

**Summit Anchor Company, Inc.<sup>®</sup>**

**Safety From The Top Down**

## Roof and Wall Safety/Tie-Back Anchors



**Suspended Access Systems and  
Fall Protection**

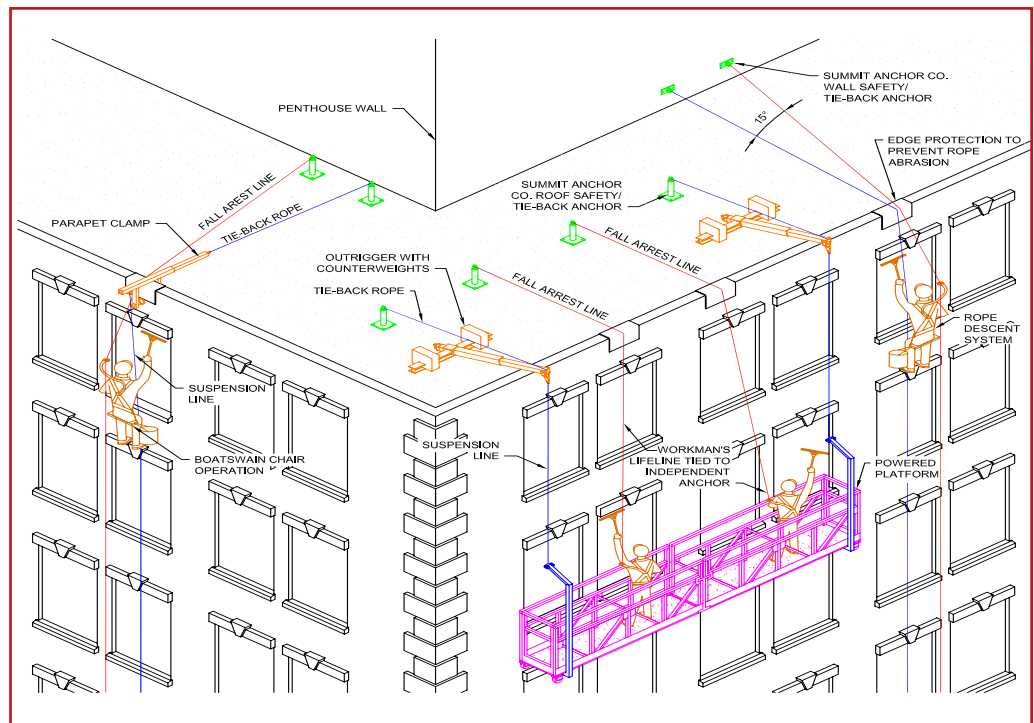
# Overview

## United States and Canadian national safety standards

require a building to provide certified anchorages capable of supporting the required loads before any suspended maintenance work is performed.

Roof and wall anchors are the simplest means of ensuring the safety of maintenance contractors who must work on a building's face and avoid liability.

Roof and wall anchors alone may not satisfy all of the safety requirements of your structure, but when properly designed and installed they can play a vital role in achieving compliance with OSHA requirements and ANSI/IWCA I-14.1 and CAN/CSA Z91 window cleaning safety standards.



*Anchors may be used to tie back boatswain chairs or portable outrigger beams for swing stage operations.*

**Summit Anchor Company can provide anchorage that will facilitate whatever exterior maintenance might be required on your building. Some common examples of this type of maintenance are:**

- Construction
- Window cleaning
- Waterproofing, caulking and façade cleaning
- Façade roof renovations, window replacement.
- Any interior or exterior maintenance where suspended work must be performed.

Various building features often necessitate other access equipment as follows:



[Davits](#)



[Horizontal Cable Systems](#)



[Rigging Sleeves](#)



[Monorails](#)

Regardless of what mechanical suspension device may be used by your exterior maintenance contractor, ANSI/IWCA I-14.1, section 5.8.22 C states that for each suspended worker “*anchorage of the lifeline should be independent of any portable support device.*” One anchorage supports the worker's equipment (i.e. boatswain chair), and another anchorage is used to tie off fall arrest equipment or safety line. OSHA 1910.66 appendix C, section 1 and OSHA 1926.451 (g) contain similar requirements.



