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ROOFGUARD
LIFTSAFE FALL PROTECTION INC.

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WHO WE ARE.

LIFTSAFE FALL PROTECTION INC. IS A MEMBER OF THE LIFTSAFE GROUP OF COMPANIES. RECOGNIZED AS AN INDUSTRY LEADER IN FALL PROTECTION SOLUTIONS WE FOCUS ON FOUR DISTINCT MARKET SEGMENTS.

ROOFTOP SAFETY PRODUCTS

SAFETY NETTING

ENGINEERED SOLUTIONS

AVIATION FALL PROTECTION PRODUCTS

WHAT IS ROOFGUARD?

RoofGuard is a versatile, economical and modular fall protection system designed to protect employees and contractors that have to perform job functions at, or near, the leading edge of a rooftop.

RoofGuard requires NO penetration of the roof membrane, therefore no leaks down the road.

RoofGuard is a counterweighted system utilizing cast steel baseplates to provide enough weight on the “returns” to meet all requirements of lateral force loading.

RoofGuard is a “Passive” fall protection system.

RoofGuard is designed to provide site specific coverage (ie/ a single HVAC unit) or it can be designed to provide full or partial perimeter coverage of a rooftop.

RoofGuard Classic consists of aluminum pipe, magnesium alloy fittings and cast steel baseplates.
Easy to use, easy to install, Saves Lives!

WHY DO WE NEED ROOFGUARD?

Unfortunately, falls are one of the leading causes of job related injuries and fatalities. On any given day, every worker – even one used to working at heights – is at risk of having a fall and needs the best protection possible.

Common Causes of Falls Include:

- Losing balance
- Losing grip on a support
- Support moving or giving way (ie/ ladder)
- Tripping
- Stepping in a hole
- Carrying product and not seeing an obstruction in front of them



WHO NEEDS ROOFGUARD?

Common Industries/Applications Include:

- Municipal Buildings
- Warehouses and Factories
- Hospitals
- Schools
- Government Buildings
- Manufacturing Facilities



WHEN DO WE NEED ROOFGUARD?

OSHA requirements are the accepted standard for workplace fall safety practices.

Fall protection must be provided at elevations of 4 ft in general industry workplaces, 5 ft in shipyards, 6 ft in the construction industry and 8 ft in longshoring operations. In addition, OSHA requires that fall protection be provided when working over dangerous equipment and machinery, regardless of the fall distance.

Floor holes and openings must be covered or guarded immediately.

All floor hole covers must be constructed to effectively support two times the weight of employees, equipment and materials that may be on the cover at any given time.

WHEN DO WE NEED ROOFGUARD? (cont.)

Anybody working within 6 ft of the leading edge of a rooftop must either be secured to an engineered fall protection system with proper body harness (and have proper training certificates) or there should be proper guardrails in place protecting those workers from potential fall hazards.

This is where RoofGuard is needed.

Any applications where an HVAC unit, security camera, hatch opening, walkway, etc are located at or near the edge of a roof, RoofGuard products can be easily installed to provide the required protection for multiple workers.

It is the companies responsibility to provide a safe work environment for employees and outside contractors who may be performing regular maintenance on equipment on the rooftop. Once RoofGuard has been installed, there is protection in place to protect workers for years to come.

CODES / REGULATIONS.

RoofGuard freestanding guardrail system has been designed and engineered to conform to the following codes / regulations:

- OSHA Standard 29 CFR 1910.23
- OSHA Standard 29 CFR 1926.501, 29 CFR 1926.502
- National Building Code of Canada (2005) Section 4.1.5.15 (1)(b), 4.1.5.15 (2) and 4.1.5.15 (5)
- Ontario Building Code (2006) Section 4.1.5.15 (1)(b), 4.1.5.15 (2) and 4.1.5.15 (4)
- Ontario Ministry of Labour Regulation 213/91 S.26.3 (2) to (8)

When installed and maintained as per the supplied user guide, or a system specific stamped engineered drawing, the guardrail system meets or exceeds all applicable codes and regulations required by OH&S Code.

ACTIVE VS PASSIVE FALL PROTECTION.

