C3 Inspection Services

Fall Protection Program

29 CFR 1926.500 *Scope, Application, and Definitions Applicable to This Subpart*
29 CFR 1926.501 *Duty to Have Fall Protection*
29 CFR 1926.502 *Fall Protection Systems Criteria and Practices*
29 CFR 1926.503 *Training Requirements*
29 CFR 1926 Subpart M, App A *Determining Roof Widths*
29 CFR 1926 Subpart M, App B *Guardrail Systems*
29 CFR 1926 Subpart M, App C *Personal Fall Arrest Systems*
29 CFR 1926 Subpart M, App D *Positioning Device Systems*

OVERVIEW

One of the most serious hazards faced by our employees is falls from heights. Our Fall Protection Program has been developed to prevent injury from falls of six (6) feet or more from a walking/working surface to a lower level, to prevent objects falling from above and striking persons below, and to prevent job site persons from falling into holes.

Within the context of this program, the term “fall hazard” does not refer to tripping and falling which is addressed in our general safety & health program, nor does it apply to falling off a ladder or scaffold. Scaffold and ladder safety is addressed within its own program.

A copy of our Fall Protection **Program** can be found readily accessible to our employees on appropriate job sites.

A copy of our Fall Protection **Plan** will be found on every applicable job site.

On all job sites where fall hazards exist, there will be at least one competent person who has the training and ability to identify fall hazards and the authority to ensure that proper fall protection systems are properly implemented.

The following areas of concern are addressed by this Program:

a. the need to know where fall protection is required.
b. selection of fall protection systems which are appropriate for given situations.
c. construction and installation of safety systems.
d. supervision of employees.
e. implementation of safe work procedures.
f. training in selection, use, and maintenance of fall protection systems.

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Our Fall Protection Program may be reviewed at any time by our employees. Should a question arise concerning this Program, personnel are encouraged to consult with their supervisor or our Fall Protection Program Administrator.

DUTIES OF THE PROGRAM ADMINISTRATOR

The Fall Protection Program Administrator's duties include:

a. training of personnel.

b. maintenance of training records.

c. random, unannounced job site inspections to assure compliance with both OSHA standards and company safety policies.

d. resolution of specific problems that may present themselves regarding a particular job site situation.

e. designating a competent (by training or experience) person at each applicable job site who will ensure:

1. a copy of our fall protection program/plan is readily accessible on appropriate job sites.
2. subcontractors with whom we work are appropriately trained in fall protection.
3. a written certification record has been prepared documenting that employees who have potential exposure to fall hazards at the job site have received the required training in protection.
4. the fall protection system(s) utilized at the job site are appropriate for the hazard(s) present.
5. that, before any work is initiated, the walking/working surfaces at the job site are capable of supporting both our personnel and equipment.

The Fall Protection Program Administrator will be familiar with all applicable standards and will keep abreast of developments in the field of fall protection.

PRE-PROJECT PLANNING

Fall protection requires a joint effort by our personnel and the specialty subcontractors who may be working with us to identify work situations in which fall hazards exist, determine the most appropriate fall protection system to be utilized, and to ensure that all persons understand the proper methods of utilizing the selected fall protection systems. A pre-construction survey by a competent person will often provide the information needed to make these determinations.

Fall protection system requirements may change during a project and the competent person on site will ensure that fall protection is maintained at all

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times. Care will be taken to assure that load limits are not exceeded on walking/working surfaces and attachment points and hardware is capable of withstanding (with the appropriate safety factor) the potential forces that may be generated during an actual fall incident.

Fall protection hardware and equipment owned, rented, or leased will meet the requirements of ANSI, ASTM, or OSHA and it is assumed that the manufacturer's technical specifications and capabilities are accurate.

From the very inception of a potential project (pre-bid) to completion, fall protection needs and costs will be factored in.

DEFINITIONS

There are a number of terms and phrases, not common in everyday life, which must be understood to grasp the thrust of this Program. For those employees directly involved with this Program or affected by it, there are specific requirements and procedures which would be meaningless without an understanding of the "language" of our Fall Protection Program. Words used within the definitions which are themselves defined are printed in bold italic.

ANCHORAGE: a secure point of attachment for ***lifelines***, ***lanyards*** or ***deceleration devices***.

BODY HARNESS: straps which may be secured about the employee in a manner that will distribute the fall arrest over at least the thighs, pelvis, waist, chest, and shoulders with means for attaching it to other components of a ***personal fall arrest system***.

BUCKLE: any device for holding the ***body harness*** closed around the employee's body.

CARABINER: an oval metal ring with a snap link used to fasten a rope to the piton [a spike (attachment) with an eye to which a rope can be secured.]

CFR: Code of Federal Regulations.

COMPETENT PERSON: one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees; and who has authorization to take prompt corrective measures to eliminate them.

CONNECTOR: a device which is used to couple (connect) parts of the ***personal fall arrest system*** and ***positioning device systems*** together. It may be an independent component of the system, such as a ***carabiner***, or it may be an integral component of part of the system (such as a ***buckle*** or dee-ring sewn into a self-retracting ***lanyard***).

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CONTROLLED ACCESS ZONE (CAZ): an area in which certain work (e.g., ***overhand bricklaying***) may take place without the use of ***guardrail systems***, ***personal fall arrest systems***, or safety net systems; access to the zone is controlled.

DANGEROUS EQUIPMENT: equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units) which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

DECELERATION DEVICE: any mechanism, such as a ***rope grab***, rip-stitch ***lanyard***, specially-woven ***lanyard***, tearing or deforming ***lanyards***, automatic self-retracting ***lifelines***/***lanyards***, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

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

EQUIVALENT: alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

FAILURE: load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

FREE FALL: the act of falling before a ***personal fall arrest system*** begins to apply force to arrest the fall.

FREE FALL DISTANCE: the vertical displacement of the fall arrest attachment point on the employee's ***body harness*** between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes ***deceleration distance***, and ***lifeline***/***lanyard*** elongation, but includes any ***deceleration device*** slide distance of ***self-retracting lifeline/lanyard*** extension before they operate and fall arrest forces occur.

GUARDRAIL SYSTEM: a barrier erected to prevent employees from falling to ***lower levels***.

HOLE: a gap or void 2 inches (5.1 cm) or more in its least dimension, in a floor, ***roof***, or other ***walking/working surface***.

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INFEASIBLE: it is impossible to perform the construction work using a conventional fall protection system (i.e., ***guardrail system***, safety net system, or ***personal fall arrest system***) or that it is technologically impossible to use any one of these systems to provide fall protection.

LANYARD: a flexible line of rope, wire rope, or strap which generally has a ***connector*** at each end for connecting the ***body harness*** to a ***deceleration device***, ***lifeline***, or ***anchorage***.

LEADING EDGE: the edge of a floor, ***roof***, or formwork for a floor or other ***walking/working surface*** (such as the deck) which changes location as additional floor, ***roof***, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

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), and which serves as a means for connecting other components of ***personal fall arrest system*** to the ***anchorage*.**

LOW-SLOPE ROOF: a ***roof*** having a slope less than or equal to 4 in 12 (vertical to horizontal).

LOWER-LEVELS: those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

MECHANICAL EQUIPMENT: all motor or human propelled wheeled equipment used for ***roofing work***, except wheelbarrows and mopcarts.

OPENING: a gap or void 30 inches or more high and 18 inches or more wide, in a wall or partition through which employees can fall to a ***lower level***.

