Movement in the lifeline.
- Initial position of worker before free fall occurs (i.e., sitting, standing, etc.)

Calculating Total Fall Distance

It is the total length of shock absorbing lanyard + height of the person + the location distance of the D-ring from the work surface or platform.

Always allow a minimum of 6 feet of clearance above the ground, equipment, etc., at the end of the fall from the fall arrest point.



Engineered Lifeline

Lifeline systems must be designed and approved by an engineer or qualified person. Lifeline systems must be engineered to have appropriate anchorages, strength of line designed to hold X number of individuals connected to it, line strength to aid in the arrest of a fall, and durability to hold a fallen employee(s) suspended until a rescue can occur.

Warning Line System

All work on a flat roof greater than 50 feet wide, which is performed 6 feet or further back from the edge of the roof can be completed by installing a Warning Line and using a safety monitor. If the roof is flat and less than 50 feet wide, a competent person safety monitor may be used. Warning Lines will consist of the following:

- Will be erected not less than 6 feet from the edge of the roof.
- Be constructed of stationary posts made of wood or metal.
- Wire or nylon rope and "Caution" tape will be strung from post to post and must be able to withstand 16 pounds of force.
- The warning line will guard the entire perimeter of the roof where work is being performed.

If an employee must access an area within 6 feet of the roof's edge, for reasons other than exiting the roof via a ladder or fixed industrial ladder, another employee must monitor that individual and warn him/her of any dangers. If another employee is not available to act as a safety monitor, then the employee must don a full body harness and attach a fall restraint lanyard to an anchor point to prevent reaching the edge of the roof.

Inspection of Fall Protection Systems

It will be the responsibility of the PW Safety Committee Chair Person or his/her designee to follow through with all annual inspections as described below (see appendix 1-4). All components will be inspected before each use:

The following criteria will be utilized to maintain all equipment in good working condition.

Full Body Harnesses

- Closely examine all of the nylon webbing to ensure there are no burn marks, which could weaken the material.
- Verify there are no torn, frayed or broken fibers, pulled stitches, or frayed edges anywhere on the harness.
- Examine the D-ring for excessive wear, pits, deterioration, or cracks.
- Verify that buckles are not deformed, cracked, and operate correctly.
- Check to see that each grommet (if present) is secure and not deformed from abuse or a fall.
- The harness should never have additional punched holes. All rivets should be tight and not deformed.
- Check tongue/straps for excessive wear from repeated buckling.
- Storage will consist of hanging in an enclosed cabinet, to protect from damage.
- All harnesses that are involved in a fall will be destroyed.

Lanyards/Shock Absorbing Lanyards

- Check lanyard material for cuts, burns, abrasions, kinks, knots, broken stitches and excessive wear.
- Inspect the snaphooks for distortions in the hook, locks, and eye.
- Check carabiner for excessive wear, distortion, and lock operation.
- Ensure that all locking mechanisms seat and lock properly. Once locked, locking mechanism should prevent hook from opening.
- Visually inspect shock absorber for any signs of damage, paying close attention to where the shock absorber attaches to the lanyard.
- Verify that points where the lanyard attaches to the snaphooks are free of defects.
- Storage will consist of hanging in an enclosed cabinet, to protect from damage.
- All lanyards that are involved in a fall will be destroyed.

Snaphooks/Carabiners

- Inspect snaphook for any hook and eye distortion.
- Verify there are no cracks or pitted surfaces.
- The keeper latch should not be bent, distorted, or obstructed.
- Verify that the keeper latch seats into the nose without binding.
- Verify that the keeper spring securely closes the keeper latch.
- Test the locking mechanism to verify that the keeper latch locks properly.
- All snaphooks and carabiners involved in a fall will be destroyed.

Self-Retracting Lanyards/Lifelines

- Visually inspect the body to ensure there is no physical damage to the body.
- Make sure all nuts and rivets are tight.
- Make sure the entire length of the nylon strap/wire rope is free from any cuts, burns, abrasions, kinks, knots, broken stitches/strands, excessive wear and retracts freely.
- Test the unit by pulling sharply on the lanyard/lifeline to verify that the locking mechanism is operating correctly.
- If the manufacturer requires, make certain the retractable lanyard is returned to the manufacturer for scheduled annual inspections.
- Inspect for proper function after every fall.

Articulating Man Lift

- Inspect/service per manufacturer guidelines. Forklift, scissors lifts, and safety of the forklift basket will be checked per the same schedule.

Guardrails

- Temporary systems – Daily visual inspection will be completed by a competent person.
- Temporary systems – Weekly, a complete structural inspection will be completed by a competent person.
- Permanent systems – Annual structural inspections will be completed by a competent person with future frequency of inspection defined based on conditions/controls present.