There are two distinct types of fall protection classifications – Active and Passive

- **Passive** Fall Protection is the type of protection that does NOT require any action by people.
 - Examples include, but are not limited to:
 - Guardrails
 - Safety Nets
 - Fences
 - Covers
- **Active** Fall Protection is the type of protection that requires training and direct connection to an Engineered fall protection system or anchor point.
 - Examples include, but are not limited to:
 - Body Harnesses and Lanyards
 - Anchor Points
 - Cable or Rail Lifeline Systems
 - Anchor Points

ACTIVE VS PASSIVE FALL PROTECTION (cont.)

General rule with all fall protection applications is to try and develop protection that does not require active fall protection, if possible.

Guardrails are a preferred method of protection on a rooftop because there is no training required. Once a guardrail is in position, all individuals working in that area are protected from potential fall hazards, and they do not require any special training to use the system properly. Active systems cannot be used by individuals unless they have successfully completed a working at heights safety course put on by accredited trainers.

Guardrails provide protection for a number of people all at the same time, whereas a lifeline system (Active FP) is typically only rated for one (or possibly two) people only.

ADVANTAGES OF ROOFGUARD.

VERSATILE

More versatile than fixed length steel rail systems

USER FRIENDLY

Baseplates are more “user friendly” and ergonomic than competitive systems (only 40 lbs vs 80+ lbs, carry handles, stackable to achieve desired counter weights)
Easier to carry means quicker assembly – Quicker assembly means lower labour costs.

ADJUSTABLE

Product (pipe) can be cut on site if need be to avoid any obstructions

EASY TO TRANSPORT

Sold in easy to handle wooden crate
(easier to transport, boom up onto roof, store in warehouse for stocking distributors).

ADVANTAGES OF ROOFGUARD. (cont.)

SIMPLE

Everything in one crate (materials, tools, layout design)
Simple and easy for the installer – no extra tools needed to be taken to site

LEGISLATION

Meets or exceeds requirements of CSA, OSHA, ANSI, OBC

PRICE, PRICE, PRICE

More attractive pricing for distributor partners – higher selling margins
(typically 30-35% GPM minimum but can be even higher when comparing prices against competitors)

LOWER SHIPPING COSTS

Kits don't take up anywhere near as much space as fixed length steel rail systems – less cubic space on trailer
= \$\$\$ savings on freight costs

ADVANTAGES OF ROOFGUARD. (cont.)

ALUMINUM RAIL AND ATTACHMENT COMPONENTS

No rust down the road.

GALVANIZED BASEPLATES

AESTHETICALLY PLEASING TO THE EYE

Aluminum rail systems “blend in” with the building as compared to bright yellow railings that don’t fit in with the curb appeal.

FULL LINE OF ROOFGUARD ACCESSORIES AVAILABLE TO DEALERS

(temporary restraint anchors, RoofStep, RoofWalk, etc)

Full line of rooftop safety products designed to keep your customers in compliance with current regulations.

VERSATILITY OF ROOFGUARD.

CUSTOM CONFIGURATIONS

Wide range of components allow the system to be configured to best fit your customers rooftop requirements

ABLE TO BOLT ON APPLICATIONS

Special clamps and bolt on components are available to connect the system directly to walls, existing railing systems, fixed access ladders and more....

SAFETY GATES

Safety gates can easily be included in the design of a RoofGuard system for use with roof hatches, fixed access ladders, etc

EASY TO EXTEND

Sections can be added to RoofGuard systems down the road if additional coverage is found to be necessary

VERSATILITY OF ROOFGUARD.

ADAPTABLE

Aluminum pipe can be cut on site to ensure that the system fits into tight areas and provides maximum coverage.

Example:

if you have a section that requires 5'6" coverage, the pipe can be cut on-site to fit that space.

A fixed length steel rail system will not allow you to do that – a 6 ft rail will not fit.

ADJUSTABLE COVERAGE

Variable angle fittings allow you to adjust the angle of coverage if the roof design has some “twists” incorporated into the layout

LAYOUT OF ROOFGUARD. (typical)

COMPONENTS

RoofGuard typically consists of 9 ft rail sections and 6 ft returns (tie-backs)

Returns have a minimum of 3 baseplates on the end post to provide the necessary counterweight to allow the system to meet lateral force ratings.

SET-UP

Returns are positioned at a MAXIMUM of 27 ft intervals (3 sections of 9 ft rails)

If the return encounters a location whereby a 6 ft return will interfere with something on the roof, the return can be cut shorter, but additional baseplates need to be added (ie/ a 3 ft return would require 6 baseplates instead of the normal 3 plates). This would need to be confirmed on a job by job basis by LFP engineering.