OVERHAND BRICKLAYING AND RELATED WORK: the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

PERSONAL FALL ARREST SYSTEM: a system used to arrest an employee in a fall from a working level. It consists of an ***anchorage***, ***connectors***, a ***body harness*** and may include a ***lanyard***, ***deceleration device***, ***lifeline***, or suitable combination of these. **The use of body belts**

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for fall arrest is prohibited.

POSITIONING DEVICE SYSTEM: a *body belt* or ***body harness*** system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

QUALIFIED PERSON: one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

ROPE GRAB: a ***deceleration device*** which travels on a ***lifeline*** and automatically, by friction, engages the ***lifeline*** and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

ROOF: the exterior surface on the top of a building. This does not include floors or formworks which, because a building has not been completed, temporarily become the top surface of a building.

ROOFING WORK: the hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the ***roof*** deck.

SAFETY-MONITORING SYSTEM: a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

SELF-RETRACTING LIFELINE/LANYARD: a ***deceleration device*** containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

SNAPHOOK: a ***connector*** comprised of a hook-shaped member with a normally closed keeper of similar arrangement which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snaphooks are generally one of two types:

(1) the locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection; or

(2) the non-locking type with a self-closing keeper which remains closed until pressed open for connection or disconnection. <u>The use of a non-locking snaphook as part of ***personal fall arrest systems*** and ***positioning device systems*** is prohibited.</u>

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STEEP ROOF: a ***roof*** having a slope greater than 4 in 12 (vertical to horizontal).

TOEBOARDS: a low protective barrier that will prevent the fall of material and equipment to ***lower levels*** and provide protection from falls for personnel.

UNPROTECTED SIDES AND EDGES: any side or edge (except at entrances to points of access) of a ***walking/working surface***, e.g., floor, ***roof***, ramp, or runway where there is no wall or ***guardrail system*** at least 39 inches high.

WALKING/WORKING SURFACE: any surface, whether horizontal or vertical, on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runway, formwork and concrete reinforcing steel; not including ladders, vehicles, or trailers on which employees must be located in order to perform their job duties.

WARNING LINE SYSTEM: a barrier erected on a ***roof*** to warn employees that they are approaching an unprotected ***roof*** side or edge, and which designates an area in which ***roofing work*** may take place **without** the use of guardrail, ***body belt***, or safety net systems to protect employees in the area.

WORK AREA: that portion of a ***walking/working surface*** where job duties are being performed.

WHERE FALL PROTECTION IS REQUIRED

The "key" distance is six (6) feet. All employees must be aware that if there is a possibility of falling six (6) feet or more at least one (1) fall protection system will be implemented. Further, protection from being struck by falling objects from above will be provided on all job sites.

All areas identified by OSHA are included because, over time, most of these areas will present themselves on job sites even if the exposures are the result of another contractor's work.

Below listed are specific situations where fall protection systems will be utilized.

UNPROTECTED SIDES AND EDGES:

Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

LEADING EDGES:

Each employee who is constructing a leading edge 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems.

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HOIST AREAS:

Each employee in a hoist area shall be protected from falling 6 feet or more to lower levels by guardrail systems or personal fall arrest systems.

If a guardrail system is utilized in a hoist area and portions of the system are removed to facilitate the hoisting operation, and an employee must lean through the access opening or out over the edge of the access opening, that employee must be protected by a fall arrest system.

HOLES:

Each employee on walking/working surfaces shall be protected from falling through holes (including skylights) more than 6 feet above lower levels by personal fall arrest systems, covers, or guardrail systems.

a. Each employee on a walking/working surface shall be protected from tripping in or stepping into or through holes (including skylights) **(regardless of height)** by covers.

b. Each employee on a walking/working surface shall be protected from objects falling through holes **(regardless of height)** by covers.

FORMWORK and REINFORCING STEEL:

Each employee on the face of formwork or reinforcing steel shall be protected from falling 6 feet or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems.

RAMPS, RUNWAYS, and OTHER WALKWAYS:

Each employee on ramps, runways, and other walkways shall be protected from falling 6 feet or more to lower levels by guardrail systems.

EXCAVATIONS:

Each employee at the edge of an excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barriers.

Further, each employee at the edge of a well, pit, shaft, and similar excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers.

DANGEROUS EQUIPMENT:

Each employee **less than 6 feet** above dangerous equipment shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards.

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Each employee **6 feet or more** above dangerous equipment shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

OVERHAND BRICKLAYING AND RELATED WORK:

Each employee performing overhand bricklaying and related work 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or shall work in a controlled access zone.

Each employee performing overhand bricklaying and related work who is required to reach more than 10 inches below the level of the walking/working surface on which he/she is working shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

ROOFING WORK ON LOW-SLOPED ROOFS:

Each employee engaged in roofing activities on low-sloped roofs with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems or a combination of a warning line system and a safety net system or a warning line system and a safety monitoring system.

NOTE: On roofs 50 feet or less in width, the use of a safety monitoring system alone (without the warning line system) is permitted.

STEEP ROOFS:

Each employee on a steep roof with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.

PRECAST CONCRETE ERECTION:

Each employee, engaged in the erection of precast concrete members (including, but not limited to the erection of wall panels, columns, beams, and floor and roof "tee") and related operations such as grouting of precast concrete members, who is 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems.

RESIDENTIAL CONSTRUCTION:

Each employee engaged in residential construction activities 6 feet or more above lower levels shall be protected by guardrail systems, safety net systems, or personal fall arrest systems.

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WALL OPENINGS:

Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface, shall be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

WALKING/WORKING SURFACES NOT OTHERWISE ADDRESSED:

Each employee on a walking/working surface 6 feet or more above a lower level that is not addressed in the preceding fourteen (14) categories shall be protected from falling by a guardrail system, a safety net system, or a personal fall arrest system except when:

a. working on scaffolds fall protection requirements are covered by subpart L of 29 CFR 1926.

b. working on certain cranes and derricks fall protection requirements are covered by subpart N of 29 CFR 1926.

c. performing steel erection work in buildings fall protection requirements are covered by subpart R of 29 CFR 1926.

d. working on certain types of equipment used in tunneling operations fall protection requirements are covered by subpart S of 29 CFR 1926.

e. engaged in the construction of electric transmission and distribution lines, equipment fall protection requirements are covered by subpart V of 29 CFR 1926.

f. working on stairways and ladders fall protection requirements are covered by subpart X of 29 CFR 1926.

NOTE: On multi-employer work sites, employees of all contractors and subcontractors must understand the fall protection hazards that exist and be aware of the various methods of fall protection even if they are NOT directly exposed to fall hazards in their particular work area. For example, a contractor may have a controlled access zone in place and all persons on the job site, regardless of their employer, must understand the importance of remaining outside that CAZ.

PRE-CONSTRUCTION SURVEY

Prior to the initiation of any construction project, the job site will be surveyed by a competent/qualified person to determine:

a. if fall protection systems will be required.

b. if fall hazards exist, the types of conventional fall protection systems to be utilized.

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1. particular attention will be given to anchorage points, location of warning lines, etc..

c. rescue procedures to be used if a fall actually occurs.

d. the load-carrying capabilities of the walking/working surface.

e. assuring that all personnel utilizing a fall protection system have training in that system.

This survey may be made without the use of fall protection because no work will be accomplished during this survey and installing fall protection systems would create a greater hazard.

If it is determined that certain areas within the overall worksite have fall hazards that cannot be addressed with conventional fall protection systems (those areas being limited to leading edge work, residential construction work, and precast concrete work), **then** a Fall Protection Plan must be prepared to specifically protect employees from these hazards.