Summit Anchor Company can assist you with the design of a suspended maintenance system that complies with OSHA and ANSI/IWCA I-14.1 requirements. By utilizing our expertly engineered anchors, and other equipment, as needed, with a well designed anchor layout roof plan, we provide the highest level of safety for suspended workers. Click [HERE](#) to see a window cleaner in action.

## Why Specify Summit Anchor Company Anchors?

Our anchor eyes are drop forged, resulting in a stronger anchor than the common U-bar type of anchors. According to the Forging Industry Association: “Forgings have grain oriented to shape for greater strength. Machined bar and plate may be susceptible to fatigue and stress corrosion because machining cuts material grain pattern. In most cases, forging yields a grain structure oriented to the part, resulting in optimum strength, ductility, and resistance to impact and fatigue.” The additional quench-and-tempering process of Summit's anchor eyes ensures consistent performance of each non-stainless steel anchor eye. The heat treatment and cooling process capitalizes on the properties of the steel to create anchor eyes with reduced risk of catastrophic failure due to brittleness and with the toughness to withstand the critical application involved with suspended maintenance. Note: Quench-and-tempering is only available with non-stainless steel anchor eyes.



Figure 1



Summit Anchor Company's roof and wall anchor eyes are drop forged, then quenched and tempered, resulting in the strongest and most durable anchors on the market.

No apparent permanent deflection is observed when testing our standard anchors to 5,000 lb. [CLICK HERE](#) to view test report.

Here are some other reasons...

- **Corrosion resistance** Our anchors are completely hot-dipped galvanized with stainless bolts. Hollow Structural Sections (HSS) may be filled with molded urethane insulation to reduce thermal transfer and condensation and commonly in green construction. *This option is recommended by Summit Anchor Company.*
- **OSHA/ANSI compliance** Our anchors have been engineered and tested to comply with current OSHA regulations and ANSI/IWCA I-14.1 safety standard for fall arrest and suspended maintenance.
- **Custom design** for a variety of permanent attachments to reinforced concrete or structural steel. Summit roof and wall anchors can also be configured to fit virtually any structure.
- **Roof flashings** are available in stainless steel, copper or spun aluminum (Figure 1) with Ethylene Propylene Diene Monomer (E.P.D.M.) top and bottom grommets that do not require messy caulking around anchor (Figure 2).
- **Free design assistance** with layouts and code-compliance.
- **Anchors fabricated in the U.S.A.**

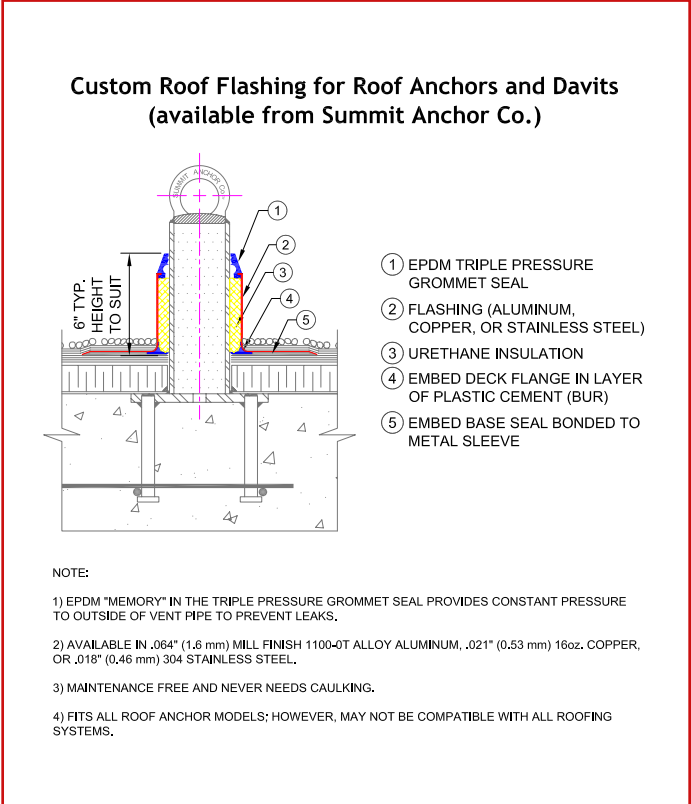


Figure 2

# Forging Process for Anchor Eyes



*Anchor Forgings being manufactured in a 2,500 lb Double Acting Erie Forge Hammer*