LAYOUT OF ROOFGUARD. (typical, cont.)

RULE OF THUMB

Add one additional baseplate for each foot that is shortened on the return.

LAYOUT DRAWINGS

Layout drawings would be provided for custom projects.
Drawings for standard kits are included in the package of materials provided with each kit.

ROOFTOP PROTECTION

Masticated rubber pads are included to provide a barrier between the baseplate and the roof membrane.

LAYOUT OF ROOFGUARD (Cont.):



Single baseplates
required along leading
edge

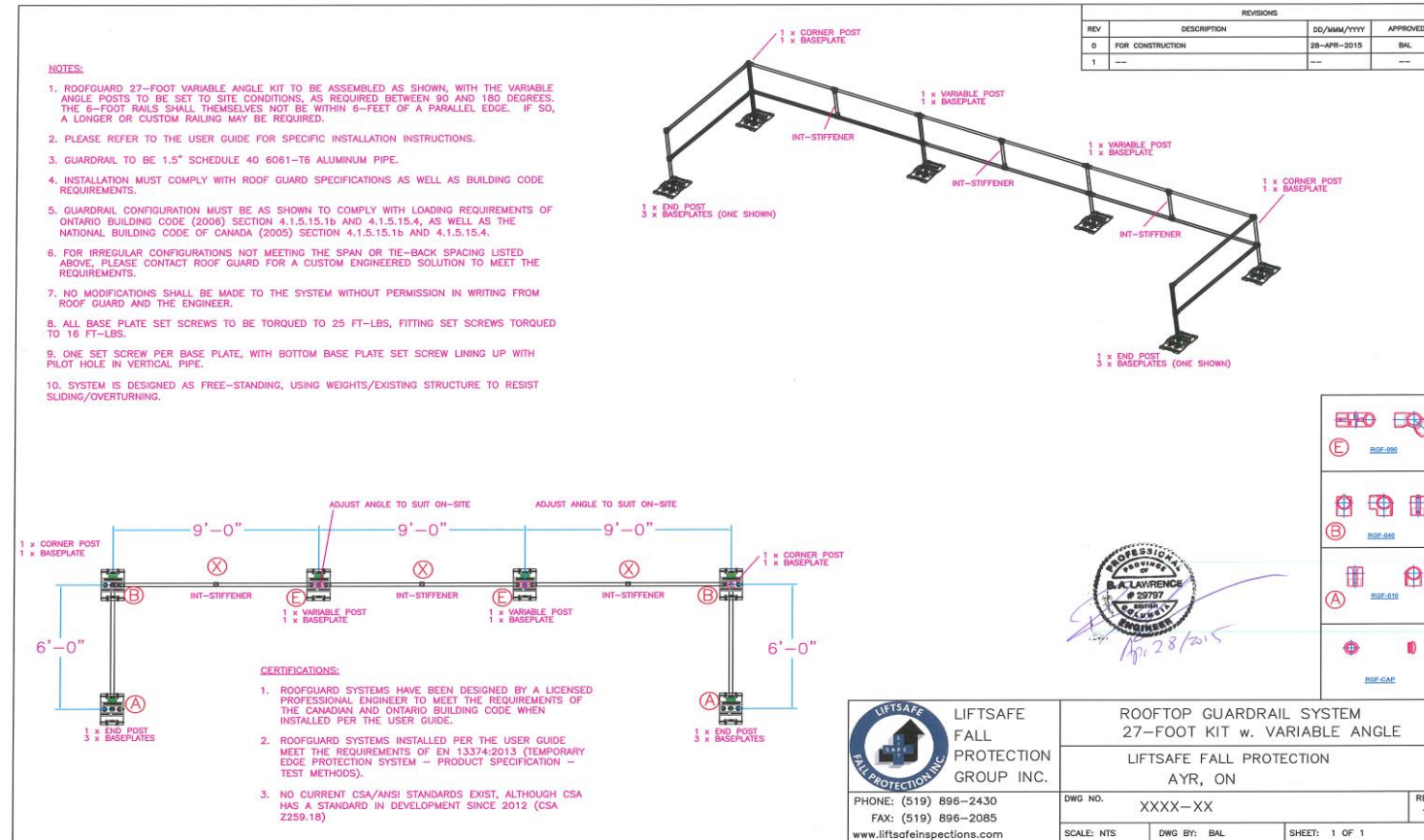
6 ft "standard" return
with 3 baseplates

LAYOUT OF ROOFGUARD. (cont.)