FALL PROTECTION SYSTEMS

GUARDRAIL SYSTEM:

A guardrail system is a physical barrier erected to prevent employees from falling to lower levels.

Specific guardrail systems criteria are found in 29 CFR 1926.502(b) and we will erect guardrail systems that comply with the cited criteria.

The main advantage of a guardrail system is that it is a “passive” system which, once installed, requires no employee involvement in its function. A guardrail will stop an employee who inadvertently walks into it.

A guardrail system is an acceptable fall protection system in each of the fifteen (15) OSHA designated work areas save one (1) - “Formwork and Reinforcing Steel.”

GUARDRAIL SYSTEMS AT HOISTING AREAS:

When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section shall be placed across the access opening between the guardrail sections when hoisting operations are not taking place.

NOTE: If a portion of the guardrail system is removed at a hoisting area to facilitate the hoisting operations **and** an employee must lean out over the opening, then that employee must be protected by a personal fall arrest system. In this instance it is important to remember that the personal fall arrest system may not be attached to the guardrail system.

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GUARDRAIL SYSTEMS AT HOLES:

Guardrail systems used at holes shall be erected on all unprotected sides of the edges of the hole.

When the hole is to be used for the passage of materials, the hole shall not have more than two sides provided with removable guardrail sections to allow the passage of materials. When the hole is not in use, it shall be closed over with a cover **or** protected with a guardrail system on all unprotected sides or edges.

NOTE: Guardrails need not be erected around holes while employees are working at the hole, passing materials through the hole, etc.. When work is completed around the hole, the hole must be protected by guardrails on all sides of the hole or by covers.

Guardrail systems used around holes which are used as points of access (such as ladderways) will be provided with a gate or be offset so that a person cannot walk directly into the hole.

GUARDRAIL SYSTEMS ON RAMPS AND RUNWAYS:

Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge. Ramps, runways, and other walkways on which employees need protection from falling 6 feet or more to a lower level must be protected by a guardrail system and only a guardrail system.

PERSONAL FALL ARREST SYSTEM:

A personal fall arrest system is, as the name implies, a means of safety decelerating a falling body before a lower level is hit. The three (3) main components of a personal fall arrest system are the:

a. anchorage point.
b. lanyard.
c. body harness.

NOTE: Body belts **will not** be used in a personal fall arrest system.

Specific personal fall arrest systems criteria are found in 29 CFR 1926.502(d) and we will use personal fall arrest systems that comply with the cited criteria.

The tie-off attachment point must be at or above the connection point on the harness to prevent additional free fall distance.

As are guardrails, personal fall arrest systems are “passive” and require no employee involvement once they are properly rigged.

For all practical purposes, dee-rings and locking type snaphooks shall have a minimum tensile strength of 5,000 pounds and lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds. Anchorages must be capable of supporting 5,000 per employee. Anchorages used in personal

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fall arrest systems must be independent of any anchorage being used to support or suspend platforms.

NOTE: Knots in a rope lanyard or lifeline can reduce its strength by as much as 50% and having a lanyard go over or around sharp edges can completely destroy its effectiveness.

With the exception that harnesses and components may be used as positioning device systems, personal fall arrest system components may not be used for purposes other than that for which they were designed.

Positioning device system components shall be inspected prior to each use for wear, damage, and other deterioration and defective components shall be removed from service.

Employees should be aware that should a fall occur and self rescue is not possible, equipment and personnel will be available for prompt rescue. The particular hazard that §1926.502(d)(20) addresses is being suspended by the fall arrest system after a fall. The word "prompt" requires that rescue be performed quickly -- in time to prevent serious injury to the worker. §1926.502(d)(20) does not require that a written rescue plan be prepared or that a preplanning event be held.

Should a personal fall arrest system actually be used to stop a fall, it will be removed from service and not used again until inspected and determined to be undamaged and suitable for reuse by a competent person.

SAFETY NET SYSTEM:

Specific safety net systems criteria are found in 29 CFR 1926.502(c).

Safety nets will be installed as close as practicable under the walking/ working surface on which employees are working and in no case shall they be more than 30 feet below such level.

Safety nets shall be inspected at least once per week and after an occurrence which could affect the integrity of the system. Defective nets will not be used.

All items that have fallen in a safety net will be removed as soon as possible and at least before the next work shift.

Safety nets will be drop-tested at the job site after initial installation and before being used as a fall protection system; whenever relocated; after major repair; and at six-month intervals if left in one place.

NOTE: If it is demonstrably unreasonable to perform a drop-test, a designated competent person shall prepare a certification in accordance with 29 CFR 1926.502(c)(4)ii.

WARNING LINE SYSTEM:

A warning line system is a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which

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designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

A warning line system is to be used only during roofing work on low-sloped roofs over 50-feet in width with unprotected sides and edges 6-feet or more above lower levels (on a simple rectangular roof, width is the lesser of the two primary overall dimensions. This is also the case with roofs which are sloped toward or away from the roof center). Most importantly, warning line systems must be used in conjunction with either a guardrail system; a safety net system; a personal fall arrest system; or a safety monitoring system.

NOTE: In the above scenario, either a guardrail system, a safety net system, or a personal fall arrest system alone provides adequate fall protection.

Specific warning line systems criteria are found in 29 CFR 1926.502(f) and we will use warning line systems that comply with the cited criteria.

As a general rule, warning line systems will be used in conjunction with a safety monitoring system.

A warning line, made of ropes, wires, chains and supporting stanchions will be flagged at no more than 6-feet intervals with high-visibility material. As the name implies, this line will only "warn" employees that they are approaching an unprotected side or edge. The horizontal resisting force of a warning line is 16 pounds versus 200 pounds for a guardrail system.

No personnel are allowed in the area between a roof edge and a warning line unless they are performing roofing work in that area.

Mechanical equipment on roofs shall only be used in areas that are protected by either a warning line system, a guardrail system, or a personal fall arrest system.

The warning line shall be erected around all sides of the roof work area not less than 6-feet from the roof edge unless mechanical equipment is being used. In that case, the warning line shall be erected not less than 6-feet from the roof edge which parallels the mechanical operation and not less than 10 feet from the roof edge which is perpendicular to the direction of the mechanical operation.

Points of access, material handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines. When the aforementioned areas are not in use, the warning line will be adjusted to completely seal off the work area so that a person cannot inadvertently enter the area.

SAFETY MONITORING SYSTEM:

Specific safety monitoring systems criteria are found in 29 CFR 1926.502(h) and we will use safety monitoring systems that comply with the cited criteria.

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A safety monitoring system used in conjunction with a warning line system is not considered a “passive system” because it takes active employee involvement and, as such, both the Safety Monitor and the employee(s) being monitored must be alert for fall hazards.

A competent person will perform the duties of Safety Monitor. These duties include:

a. recognizing fall hazards,

b. warning the employee when it appears the employee is unaware of a fall hazard or is acting in an unsafe manner,

c. remaining on the same walking/working surface and within visual sighting of the employee being monitored, and

d. remaining close enough to communicate orally with the employee being monitored.

The Safety Monitor shall have no other responsibilities which could take the monitor’s attention from the monitoring function.

Only the employee engaged in roofing work on low-sloped roofs or an employee covered by a fall protection plan [29 CFR 1926.502(k)] is allowed in the area being protected by the Safety Monitor.