*Anchor Forgings being Trimmed & Pierced in 150 Ton Minster Trim Press*



*Trimmed & Pierced Anchor Forging dropping into material handling container*



*Close-up View of Trimmed & Pierced Anchor Forging*



Weld to Beam Roof Anchor (SM-4)



Cast in Place Balcony Anchor (SM-5)



Standard Wall Anchor (SM-81-4-10)



Cast in Place Roof Anchor (SM-5)

### Roof Anchor Bolted through Concrete Slab Summit Models: SM-1, SM-TRA, SM-PLT

**SM-1**

- FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
- HSS WELDED TO BASE PLATE, BASE PLATE SIZE AND ANCHOR HEIGHT TO SUIT APPLICATION.

**SM-FOM** (RECOMMENDED OPTION)

- MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.

**(4) SM-TRA**

- 5/8"Ø 304 B8 STAINLESS STEEL THREADED RODS WELDED TO 304 B8 STAINLESS STEEL HEAVY HEX NUTS AND GALVANIZED FLAT WASHERS.
- 5/8" GALVANIZED FLAT WASHERS, STAINLESS STEEL LOCK WASHERS, AND 304 B8 STAINLESS STEEL HEAVY HEX NUTS

**(4) SM-PLT**

- 3/8" THICK, A 36 BACK PLATES, SIZE DEPENDS ON SLAB THICKNESS, (BASED ON 3,000psi CONCRETE)

### Roof Anchor Mounted with Chemical Anchor Fasteners Summit Models: SM-1, SM-TRA-ADH-7

**SM-1**

- FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
- HSS WELDED TO BASE PLATE, BASE PLATE SIZE AND ANCHOR HEIGHT TO SUIT APPLICATION.

**SM-FOM** (RECOMMENDED OPTION)

- MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.

**(4) SM-TRA-ADH-7**

- GALVANIZED FLAT WASHERS AND 5/8"Ø HILTI HVA ADHESIVE ANCHOR SYSTEMS (SUPPLIED BY HILTI), USING 304 B8 STAINLESS STEEL HEAVY HEX NUTS, THREADED RODS, AND STAINLESS STEEL LOCK WASHERS. (THREADS DEFORMED AFTER INSTALLATION).

### Roof Anchor Mounted with Undercut Anchor Fasteners Summit Models: SM-1-10, SM-TRA-UND-5

**SM-1-10**

- FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
- HSS WELDED TO 10" x 10" x 5/8" BASE PLATE. MAXIMUM ANCHOR HEIGHT OF 10".

**SM-FOM** (RECOMMENDED OPTION)

- MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.

**(4) SM-TRA-UND-5**

- HILTI HDA-T-22 M12 X 125/30 UNDERCUT ANCHOR SYSTEMS, SUPPLIED BY HILTI. (ADD STAINLESS STEEL LOCK WASHER AND DEFORM THREADS AFTER INSTALLATION.)

### Cast In Place Roof Anchor Summit Model: SM-5

**SM-5**

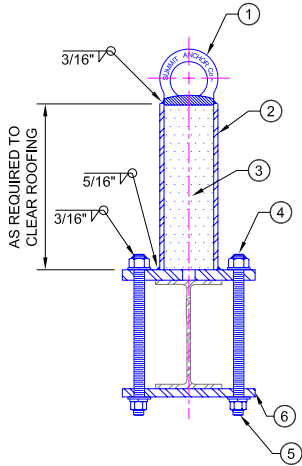
- FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
- HSS WELDED TO BASE PLATE AND SET FLUSH WITH CONCRETE SLAB, BASE PLATE SIZE AND ANCHOR HEIGHT TO SUIT APPLICATION.
- (4) 6-3/16" X 3/4"Ø STUDS WELDED TO BASE PLATE.

**SM-FOM** (RECOMMENDED OPTION)

- MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.