Typical RoofGuard Classic setup with
6 ft returns every 27 ft
(3 sections of 9 ft rail)



ROOFGUARD LAYOUT DRAWINGS. (kits)



Each RoofGuard Classic System comes with a layout drawing.

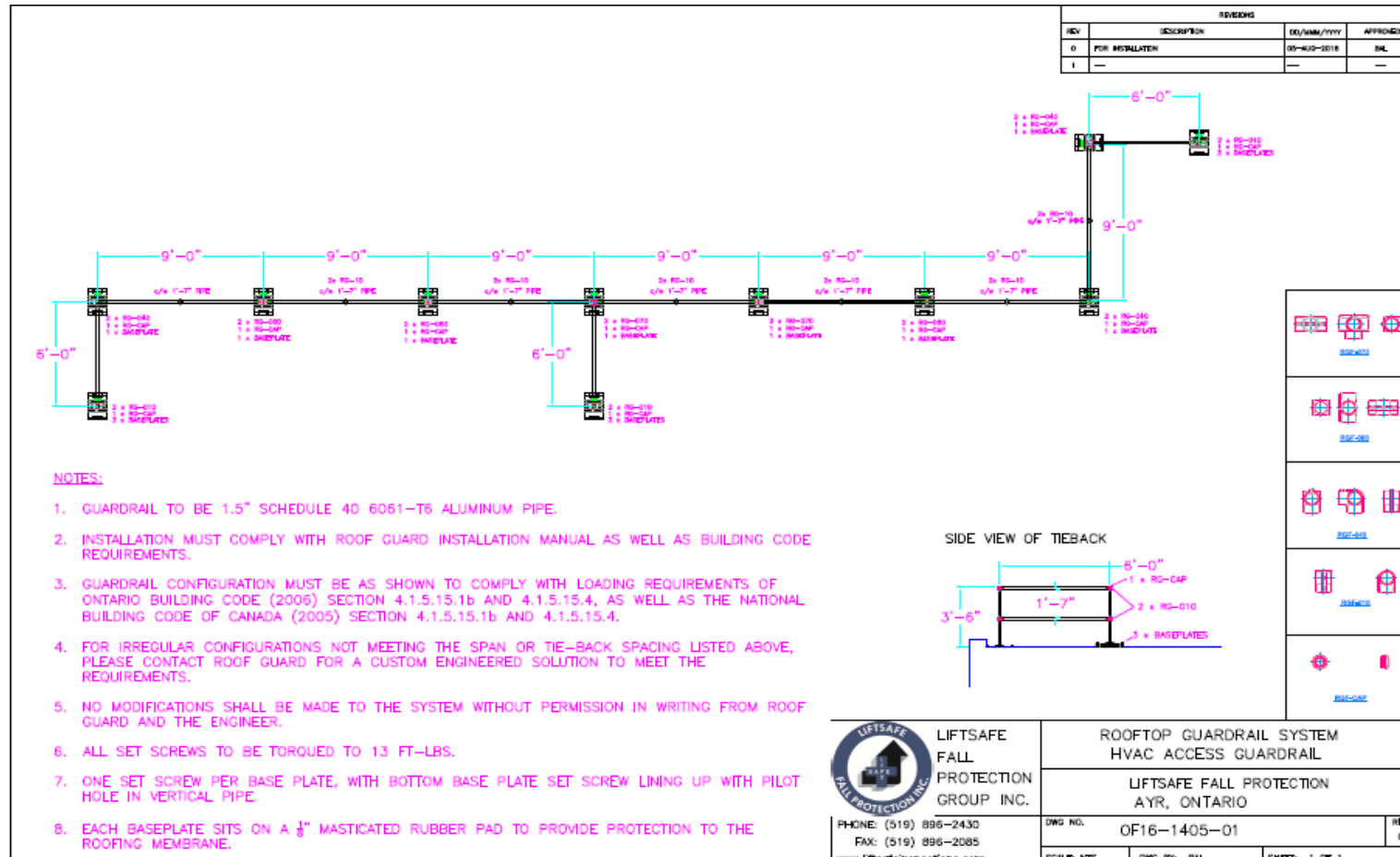
Image shown here is a standard 27 ft RoofGuard Kit.