When a safety monitoring system is being used, mechanical equipment will not be used or stored in that controlled zone.

Of course, the employee being monitored is required to comply promptly with the fall hazard warnings from the Safety Monitor.

POSITIONING DEVICE SYSTEM:

A positioning device system consists of a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning. It is used during formwork and steel reinforcing.

Specific positioning device systems criteria are found in 29 CFR 1926.502(e) and we will use positioning device systems that comply with the cited criteria.

Positioning device systems must be inspected prior to each use for wear, damage, and other deterioration. Defective components must be removed from service. Components of positioning device systems must never be used for purposes other than that for which they were designed -- specifically fall protection and/or positioning on a vertical surface.

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CONTROLLED ACCESS ZONE (CAZ):

A controlled access zone is an area in which certain work activity may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.

Specific controlled access zone criteria are found in 29 CFR 1926.502(g). A controlled access zone will be created when appropriate.

Controlled access zones will only be used as part of a fall protection plan (reference 29 CFR 1926.502(k) and *Fall Protection Plan*, below) or when an employee is performing overhand bricklaying and related work. Persons performing overhand bricklaying or related work that requires reaching more than 10 inches below the walking/working surface may not be afforded fall protection by working in a controlled access zone.

Controlled access zones are work areas that have limited access to only authorized personnel by means of control lines or other means that restrict access.

COVERS:

Covers can prevent an employee from stepping into a hole, tripping over a hole, falling through a hole, or being injured by objects falling through a hole.

NOTE: When work is completed around a hole, the hole must be protected by guardrails on all sides of the hole or by covers.

Specific cover criteria are found in 29 CFR 1926.502(i) and we will use covers that comply with the cited criteria.

Covers must be capable of supporting, without failure, twice the weight of the employees, equipment, and/or materials that may be imposed upon them.

Covers, when used, must be secured to prevent accidental displacement by wind, equipment, or employees.

All covers must be color coded or marked with the word: “HOLE” or “COVER” to identify the hazard.

NOTE: The above does not apply to cast iron manhole covers or roadway steel grates.

Covers, and only covers, will be used on walking/working surfaces to protect employees from tripping or stepping into or through a hole (including skylights). This provision is **regardless of the height** of the hole above a lower surface.

Covers, and only covers, will be used to protect employees from objects falling through holes (including skylights). This provision is **regardless of the height** of the hole above a lower surface.

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PROTECTION FROM FALLING OBJECTS:

Specific protection from falling objects criteria are found in 29 CFR 1926.502(j) and we will use that criteria to protect our employees from falling objects.

Covers are to be used to protect employees from objects falling through holes (including skylights) from upper surfaces regardless of heights.

Toeboards, used to prevent objects from falling on employees on a lower level must be at least 3½ inches high with not more than a ¼ inch clearance between the toeboard and the walking/working surface. When tools, materials, or equipment are piled higher than the top edge of the toeboard, paneling or screening will be erected from the top of the toeboard to the appropriate mid or top rail of the guardrail system to provide adequate protection to employees below.

FALL PROTECTION PLAN

The foregoing Fall Protection Program is not a Fall Protection Plan per se. However, implementing the preceding guidelines for conventional fall protection systems coupled with certified formal and hands-on training will provide appropriate fall protection for our employees.

There may be occasions where conventional fall protection systems just will not work. OSHA has determined that these occasions will be limited to:

a. leading edge work.

NOTE: Leading edge work involves construction which moves the location of the edge forward (backward). Working at the edge of a walking/working surface (such as a roof) is not leading edge work - it is (roofing) work at an unprotected side or edge.

b. precast concrete construction work.

c. residential construction work.

The criteria for determination that conventional fall protection systems are infeasible are: 1) it is impossible to perform construction work using conventional fall protection systems, or 2) it is technologically impossible to use conventional fall protection systems. Inconvenience and cost are not acceptable considerations.

Specific Fall Protection Plan criteria are found in 29 CFR 1926.502(k) and, if necessary, a Fall Protection Plan will be completed that complies with the cited criteria.

Fall Protection Plans must be prepared by a qualified person and developed specifically for the site where the work is to be performed. All changes to the Plan must be approved by a qualified person.

NOTE: A qualified person is one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve

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problems relating to the subject matter, the work, or the project. OSHA has indicated that an employer may use the services of more than one qualified person to comply with these requirements as long as (1) those persons, collectively, are qualified to prepare the fall protection plan and approve any changes; and (2) the resulting plan complies with the applicable requirements of the standards.

Fall Protection Plans must be maintained at the job site and be up to date.

The implementation of the fall protection plan must be under the supervision of a competent person.

A Fall Protection Plan must document reasons why conventional fall protection systems are infeasible and/or offer a detailed explanation why conventional fall protection systems create a greater hazard in their use than non-use.

All measures taken to reduce or eliminate fall hazards (in lieu of conventional fall protection systems) such as the use of ladders or scaffolds shall be discussed.

In each area where a conventional fall protection system cannot be used, a safety monitoring system must be utilized that conforms with the requirements of 29 CFR 1926(h).

Either the names of the employees or some other means of employee identification (such as armbands or color coded hard hats) will be used to control access to the controlled access zone.

In the event an employee falls or a serious incident occurs, the circumstances will be investigated and changes to the Fall Protection Plan will be made to prevent a reoccurrence of a similar incident.

After completion of all work and after all fall protection systems have been removed, a competent/qualified person may survey the work areas for inspection purposes without the use of fall protection systems. Care will be taken to assure solid footing and focused attention to potential fall hazards.

There are only two (2) instances where employees may be exposed to fall hazards without the use of fall protection systems. Those times are: pre-construction activities (inspecting, investigating, or assessing the workplace) and post-construction activities. During these times, no actual construction work may take place.

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ACCIDENTS AND NEAR ACCIDENTS

Accidents and near accidents involving fall hazards will be investigated by the Fall Protection Program Administrator to determine the cause of the incident and a method of preventing a reoccurrence. Questions to be considered are:

a. Was the fall protection system selected appropriate for the hazard?
b. Was the system properly installed?
c. Was the person involved in the accident following proper procedures?
d. Were there contributing factors such as ice, wind, debris, etc.?
e. Is retraining or a change of the Fall Protection Plan required?

TRAINING/RETRAINING

Note: All training must be documented. Written certification records must be maintained showing the following: 1) who was trained, dates of training, signature of the qualified (competent) person providing the training, and the date it was determined that training was adequate.

Training, which must be certified, will include the following topics:

a. the nature of fall hazards in the work area.
b. the correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection to be used.
c. the use and operation of guardrail systems; personal fall arrest systems; safety net systems' warning line systems; safety monitoring systems' controlled access zones; and other protection to be used.
d. the role of the Safety Monitor and the role of the employee when a safety monitoring system is used.
e. the limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.
f. the correct procedures for handling and storage of equipment and materials and the erection of overhead protection.
g. the role of employees in fall protection plans.

Training will be conducted by competent person(s) using the below listed items as resource materials:

a. this Fall Protection Program.
b. the manufacturer's instruction manuals that come with fall protection equipment.
c. OSHA standards pertaining to fall protection which include 29 CFR 1926.500, 501, 502, and 503.
d. the competent person's work experiences.

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Retraining, which also must be documented, when any of the following are noted: 1) deficiencies in training, 2) work place changes, 3) fall protection systems or equipment changes that render previous training obsolete.

Changes in the workplace, types of fall protection systems and equipment will also necessitate retraining.

Only the latest Training Certificate will be kept on file.