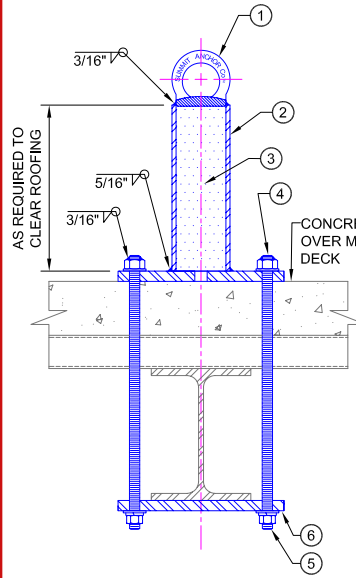
**NOTE:** Summit anchors are capable of supporting 5,000 lb. ultimate load and 1,250 lb. allowable load. Anchors may fail due to improper installation or inadequate supporting structure. Serious injury or death may result from anchor failure. Installation of anchors must be performed under the supervision of a professional engineer with experience in suspended access equipment. Additionally, anchors shall be tested under the supervision of a P.E. and certified before being placed into service.

**Roof Anchor Wrapped around Steel Beam**  
Summit Models: SM-1, SM-TRA, SM-PLT



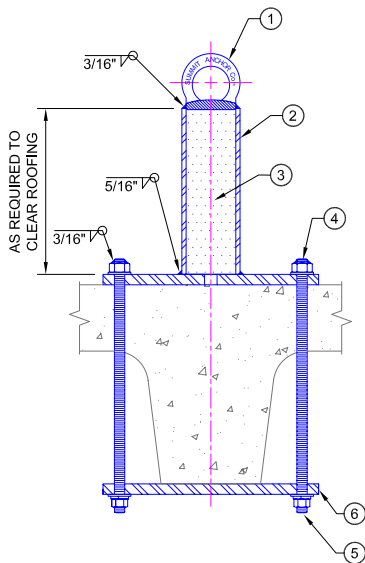
- SM-1**
- FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
  - HSS WELDED TO BASE PLATE. BASE PLATE SIZE AND ANCHOR HEIGHT TO SUIT APPLICATION.
- SM-FOM (RECOMMENDED OPTION)**
- MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.
- (4) SM-TRA**
- 5/8"Ø 304 B8 STAINLESS STEEL THREADED RODS WELDED TO 304 B8 STAINLESS STEEL HEAVY HEX NUTS, AND GALVANIZED FLAT WASHERS.
  - 5/8" GALVANIZED FLAT WASHERS, STAINLESS STEEL LOCK WASHERS, AND 304 B8 STAINLESS STEEL HEAVY HEX NUTS
- SM-PLT**
- BOTTOM PLATE TO FIT BEAM

**Roof Anchor Wrapped around Steel Beam and Slab**  
Summit Models: SM-1, SM-TRA, SM-PLT



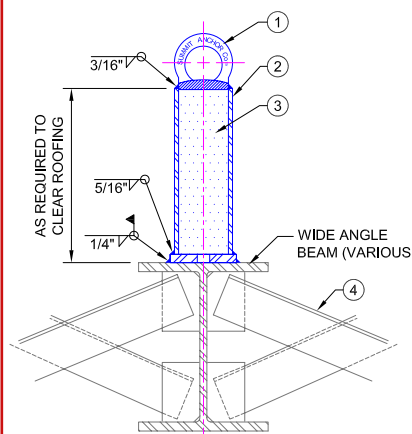
- SM-1**
- FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
  - HSS WELDED TO BASE PLATE. BASE PLATE SIZE AND ANCHOR HEIGHT TO SUIT APPLICATION.
- SM-FOM (RECOMMENDED OPTION)**
- MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.
- (4) SM-TRA**
- 5/8"Ø 304 B8 STAINLESS STEEL THREADED RODS WELDED TO 304 B8 STAINLESS STEEL HEAVY HEX NUTS, AND GALVANIZED FLAT WASHERS.
  - 5/8" GALVANIZED FLAT WASHERS, STAINLESS STEEL LOCK WASHERS, AND 304 B8 STAINLESS STEEL HEAVY HEX NUTS
- SM-PLT**
- BOTTOM PLATE TO FIT BEAM