Layout drawings show the position of each component, number of baseplates for each post position, etc in order to help you to properly assemble the RoofGuard system.

ROOFGUARD LAYOUT DRAWINGS. (custom)

This shows an example of a more “custom” RoofGuard setup.

Drawings would be provided with the order (or sent electronically ahead of time) in order to allow the installers to have a clear idea of where all of the components are to be positioned.



TYPICAL ROOFTOP PERIMETER SETUP

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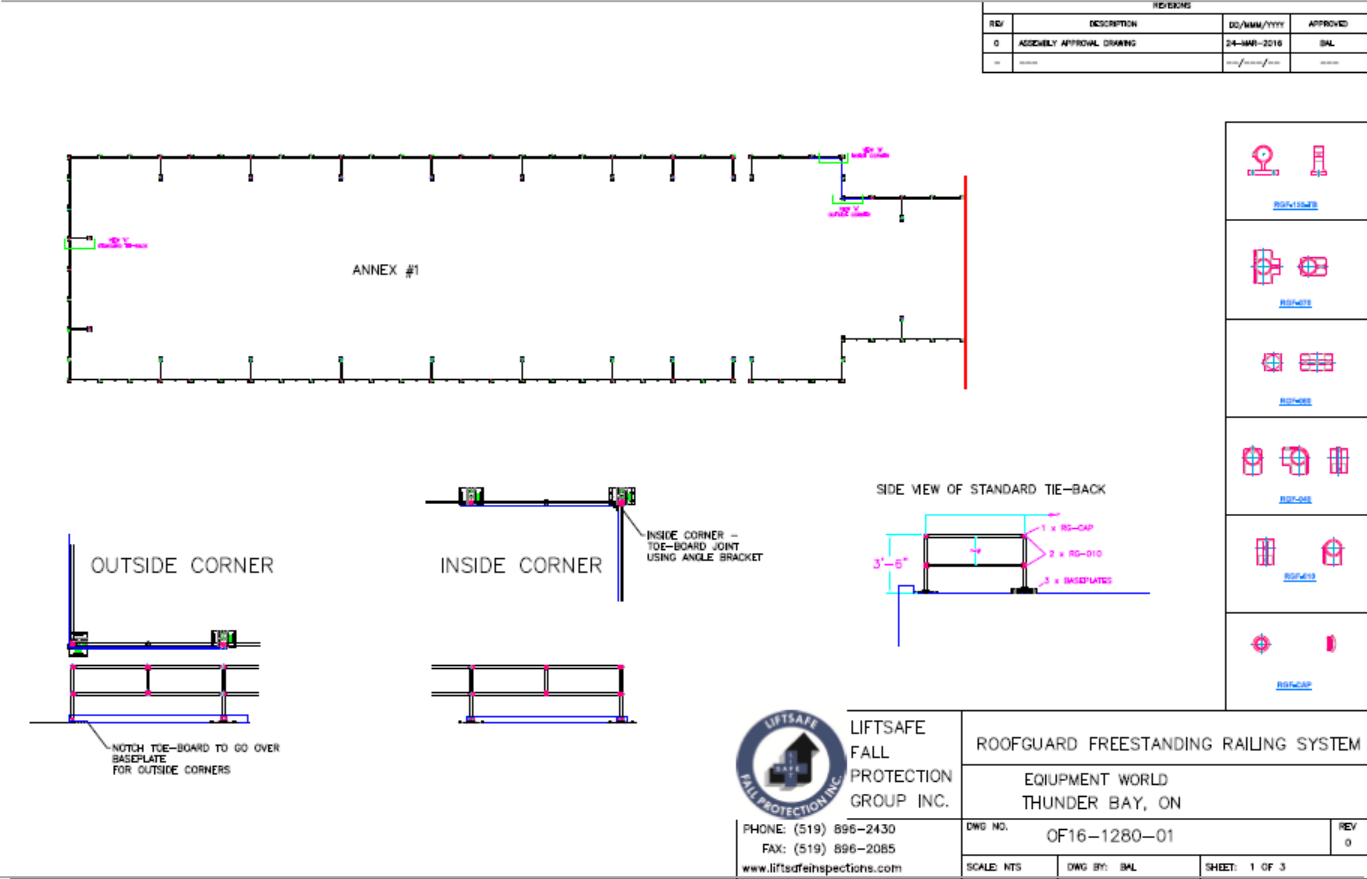