FALL PROTECTION AT THE JOB SITE

A quick glance through this Fall Protection Program may leave the reader with the impression that fall protection requires an inordinate amount of attention to small details which, in practice, would render the fall protection provisions of subpart M, 29 CFR 1926 unworkable in real work situations.

The opposite is true. OSHA has gone to great lengths to make subpart M user friendly by incorporating performance-oriented criteria (as opposed to specification-oriented criteria) into their standards. Following a hazard assessment, we will select the most advantageous fall protection system that is compatible with our task needs and our protection requirements.

Lastly, while time, equipment, training, and money are devoted to fall protection systems which either physically prevent persons from falling from height, control the rate of deceleration during an actual fall, prevent objects from falling onto persons below, or warn personnel of restricted areas, we must never forget that it is important not to fall in the first place.

Accidents are more likely to occur as we become “adjusted” to working at height. Most slips, trips and falls are preventable. Proper footwear, wearing hard hats when there is a possibility of falling objects, cleaning up of debris, and paying attention to footing, hand holds, and edges is as important as the fall protection systems themselves.

RESIDENTIAL CONSTRUCTION

OSHA Instruction STD 3-01A

NOTE: OSHA Instruction STD 3.01A is a Fall Protection Compliance Guideline for residential construction. The procedures contained in this instruction will remain in effect until further notice or until completion of a new formal rule making effort addressing these concerns, whichever is earlier.

Reference paragraph (b)(13), 29 CFR 1926.501, *Residential Construction*, printed below:

> Each employee engaged in residential construction activities 6 feet (1.8 m) or more above lower levels shall be protected by guardrail systems, safety net system, or personal fall arrest system unless another provision in paragraph (b) of this section provides for an alternative fall protection

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measure. Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of paragraph (k) of 1926.502.

Note: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, the employer has the burden of establishing that it is appropriate to implement a fall protection plan which complies with 1926.502(k) for a particular workplace situation, in lieu of implementing any of those systems.

OSHA interprets “residential construction”, for the purposes of STD 3-01A, to apply to structures where the working environment and the construction material, methods, and procedures employed are essentially the same as those used for typical house (single-family dwelling) and townhouse construction. Discrete parts of a large commercial structure may come within the scope of this directive (for example, a shingled entranceway to a mall), but such coverage does not mean that the entire structure thereby comes within the terms of this directive.

OSHA STANDARD 3-0.1A:

From time to time, OSHA publishes a Directive which provides guidance for compliance for certain activities. Standard 3-0.1A provides interim guidance for alternate fall protection when dealing with the specific activities residential construction listed below:

a. Installation of floor joists, floor sheathing, and roof sheathing; erecting exterior walls; setting and bracing roof trusses and rafters.

b. Working on concrete and block foundation walls and related formwork.

c. This group consists of the following activities when performed in attics and on roofs: installing drywall, insulation, HVAC systems, electrical systems (including alarms, telephone lines, and cable TV), plumbing and carpentry.

d. Roofing work (removal, repair, or installation of weatherproofing roofing materials such as shingles, tile and tar paper).

Because the whole concept of Standard 3.01A is, as its title suggests, plain language compliance guidelines, it is printed in its entirety and it is self explanatory.

STD 3-0.1A - Plain Language Revision of OSHA Instruction STD 3.1, Interim Fall Protection Compliance Guidelines for Residential Construction

DIRECTIVE NUMBER: STD 3-0.1A

EFFECTIVE DATE: June 18, 1999

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PURPOSE.

This Instruction is a plain language re-write of OSHA Instruction STD 3.1, the Agency's interim enforcement policy on fall protection for certain residential construction activities.

Fall protection requirements for residential construction are set out in 29 CFR 1926.501(b)(13). In general, that provision requires conventional fall protection for work at or over six feet. However, OSHA Instruction STD 3.1 modifies those requirements. It permits employers engaged in certain residential construction activities to use alternative procedures routinely instead of conventional fall protection. No showing of infeasibility of conventional fall protection is needed before using these procedures. A fall protection plan is required but it does not have to be written nor does it have to be specific to the jobsite. Different alternative procedures are specified for different activities.

SCOPE. This Instruction applies OSHA-Wide.

CANCELLATION. OSHA Instruction STD 3.1, Interim Fall Protection Compliance Guidelines for Residential Construction, dated December 8, 1995, is canceled.

REFERENCE. 29 CFR Part 1926 Subpart M.

ACTION INFORMATION.

Responsible Office. Directorate of Construction.

Action Offices. National, Regional, and Area Offices Information Offices. State Plan Offices, Consultation Project Managers

FEDERAL PROGRAM CHANGE. This Notice describes a Federal OSHA program change for which State adoption is not required.

BACKGROUND. On December 8, 1995 OSHA published an interim fall protection compliance policy for fall protection for certain residential construction activities, pending further rulemaking on Subpart M. This Notice is a plain language re-write of that policy; it does not make substantive changes to the policy. The Agency will solicit public comment on fall protection issues in residential construction in an Advance Notice of Proposed Rulemaking on Subpart M. After analyzing those comments, we will re-evaluate this policy.

AVAILABILITY OF ALTERNATIVE PROCEDURES. Alternative procedures are available to employers who are (1) engaged in residential construction, and (2) doing one of the listed activities.

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Definition of "residential construction."

For purposes of this instruction, an employer is engaged in residential construction where the working environment, materials, methods and procedures are essentially the same as those used in building a typical single-family home or townhouse.

Residential construction is characterized by:

Materials: Wood framing (not steel or concrete); wooden floor joists and roof structures.

Methods: Traditional wood frame construction techniques.

In addition, the construction of a discrete part of a large commercial building (not the entire building), such as a wood frame, shingled entranceway to a mall, may fit within the definition of residential construction. Such discrete parts of a commercial building would qualify as residential construction where the characteristics listed above are present.

Listed Activities and Alternative Procedures.

There are four groups of residential construction activities for which alternative fall protection plans are available. Each group has its own set of alternative procedures and will be discussed in Sections IX through XII. The groups are:

GROUP 1. Installation of floor joists, floor sheathing, and roof sheathing; erecting exterior walls; setting and bracing roof trusses and rafters.

GROUP 2. Working on concrete and block foundation walls and related formwork.

GROUP 3. This group consists of the following activities when performed in attics and on roofs: installing drywall, insulation, HVAC systems, electrical systems (including alarms, telephone lines, and cable TV), plumbing and carpentry.

GROUP 4. Roofing work (removal, repair, or installation of weatherproofing roofing materials such as shingles, tile and tar paper).

Questions.

Do any of these plans have to be written and site specific? No.

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Does the employer have to determine that conventional fall protection is infeasible before being permitted to use an alternative procedure? No.

ALTERNATIVE PROCEDURES FOR GROUP 1:

INSTALLATION OF FLOOR JOISTS, FLOOR SHEATHING, AND ROOF SHEATHING; ERECTING EXTERIOR WALLS; SETTING AND BRACING ROOF TRUSSES AND RAFTERS.

The alternative measures for this group are set out in Appendix E to Subpart M. Appendix E requires the employer to implement a Fall Protection Plan. Such a plan must lay out the safest procedures to be followed at the work site to prevent falls. Although the plan need not be in writing, it must be communicated to all employees on site who might be subject to fall hazards.