Storage and Maintenance of Fall Protection Equipment

- Never store the personal fall arrest equipment in the bottom of a toolbox, on the ground, or outdoors exposed to the elements (i.e., sun, rain, snow, etc.).
- Hang equipment in a cool, dry location in a manner that retains its shape.
- Always follow manufacturer recommendations for inspections.
- Clean with a mild, nonabrasive soap and hang to dry.
- Never force dry or use strong detergents in cleaning.
- Never store equipment near excessive heat, chemicals, moisture, or sunlight.
- Never store in an area with exposures to fumes or corrosive elements.
- Avoid dirt or other types of build-up on equipment.
- Never use this equipment for any purpose other than personal fall arrest.
- Once exposed to a fall, remove equipment from service immediately.

Training

All employees who may be exposed to fall hazard are required to receive training on how to recognize such hazards, how to minimize their exposure to them, and the required inspection and maintenance of all fall protection equipment utilized by their departments. Employees shall receive training as soon after employment as possible, and before they are required to work in areas where fall hazards exist. Employees may require retraining in some instances i.e. – Changes in the workplace, Changes in type of fall protection used, Shortcomings in employee's knowledge demonstrated either through use (or lack thereof) of fall protection equipment or through conversation with their supervisor. A record of employees who have received training and training dates shall be maintained by the Public Works Administrative Assistant (see appendix 5).

All employees engaged in fall protection will be trained and have the knowledge to:

- Recognize the fall hazards of/on their job sites.
- Understand the hazards associated with working near fall hazards.
- Work safely in hazardous areas by utilizing appropriate fall protection measures.
- Understand and follow all components of this fall protection program.
- Identify and understand the enforceable DOSH standards and ANSI standards that pertain to fall protection.

Enforcement

- All employees are subject to discipline per City of Oak Harbor Employee Manual section 3.02.
- Documentation of any violations will be kept in the staff member's personnel file.

Rescue Procedures

At the beginning of any work activity where fall protection is an issue, a Fall Protection Work Plan (FPWP) (see appendix 7) will be completed by the Division Lead Worker. Rescue plans must be identified and discussed prior to work with all employees in case of a fall.

Rescue Methods/Options of Fallen Personnel

In the unlikely event that a fall arrest occurs on-site, 911 will be called immediately and Fire Dept. personnel will assess the situation before any rescue is attempted unless the employee is in imminent danger and needs life saving measures.

Communication Issues

In the event of a fall, the following people will be notified as soon as possible.

- Fire Department and emergency medical services.
- Manager/Supervisor.
- Safety officer/coordinator.

All employees involved in a fall arrest or fall will be sent immediately for a medical evaluation to determine the extent of injuries, if any.

Fall Investigation

All fall investigations will be conducted by the Public Works safety Committee Chair or appointee and a Lead Worker from a division **not** involved in the incident.

The following documentation will be completed as part of the fall investigation:

1) Interviews with staff and witnesses.
2) Employee injury/accident report.
3) Supervisor injury/accident report.

Program Evaluation

This fall protection program will be evaluated annually to determine the effectiveness. The following criteria will be used along with **page 19 (appendix 6)** of this document to evaluate its performance:

1) Accident reports
2) Number of accidents.
3) Management/staff compliance with program components.
4) Periodic on-site audits.
5) Staff feedback and interviews.

Contractors

All outside contractors working in or on the premises of the City of Oak Harbor will be required to follow the guidelines set forth in this fall protection program. Contractors in the pre-job meeting will be informed of these requirements as well as the on-site construction rules that apply.

Full Body Harness

Annual Inspection Checklist

Harness Model/Name: _____

Serial Number: _____ Lot Number: _____

Date of Manufacture: _____ Date of Purchase: _____

Comments: _____

_____

_____

General Factors	Accepted/Rejected	Supportive Details/Comments
1) **Hardware:** includes D-rings, buckles, keepers and back pads. Inspect for damage, distortion, sharp edges, burrs, cracks and corrosion.	Accepted Rejected	
2) **Webbing:** Inspect for cuts, burns, tears, abrasions, frays, excessive soiling and discoloration.	Accepted Rejected	
3) **Stitching:** Inspect for pulled or cut stitches.	Accepted Rejected	
4) **Labels:** Inspect, making certain all labels are securely held in place and are legible.	Accepted Rejected	
5) Other:	Accepted Rejected	
6) Other:	Accepted Rejected	
Overall Disposition:	Accepted Rejected	**Inspected By:** **Date Inspected:**

Lanyards

Annual Inspection Checklist

Lanyard Model/Name: _____

Serial Number: _____ Lot Number: _____

Date of Manufacture: _____ Date of Purchase: _____

Comments: _____

_____

_____

General Factors	Accepted/Rejected	Supportive Details/Comments
1) **Hardware:** (includes snaphooks, carabiners, adjusters, keepers, thimbles and D-rings) Inspect for damage, distortion, sharp edges, burrs, cracks, corrosion and proper operation.	Accepted Rejected	
2) **Webbing:** Inspect for cuts, burns, tears, abrasions, frays, excessive soiling and discoloration.	Accepted Rejected	
3) **Stitching:** Inspect for pulled or cut stitches	Accepted Rejected	
4) **Synthetic Rope:** Inspect for pulled or cut yarns, burns, abrasions, knots, excessive soiling and discoloration.	Accepted Rejected	
5) **Energy Absorbing Component:** Inspect for elongation, tears and excessive soiling.	Accepted Rejected	
6) **Labels:** Inspect, making certain all labels are securely held in place and are legible.	Accepted Rejected	
Overall Disposition:	Accepted Rejected	**Inspected By:** **Date Inspected:**