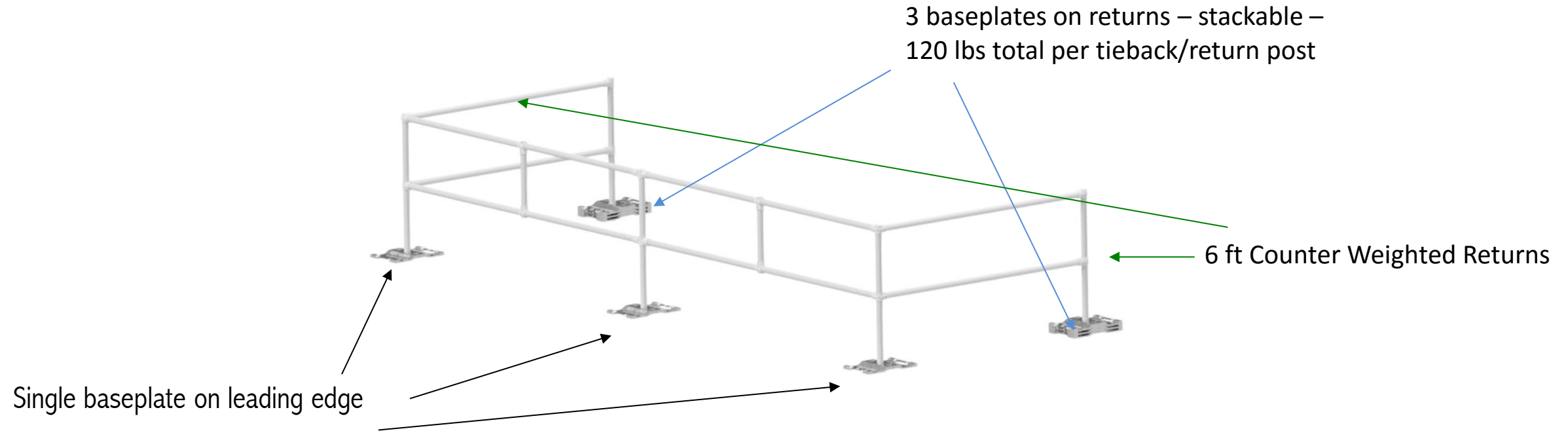
Image to the left shows a “typical” perimeter setup on a roof.

For custom setups, simply send in a quick sketch of the rooftop layout that your customer requires and LFP can quickly turn around a quote for a system that will provide complete coverage.

ROOFGUARD CLASSIC. (kits.)

RoofGuard Classic is available in pre-packaged kits (9', 18' and 27') to simplify the ordering process and to provide a product that can easily protect workers in most situations where work needs to be performed in or around one or two rooftop units

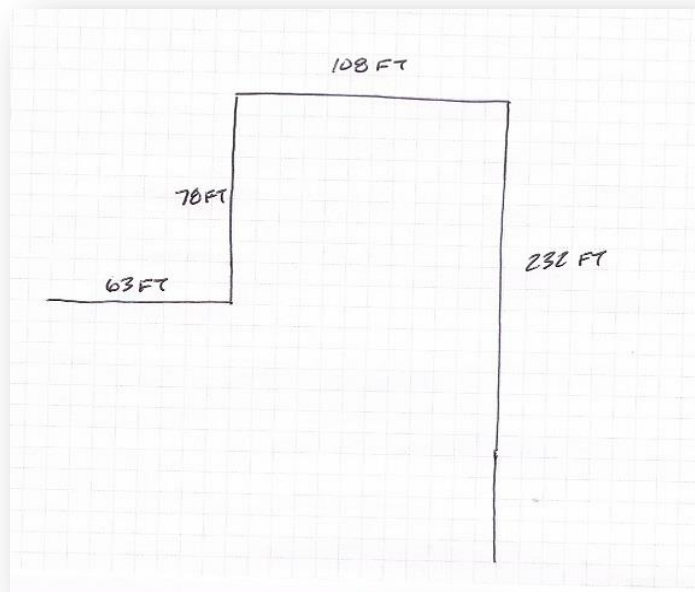
18 ft RoofGuard Kit shown



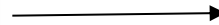
ROOFGUARD “CUSTOM” SETUPS.