**Roof Anchor Wrapped around Concrete Beam**  
Summit Models: SM-1, SM-TRA, SM-PLT



- SM-1**
- FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
  - HSS WELDED TO BASE PLATE. BASE PLATE SIZE AND ANCHOR HEIGHT TO SUIT APPLICATION.
- SM-FOM (RECOMMENDED OPTION)**
- MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.
- (4) SM-TRA**
- 5/8"Ø 304 B8 STAINLESS STEEL THREADED RODS WELDED TO 304 B8 STAINLESS STEEL HEAVY HEX NUTS, AND GALVANIZED FLAT WASHERS.
  - 5/8" GALVANIZED FLAT WASHERS, STAINLESS STEEL LOCK WASHERS, AND 304 B8 STAINLESS STEEL HEAVY HEX NUTS
- SM-PLT**
- BOTTOM PLATE TO FIT BEAM

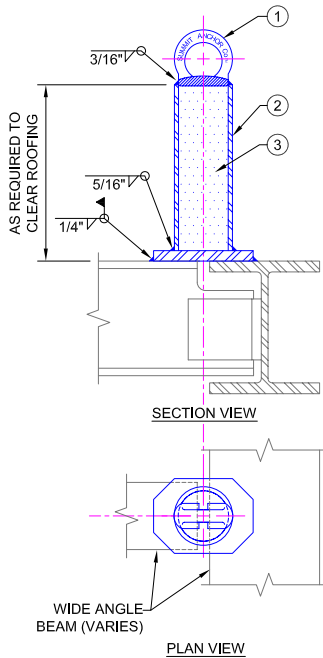
**Weld to Beam Roof Anchor**  
Summit Model: SM-4



- SM-4**
- FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
  - HSS WELDED TO BASE PLATE. BASE PLATE SIZE AND ANCHOR HEIGHT TO SUIT APPLICATION.
- SM-FOM (RECOMMENDED OPTION)**
- MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.
- SUGGESTED CROSS BRACING (BY OTHERS)**
- CROSS BRACING MAY BE REQUIRED TO SUPPORT LOADS. CONSULT P.E.

NOTE:  
IF BEAM FLANGE IS LESS THAN 5" WIDE,  
THE ROOF ANCHOR MUST BE WRAPPED  
AROUND THE BEAM INSTEAD OF WELDING  
TO THE BEAM. USE SUMMIT MODEL# SM-1.

**Weld to Beam Roof Anchor at 3-way Beam Intersection**  
Summit Model: SM-4-6



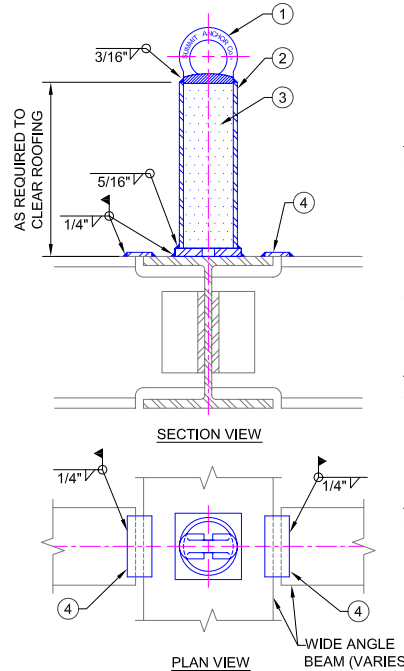
**SM-4-6**

- ① FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
- ② HSS WELDED TO 6" X 4-1/2" X 5/8" BASE PLATE. PLATE MUST OVERLAP BOTH FLANGES. ANCHOR HEIGHT TO SUIT APPLICATION.

**SM-FOM (RECOMMENDED OPTION)**

- ③ MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.

**Weld to Beam Roof Anchor at 4-way Beam Intersection**  
Summit Model: SM-4



**SM-4**

- ① FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO HSS. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.
- ② HSS WELDED TO BASE PLATE. BASE PLATE SIZE AND ANCHOR HEIGHT TO SUIT APPLICATION.

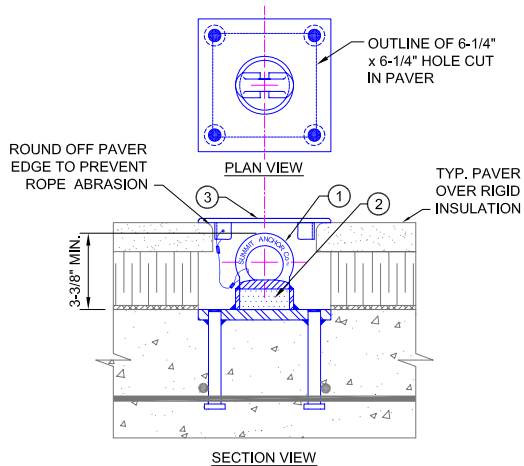
**SM-FOM (RECOMMENDED OPTION)**

- ③ MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.