NOTE: Height Limitation: The Appendix E plan may only be used on structures up to three and a half stories or 48 feet (including basement, two finished levels, attic). The 48' measure is from the base of the building, at the lowest ground level (including any excavation), to the point of greatest height. The following are the required elements of the Plan: General Requirements For Group 1 Activities. Training, Implementation/Supervision By Designated Individuals, Controlled Access Zones, Plan Administration (required for all Group 1 activities).

Training

Each employee performing work in Group 1 activities must be trained in the requirements of the Plan. The employer must ensure that the employees (1) understand the procedures and follow the instructions of the crew supervisor or foreman; (2) are able to recognize unsafe/hazardous conditions and are to report them to the employer; (3) can recognize when compliance with the Plan would create a greater hazard and are instructed to inform the Competent Person before proceeding when that occurs. Training and retraining violations shall be cited under 29 CFR 1926.503(a) and 1926.503(c). Subsection 1926.503 (b) may not be cited for residential construction.

NOTE: Any concerns raised by employees at any time during construction must be addressed (determined to be valid or not) before work proceeds.

Implementation/Supervision.

a. Competent Person.

The employer must designate a Competent Person, who will be charged with implementing the Plan. The Competent Person must continually monitor compliance with the Plan, including the

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provision of training and the proper use of Controlled Access Zones.

b. Qualified Person.

The employer must designate a qualified person to approve any changes to the Plan.

c. Crew Supervisor/Foreman.

The employer must designate a crew supervisor or foreman and charge him or her with the responsibility of immediately correcting any unsafe practice or condition.

Controlled Access Zones.

For purposes of this Instruction, a Controlled Access Zone (CAZ) restricts access to a clearly designated area where a Group One activity (installation of floor joists, floor sheathing, roof sheathing; erecting exterior walls; setting and bracing roof trusses and rafters) is taking place. The CAZ must meet the following requirements:

a. Boundaries.

The competent person shall determine the boundaries of the CAZ and clearly mark them with signs, wires, tapes, ropes or chains.

b. Monitor.

The crew supervisor/foreman shall monitor the workers in the CAZ to ensure that they do not engage in unsafe practices.

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c. Restricted Access.

Access to the CAZ must be restricted to authorized entrants. An authorized entrant is a worker who has received the training described above. The competent person must identify each entrant as an authorized entrant after the employee has successfully completed the training.

d. Final Check.

Before work begins in the CAZ, the competent person must ensure that all protective measures in the Plan have been implemented.

Plan Administration.

Employer Enforcement.

The employer is required to enforce the Plan. The crew supervisor/foreman, as well as individuals in the Safety and Personnel Department, must have the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the requirements of the Plan. Unsafe practices or conditions must be corrected immediately.

Changes To The Plan.

-- Designation of qualified person: the employer must designate a qualified person to approve changes to the Plan.

-- Approval required: changes to the Plan may not be made unless approved by the qualified person.

-- Plan Review: the qualified person must review the Plan as the job progresses to determine if additional practices, procedures or training need to be implemented. The employer shall notify and, if necessary, train workers in the new procedures.

Accident Investigations/Plan Review.

All accidents resulting in injury to workers shall be reported and investigated. To help prevent further accidents, the investigation must be documented so that the cause and means of prevention can be identified. In the event of a fall or other serious incident, the Plan shall be reviewed to determine if additional practices, procedures, or training need to be implemented.

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Additional Requirements For Specific Group (1) Activities.

Installing Roof Trusses and Erecting Rafters.

Walls Up To 8 Feet.

Interior scaffolds must be installed along the interior wall, below the area where the trusses/rafters will be located. This can often be accomplished with "sawhorse" scaffolds constructed of 46 inch sawhorses and 2 x 10 planks.

Walls Over 8 Feet.

If using scaffolds and ladders throughout the process would create a greater hazard, the following general requirements and specific procedures apply.

(1). Walls over 8 feet. General requirements.

(a) Falling Objects/Restricted Access.

Once truss/rafter installation begins, workers not involved in that activity shall not stand or walk below or adjacent to the roof opening or exterior walls in any area where they could be struck by falling objects.

(b) Bracing.

Trusses/rafters must be adequately braced before any worker may use them as a support.

(c) Designated, Trained Workers.

The employer must designate the trained workers who will work on the top plate, and those who will work on the peak.

(d) Restricted Duties.

Top plate workers shall have no other duties during truss/rafter erection.

(2) Procedures for working on the top plate.

(a) Installing The First Two Trusses.

The first two trusses/rafters must be set from ladders. The ladders must lean on side walls at points where the walls can support the load imposed by the ladder and worker. After the first two trusses/rafters have been set, a worker will climb a ladder onto the interior top plate to secure their peaks.

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(b) Remain On The Top Plate.

Workers will remain on the top plate and use the previously stabilized trusses/rafters as support while the other trusses/rafters are erected.

(3) Procedures for working at the peak.

(a) When Workers May Work On Peaks/Ridge Beam.

Workers detaching trusses from cranes or securing trusses at the peaks may be positioned at the peak of the trusses/rafters. Workers may be stationed on the top of the ridge beam where that is the only feasible way to secure rafters to the ridge beam.

(b) Stable Work Position

Workers at the peak, in the web of trusses, or on top of the ridge beam shall work from a stable position. They must either sit on a ridge seat (or the equivalent) or position themselves in previously stabilized trusses/rafters and lean into, and reach through, the trusses/rafters.

(c) Limited Fall Hazard Exposure.

Workers must not remain on or in the peak/ridge any longer than necessary to complete the task safely.

Roof Sheathing Operations. The competent person must determine when the roof system is stable enough to support a conventional fall protection system anchorage. The following provisions apply until the roof system can be used as an anchorage point; at that time personal fall arrest systems must be used.

Qualified Workers.

Only qualified workers shall install roof sheathing.

Secure Footing/Weather.

The employer must ensure that workers remove slip hazards before walking on sheathing. Such measures include removing mud from shoes or boots. When wet weather is present, roof sheathing shall be suspended unless safe footing can be assured. If winds exceed 40 miles per hour, sheathing operations are to be suspended, unless wind breakers are erected.

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Staging of Materials.

To minimize exposure to fall hazards, materials must be staged so that workers on the roof have quick and safe access to them.

Falling Objects/Restricted Access.

Workers not involved in roof sheathing shall not stand or walk below or adjacent to the roof opening or exterior walls where they could be struck by falling objects. The competent person shall clearly designate the restricted area before placement of the first piece of sheathing. The competent person may order a brief halt to the sheathing work to allow other workers to pass through the restricted area, as long as suspending work does not create a greater hazard.

Slide Guards.

-- Bottom Row: The bottom row of roof sheathing may be installed by workers standing in truss webs and leaning over the sheathing. After the bottom row is installed, a slide guard of at least four (4) inches nominal in height shall be securely attached to the roof. It must extend across the full width of the roof.

-- Slide Guard Intervals: Roof Pitch Up To (and including) 9 in 12: Additional slide guards are required at 13 foot intervals as successive rows of sheathing are installed.

-- Slide Guard Intervals: Roof Pitch Over 9 in 12: Additional slide guards are required at four foot intervals.

NOTE: These slideguard requirements, which come from Appendix E, differ from those for Group 4 Activities (roofing work).

Installation of Floor Joists and Floor Sheathing.

Designated, Trained Workers.

The employer must designate the trained workers who will do this work.

Staging of Materials.

To minimize exposure to fall hazards, materials must be staged so that workers have quick and safe access to them.

Restricted Access.

While this work is taking place, workers not directly assisting in it shall not be permitted within six (6) feet of the leading edge.
Installation Process: Floor Joists/Trusses.