RoofGuard is available in any and all configurations, not just kit form. If a customer wants full, or partial, perimeter roof coverage, RoofGuard can provide just that.

Send in a sketch, line drawing, CAD drawing, or even a Google Maps photo with areas of coverage and measurements for those specific areas, and pricing can be provided very quickly.



Sample Layout Sketch.



End Result.



CUSTOM ROOFGUARD SYSTEM.

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HATCHGUARD KITS.

Part of the RoofGuard family of products is our HatchGuard line, also available in Kit form.

HatchGuard is designed to protect workers from accidentally falling into an open hatch while working in or around such an opening. While working on the roof, the hatch is typically left open for access and this represents a major fall hazard.

HatchGuard is a freestanding system that “surrounds” the hatch and has a safety gate on the access side of the hatch opening to provide protection for the workers.

Custom sizes are available for HatchGuard systems if required.

EXAMPLES OF HATCHGUARD KITS.



2 Baseplates per Corner



Self-Closing Gate

SKYLIGHT KITS.

If workers are required to work on a roof and are exposed to unprotected skylights without a guardrail around them or a screen over it, it is, according to OSHA, the equivalent of exposing them to a hole in the roof.

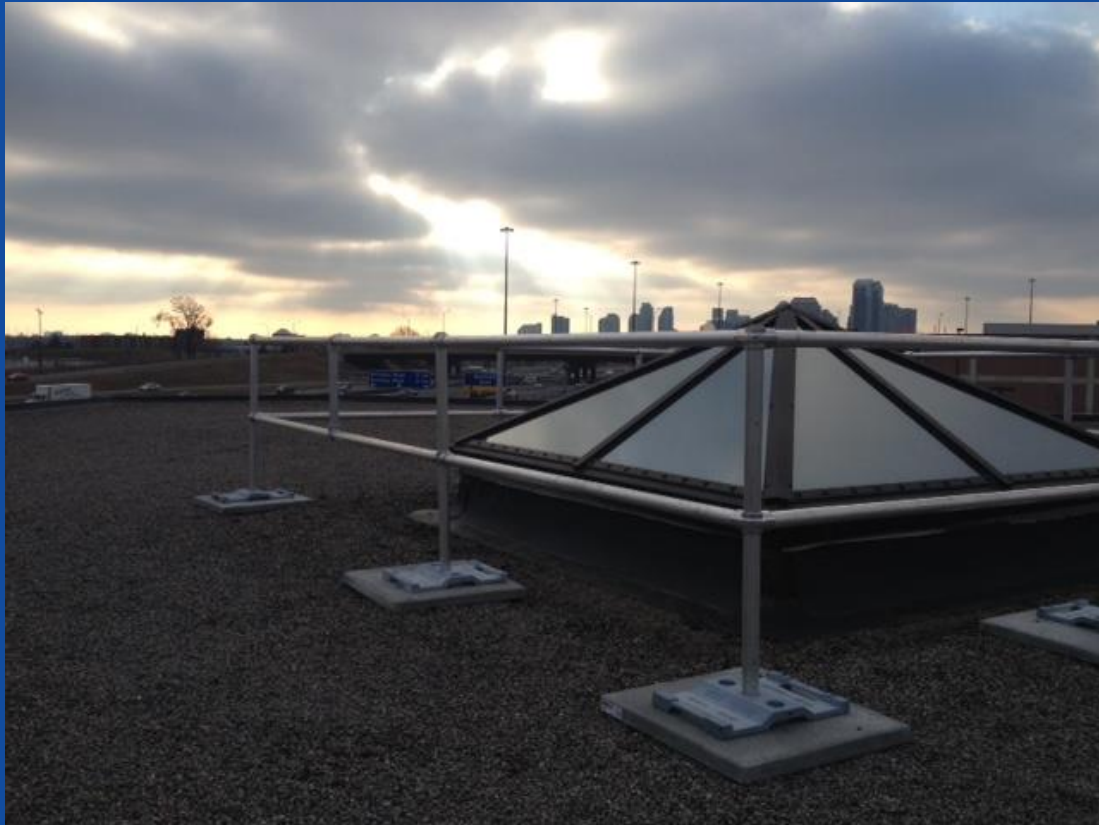
OSHA HAS RECORDED 47 FATALITIES FROM FALLING THROUGH SKYLIGHTS SINCE 2010.