Snaphooks/Carabiners

Annual Inspection Checklist

Hook/Carabiner Model/Name: _____

Serial Number: _____ Lot Number: _____

Date of Manufacture: _____ Date of Purchase: _____

Comments: _____

_____

_____

General Factors	Accepted/Rejected	Supportive Details/Comments
1) **Physical Damage:** Inspect for cracks, sharp edges, burrs, deformities and locking operations.	Accepted Rejected	
2) **Excessive Corrosion:** Inspect for corrosion, which affects the operation and/or the strength.	Accepted Rejected	
3) **Markings:** Inspect and make certain marking(s) are legible.	Accepted Rejected	
4) Other:	Accepted Rejected	
5) Other:	Accepted Rejected	
6) Other:	Accepted Rejected	
Overall Disposition:	Accepted Rejected	**Inspected By:** **Date Inspected:**

Self-Retracting Lanyard/Lifeline

Annual Inspection Checklist

Self-Retracting Lanyard/Lifeline Model/Name: _____

Serial Number: _____ Lot Number: _____

Date of Manufacture: _____ Date of Purchase: _____

Department/Location: _____

Comments: _____

_____

General Factors	Accepted/Rejected	Supportive Details/Comments
1) **Impact Indicator:** Inspect indicator for activation (rupture of red stitching, elongated indicator, etc.).	Accepted Rejected	
2) **Screws/Fasteners:** Inspect for damage and make certain all screws and fasteners are tight.	Accepted Rejected	
3) **Housing:** Inspect for distortion, cracks and other damage. Inspect anchoring loop for distortion or damage.	Accepted Rejected	
4) **Lanyard/Lifeline:** Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration. (See impact indicator section.)	Accepted Rejected	
5) **Locking Action:** Inspect for proper lock-up of brake mechanism.	Accepted Rejected	
6) **Retraction/Extension:** Inspect spring tension by pulling lanyard out fully and allowing to retract fully (lifeline must be taut with no slack).	Accepted Rejected	
7) **Hooks/Carabiners:** Inspect for physical damage, corrosion, proper orientation and markings.	Accepted Rejected	
8) **Labels:** Inspect, making certain all labels are securely held in place and are legible.	Accepted Rejected	
Overall Disposition:	Accepted Rejected	**Inspected By:** **Date Inspected:**

Appendix 5

Safety Training Record

Training Topic: _____

Instructor Name: _____

Date of Training: _____

Employee Name	Location

Appendix 6

Fall Protection Program Annual Evaluation

Evaluation Date: _____

Evaluation Team:

Name	Title	Department
_____	_____	_____
_____	_____	_____
_____	_____	_____

List injuries or near misses attributable to failure of program or failure to follow program:

_____
_____
_____
_____

Recommendations for additions to procedures with explanation for each:

_____
_____
_____
_____

Recommendations for deletions of procedures with explanation for each:

_____
_____
_____
_____
_____

Recommendations for modifications to procedures with explanation for each:

_____
_____
_____
_____

Appendix 7

City of Oak Harbor Fall Protection Work Plan (FPWP)

Site Address _____ Date _____

(If additional space is needed, use the back of this sheet)

Identify all fall hazards 10' or more above the ground or lower level (check all that apply)

__ open-sided walking/working surfaces (i.e. roofs, open-sided floors)
__ open-sided ramps, runways, platforms
__ floor openings
__ wall openings
__ skylight openings
__Trenches
__ Surfaces that do not meet the definition of a walking/working surface (i.e. top plate)

****Walking/working surface** = any area whose dimensions are 45 inches or greater in all directions, through which workers pass or conduct work.

Methods of fall protection to be used: **LSO = <u>Low Slopes Only</u> (low slopes = 4 x 12 or less)**

__ Guardrail system
__ Warning line **(LSO)**
__ Warning line w/safety monitor **(LSO)**
__ Catch platform
__ Safety net
__ Personal fall arrest system
__ Personal fall restraint system
__ Positioning device system
__ Covers (floor holes & openings)
__ Horizontal life lines
__Vertical life line and rope grab
__ Appropriate anchors for system used

Other methods of fall protection selected:

__ Boom lift
__ Scissor lift
__ Scaffold w/guardrail
__Other: _____

Describe procedures for assembly, maintenance, inspection, disassembly of fall protection system to be used.

_____
_____

Describe procedures for handling, storage, and securing tools, equipment, and materials.

_____
_____

Describe methods of overhead protection for workers who may be in, or pass through work area.

_____
_____

Describe methods to be implemented for prompt, safe removal of injured worker(s).

_____
_____

Employees who received fall protection training on the above site specific fall protection work plan.

Name (print)	**Date**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Name & title of person who provided training: _____