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The first floor joist or truss must be rolled into position and secured by workers on the ground, ladders, or sawhorse scaffolds. Successive joists/trusses must be rolled into place. They are then to be secured from a platform. The platform is to be built from a sheet of plywood laid over the previously secured floor joists or trusses.

Installation Process: Floor Sheathing.

The first row of floor sheathing must be installed by workers on the ground, ladders, or sawhorse scaffolds. After the first row of sheathing has been installed, workers shall work from the established deck.

Erection of Exterior Walls.

Designated, Trained Workers.

The employer must designate the trained workers who will do this work.

Warning Line.

A painted warning line six (6) feet from the perimeter will be clearly marked before any wall erection activities take place.

NOTE: As discussed above, this work must be done within a CAZ. A crew supervisor/foreman is required to monitor this work and warn anyone who approaches the unprotected edge. The warning line does not replace the monitor; it is an additional safety measure.

Staging of Materials.

To minimize exposure to fall hazards, materials must be staged so that workers have quick and safe access to them.

Limit Fall Hazard Exposure.

Workers constructing exterior walls shall complete as much cutting of materials and other preparatory work as possible away from the edge of the deck.

NOTE: Wall openings (more than six feet above the lower level), floor holes and roof holes: As soon as sheathing has been installed around a floor hole, roof hole, or wall opening that is not going to be sheathed (such as a hole for a doorway, stairwell or skylight), it must be covered, or protected by a guardrail.

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ALTERNATIVE PROCEDURES FOR GROUP 2:

WORKING ON CONCRETE AND BLOCKFOUNDATION WALLS AND RELATED FORMWORK.

This Instruction specifies the alternative procedures for protecting employees working from the top surface of block foundation walls, concrete foundation walls, and related form work. These procedures are:

Trained Workers Only.

Only trained workers shall be allowed to work on the top of the foundation wall/form work, and only as necessary to complete the construction of the wall.

Adequate Support.

All formwork shall be adequately supported before any worker may work on top of the form work.

Bad Weather.

When adverse weather (such as high winds, rain, snow, or sleet) creates a hazardous condition, operations shall be suspended until the hazardous condition no longer exists.

Staging of Materials/Equipment.

Materials and equipment for the work shall be conveniently located to the workers on the top of the foundation/formwork.
Impalement Hazards.

Materials and other objects which could pose impalement hazards shall be kept out of the area below where workers are working or shall be properly guarded.

ALTERNATIVE PROCEDURES FOR GROUP 3:

THIS GROUP CONSISTS OF THE FOLLOWING ACTIVITIES WHEN PERFORMED IN ATTICS AND ON ROOFS: INSTALLING DRYWALL, INSULATION, HVAC SYSTEMS, ELECTRICAL SYSTEMS (INCLUDING ALARMS, TELEPHONE LINES, AND CABLE TV), PLUMBING AND CARPENTRY.

This Instruction specifies the procedures for this group. They are:

Trained Workers Only.

Only trained workers shall be allowed to work in attics and on roofs, and only as necessary to complete the construction of the system being installed.

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Staging of Materials.

Materials and equipment for the work shall be located conveniently close to the workers. Impalement Hazards.

Materials and other objects which could pose impalement hazards shall be keep out of the area below where workers are working, or properly guarded. Restricted Access.

While attic or roof work is in progress, workers not involved in such work shall not stand or walk below or adjacent to any openings in the ceiling where they could be struck by falling objects.

Bad Weather.

When adverse weather (such as high winds, rain, snow, or sleet) creates a hazardous condition, operations shall be suspended until the hazardous condition no longer exists.

NOTE: The provisions of this Instruction do not apply to interior finishing work when done outside of attics or roofs areas. Subpart M applies to such work with respect to stairways, stairway openings, walkways, floor or window openings, floor holes or other elevated openings or open sides.

ALTERNATIVE PROCEDURES FOR GROUP 4:

ROOFING WORK (REMOVAL, REPAIR, OR INSTALLATION OF WEATHERPROOFING ROOFING MATERIALS SUCH AS SHINGLES, TILE AND TAR PAPER).

Restriction on Application for Roofing Work. The alternative procedures in this Instruction may only be used for this work where: (a) the roof slope is 8 in 12 or less, and (b) the fall distance, measured from the eave to the ground level, is 25 feet or less.

General Requirements.

Trained Workers Only.

Only workers who have been trained to be proficient in the alternative methods of fall protection shall be allowed onto the roof. In addition, each affected employee shall be trained to ensure specific awareness of the fall hazards associated with work on roofs with rake edges ("rake edges" are inclined roof edges, such as those on the gable end of a building).

Slip Hazards

The roof surfaces shall be inspected for slipping hazards. The employer shall either eliminate any such hazards or take effective measures to have workers avoid them. The employer shall have

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workers wear appropriate footwear to reduce the potential for slipping.

Bad Weather.

When adverse weather (such as high winds, rain, snow, or sleet) creates a hazardous condition, roofing operations shall be suspended until the hazardous condition no longer exists.

Roof holes/openings.

The employer shall have any damaged portions of the roof deck repaired as soon as practicable. Any holes (including skylight openings) or other areas where employees would not have safe footing shall be covered or surrounded by guardrails that comply with the requirements of 1926.502. Ladders/Scaffolds.

If ladders or scaffolds are used, they shall be erected and maintained in accordance with the requirements of Subparts X and L of OSHA's construction standards. In addition, employees shall be trained in accordance with the requirements of Subparts X & L.

Access To Roof.

Employers shall not allow workers to ascend or descend the roof's slope within 6 feet of the rake edge except where that limitation would prevent the performance of work.

Location of Materials.

Supplies and materials shall not be stored within 6 feet of the rake edge, or three feet where tile roof systems are being installed.

Impalement Hazards.

The area below the eaves and rakes shall be kept clear of materials and other objects which could pose impalement or other hazards, or properly guarded.

Safety Monitors and Slide Guards (for roofs with an eave height of up to and including 25 feet).

Roof Slope (Any Roof Type): Up to 4 in 12. The employer must use either a safety monitoring system that complies with §1926.502, or roofing slide guards. If slide guards are used, they must be built and installed in accordance with the requirements set out below.

Roof Slope (Except Tile or Metal Roofs): Over 4 in 12 (and up to 8 in 12): Slide guards are required.

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Roof **Slope (Tile or Metal Roofs): Up to (and including) 8 in 12:** The safety monitoring system may be used instead of slide guards.

Roof Slope (Any Roof Type): Over 8 in 12: Alternatives to the requirements of the standards are not available.

Eav**e Height Over 25 feet (Any Slope, Any Roof Type):** Alternatives to the requirements of the standards are not available.

Slide Guards: Requirements for Materials, Configuration and Installation.

Roof Slope: 6 in 12 or less:

Material. All slide guards must be constructed of 2"x 6" (nominal) stock.

Installation. No more than three rows of roofing material (installed across the lower eave) shall be applied before installing the slide guards. The roof jacks (or similar supports) shall be installed using nails long enough to withstand an employee sliding into the guard.

Configuration. The face of the slide guard must be perpendicular (about 90 degrees) to the surface of the roof. There must be continuous slide guards along the eave.

Roof Slope: Over 6 in 12 (up to and including 8 in 12):

Material: 2"x 6" stock.