RoofGuard Skylight kits provide perimeter protection around the skylight while retaining the properties of the skylight itself (not blocking sunlight).

OSHA 1919.23 (a)(4): *“every skylight floor opening and hole shall be guarded by a standard skylight screen or a fixed standard railing on all exposed sides”*

EXAMPLES OF SKYLIGHT KITS.

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ROOFSTEP.

RoofStep is a counter weighted, freestanding fall protection system which provides safe and reliable access up and over elevation changes (including parapet walls).

RoofStep utilizes our baseplate design in order to ensure optimum weight is allotted at engineered approved points. No drilling into walls or penetration of roof membrane is required.

RoofStep is totally freestanding so no worries about affecting your rooftops integrity.

Twelve distinct kits have been designed which include:

- Engineered ladders on the face and back of the parapet wall
- Platform over the parapet area to protect sensitive roof membrane or coping materials from damage
- Fall protection guardrails with kits where falls from one elevation to another may occur

EXAMPLES OF ROOFSTEP.

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ROOFWALK.

RoofWalk is a completely customized line of products that provides a safe walking surface for employees and contractors to navigate themselves while performing tasks on the rooftop.

RoofWalk is designed to facilitate clear and identifiable pathways, ensuring complete safety while on the roof.

RoofWalk incorporates the use of the RoofGuard safety rail system to provide a fully certified guardrail system into the RoofWalk System.

ALL ROOFWALK SYSTEMS ARE CUSTOM PROJECTS.

EXAMPLES OF ROOFWALK.

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ROOFGUARD TEMPORARY RESTRAINT ANCHOR.

RoofGuard Temporary Restraint Anchor allows users the flexibility to place anchor points exactly where they need them for specific job applications.

This system is designed for restraint use only – NOT for fall arrest applications whereby the user could reach the edge of the roof – this system is only designed to keep the worker from NOT getting to the edge.

This Restraint Anchor uses two stacks of baseplates with a single plate joining them together – D-Ring anchor in between allows worker to tie off with lifeline or lanyard to provide 480 lbs of restraint force.

EXAMPLES OF ROOFGUARD RESTRAINT ANCHOR.

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ROOFGUARD X-PRESS

Light weight and easy to install, RoofGuard X-Press is an innovative line of fall protection equipment that is perfect for both permanent and temporary applications, and can easily be moved to new locations if required.

Simplicity is one of the number one things which was kept in mind when as we designed RoofGuard X-Press, this rooftop guardrail system is able to be quickly and easily be installed onto most roof-tops. It has a modular design which allows for its easy installation without requiring welding, drilling or bolting to your structure.

Designed with versatility in mind RoofGuard X-Press has the minimal number of pieces possible which simplifies set up and the movement of the system.

EXAMPLES OF ROOFGUARD X-PRESS.

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EXAMPLES OF ROOFGUARD PRODUCTS IN ACTION.

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Typical Setup showing 6 ft returns every 27 ft, corner setup with return facing inwards, rubber pads to protect the membrane



RoofGuard system attached directly to a fixed access ladder to provide complete protection while accessing the ladder



Typical skylight system

EXAMPLES OF ROOFGUARD PRODUCTS IN ACTION. (cont.)

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18 ft RoofGuard Kit protecting single mechanical unit



RoofGuard system attached directly to fixed access ladder to allow for safe access to ladder – provides a safe work zone for entry and exit from ladder to allow workers to get out onto the roof surface safely without getting into the 6 ft zone near the roof edge.



HatchGuard Kit

EXAMPLES OF ROOFGUARD PRODUCTS IN ACTION. (cont.) LFP



RoofGuard Kit being craned up onto roof.

Everything contained in one wooden crate.



RoofGuard system with shortened return (3 ft). Note the stack of baseplates contains 6 plates instead of the normal 3.

Shorter returns require additional weight.

The rule of thumb is 1 additional plate per (1 ft.) deducted.



RoofGuard system providing protection when exiting a hatch that is located only 2 ft from roof edge.

EXAMPLES OF ROOFGUARD PRODUCTS IN ACTION. (cont.)

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EXAMPLES OF ROOFGUARD PRODUCTS IN ACTION. (cont.)

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