Installation: Continuous slide guards shall be installed along the eave, as described above. Additional slide guards shall be installed below each work area at intervals not to exceed eight feet. They shall be installed using the following procedure: the employee, while standing on the slide guard below, secures the roof jacks for the next slide guard with nails and then installs the planks. The employee then climbs up to the new slide guard to continue the roofing work. This sequence is repeated as work proceeds up the roof.

Configuration: The continuous slide guards at the eave must be at about 90 degrees to the roof surface, as described above. The additional slide guards need not be continuous -- but they must be long enough to protect the work area. They do not have to be at 90 degrees to the roof surface.

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Removal: Once the roofing material is installed to the ridge, the employee is to climb down to the next lower slide guard and remove the upper slide guard. The employee repeats this process down the roof until all the slide guards are removed. Only when the roofing job is completed may the slide guards at the eave be removed.

CITATION POLICY.

If an employer (engaged in residential construction) does not provide conventional fall protection, the compliance officer must determine if STD 3-0.1a provides alternative procedures for the activity in question. If alternative procedures are available, the compliance officer must determine if they have been implemented. If there is a deficiency in the implementation of the alternative procedures, the fall hazard shall be cited as a violation of 1926.501(b)(13). No other provision may be cited for a fall hazard addressed by 1926.501(b)(13). Deficiencies in training required by 1926.20 may also be cited where appropriate.

Revision Date: Jun 17 1999

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C3 Inspection Services

FALL PROTECTION PLAN

(Required when standard fall protection systems are not feasible)

With changes: _____
(If no changes, enter "None")

This Fall Protection Plan is specific for the following project:

Project Name: _____

Location of Job: _____

_____

Date Plan Prepared: _____ by: _____
(Must be a Qualified Person)

Date Plan Modified: _____ by: _____
(Must be a Qualified Person)

Date Plan Modified: _____ by:
_____
(Must be a Qualified Person)

Plan Approved by: _____

Plan Supervised by: _____

POLICY STATEMENT

Our Fall Protection Program has been developed to protect our employees from the easily identifiable danger associated with working at height: falling. While the general concept of Fall Protection is straight forward, those employees to whom this Program applies must have specific training applicable to their individual jobs. It is recognized that the nature of fall hazards may vary from project to project and even change during a specific project. Training will be on-going to reflect the various existing work situations.

A copy of our Fall Protection Program can be found in the main office.

8101 FM 3104
Mobeetie, TX 79061

A copy of our Fall Protection Plan will be found on every applicable Job Site.

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FALL PROTECTION SYSTEMS TO BE USED ON THIS JOB

All employees on this job/project will be protected from fall hazards by the use of one or more conventional fall protection systems. These systems include guardrail systems; safety net systems; personal fall arrest systems; positioning device systems; warning line systems; controlled access zones; safety monitoring systems; covers; and protection from falling objects.

Further, the conventional fall protection system used in each required circumstance will be in compliance with 29 CFR 1926.502 which addresses which systems are appropriate (allowed) for specific types of work.

TRAINING

All our personnel working on this job/project have received training in the our Fall Protection Program and are able to recognize fall hazards and understand procedures to minimize these hazards. Further, they have been trained, as necessary, by a competent person qualified in the following areas using both formal and hands on training:

a. The nature of fall hazards in the work area.

b. The procedures for erecting, maintaining, disassembling, and inspecting the fall protections to be used.

c. The use and operation of guardrail systems; personal fall arrest systems; safety net systems' warning line systems; safety monitoring systems' controlled access zones; and other protection to be used.

d. Their role in the safety monitoring system when this system is used.

e. The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs.

f. The procedures for handling and storage of equipment and materials and the erection of overhead protection.

g. The roll of employees in fall protection plans.

ENFORCEMENT

Awareness of and respect for fall hazards, and compliance with all safety rules are of great importance. Appropriate disciplinary action will be taken should an employee disregard our safety guidelines.

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ACCIDENT INVESTIGATION

All accidents that result in injury to employees, regardless of their nature, will be investigated and reported. It is important that documentation of accidents take place as soon as possible so that the cause may be determined and steps may be taken to prevent a reoccurrence.

CHANGES TO THIS PLAN

Changes to this plan, specifically a deviation from conventional fall protection systems, will be documented by a qualified person whose name appears on the front of this fall protection plan.

Changes will be limited to:

a. leading edge work.

NOTE: Leading edge work involves construction which moves the location of the edge forward (backward). Working at the edge of a walking/working surface (such as a roof) is not leading edge work - it is (roofing) work at an unprotected side or edge.

b. precast concrete construction work.

c. residential construction work.

The criteria for determination that a conventional fall protection is infeasible is that it is impossible to perform construction work with a conventional fall protection system or it is technologically impossible to use a conventional fall protection system. Inconvenience and cost are not acceptable considerations.

Specific Fall Protection Plan criteria are found in 29 CFR 1926.502(k) and we will, if necessary, create a Fall Protection Plans that comply with the cited criteria.

A separate change will be made for each situation where conventional fall systems cannot be used.

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CHANGE TO FALL PROTECTION PLAN

CHANGE NUMBER: _____

This change to the Fall Protection Plan for the below listed project will be attached to the original Fall Protection Plan and a copy will be available at the job site.

Project Name: _____

Location of Job:_____

Date Change Prepared: _____ by:_____
(Must be a Qualified Person)

Date Change Modified: _____ by:_____
(Must be a Qualified Person)

Change Approved by: _____

Change Supervised by: _____

Reference the above.

Changes to this Fall Protection Plan for this specific project are required for the following reason(s):

Specific work that requires fall protection other than conventional fall protection:

_____
_____
_____
_____
_____
_____
_____
_____
_____

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Specific work areas where the above work will take place:

_____
_____
_____
_____
_____
_____
_____
_____
_____

Before any non-conventional fall protections are used as part of the work plan, a controlled access zone (CAZ) shall be clearly defined by the competent person _____ as an
(Name(s) of Competent Person)
area where a recognized hazard exists. The demarcation of the CAZ will be communicated by the competent person in a recognized manner such as:

Circle one or more of the below:

a. signs
b. wires
c. tapes
d. ropes
e. chains
f. other: _____

All access to the CAZ will be restricted to authorized entrants. Those entrants will be identified by _____
(Color hard hats; arm bands, etc.)
and are listed below:

_____ _____ _____

_____ _____ _____

_____ _____ _____

The competent person will ensure the protective elements of the CAZ are implemented prior to the beginning of work.

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Specific reasons why conventional fall protection is either infeasible or creates a greater hazard:

_____
_____
_____
_____
_____
_____
_____
_____
_____

Specific measures to be taken to reduce or eliminate fall hazards for personnel who cannot be provided conventional fall protection:

_____
_____
_____
_____
_____
_____
_____

In the above CAZ, a safety monitoring system will be implemented in conformance with 29 CFR 1926.502(h).

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C3 Inspection Services

SAFETY NET INSTALLATION CERTIFICATION

This is to certify that the Safety Net identified below was installed with sufficient clearance under it to prevent contact with the surface or structures below when subjected to an impact force equip to the drop test specified in 29 CFR 1926.502(c)(4)(i).

SAFETY NET MAKE: _____

SAFETY NET MODEL: _____

SAFETY NET LOCATION: _____

It was found to be unreasonable to perform the below listed drop test for the following reasons:

_____
_____
_____
_____
_____

Drop Test (Circle appropriate drop test to which the certification applies):

a. After initial installation and before using drop test.

b. After relocation drop test.

c. After major repair drop test.

d. After remaining in the same location for 6 months drop test.

_____ _____
(Competent Person) (Date)

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