**SPLICE PLATE BY OTHERS**

- ④ 1/4" SPLICE PLATE

**Recessed Balcony Anchor**  
Summit Models: SM-CAP-ANC and SM-1, SM-4, or SM-5



**ROOF ANCHOR**

- ① CHOOSE ROOF ANCHOR (SM-1, SM-4, OR SM-5) AND FASTENERS SUITABLE FOR APPLICATION. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.

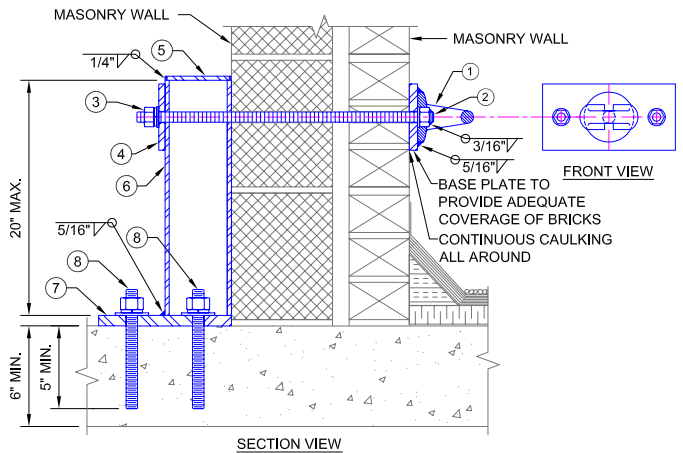
**SM-FOM (RECOMMENDED OPTION)**

- ② MOLDED URETHANE INSULATION TO REDUCE THERMAL TRANSFER AND CONDENSATION, COMMONLY USED IN GREEN CONSTRUCTION.

**SM-CAP-ANC**

- ③ 8" X 8" X 1/4" ALUMINUM COVER PLATE.

**Curb Anchor for Masonry Wall and Concrete Slab**  
Summit Models: SM-81-PLT-E, SM-TRA-ADH-7, SM-TRA, SM-81-4-8, SM-PLT-48-58-G



**SM-81-4-8**

- ① FORGED PAD EYE, QUENCHED AND TEMPERED (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED), WELDED TO 8" X 4" X 1/2" PLATE. ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.

**(2) SM-TRA**

- ② 5/8"Ø 304 B8 SS THREADED RODS WELDED TO 304 B8 SS HEAVY HEX NUTS, AND GALVANIZED FLAT WASHERS.
- ③ 5/8" GALVANIZED FLAT WASHERS, SS LOCK WASHERS, AND 304 B8 SS HEAVY HEX NUTS.

**SM-PLT-48-58-G**

- ④ 8" X 4" X 1/2" BACK PLATE.

**SM-81-PLT-E**

- ⑤ 3-3/4" X 3-3/4" X 1/4" CAP.

- ⑥ 4" X 4" X 1/4" HSS.

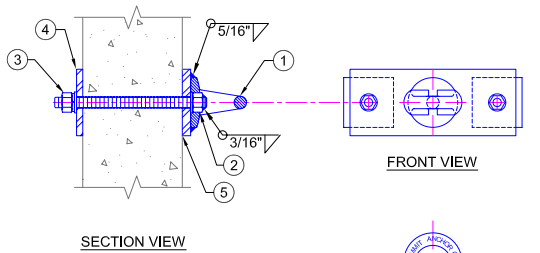
- ⑦ 8" X 8" X 5/8" STAINLESS STEEL BASE PLATE.

**(4) SM-TRA-ADH-7**

- ⑧ GALVANIZED FLAT WASHERS AND 5/8"Ø HILTI HVA ADHESIVE ANCHOR SYSTEMS, USING 304 B8 STAINLESS STEEL HEAVY HEX NUTS, THREADED RODS, AND STAINLESS STEEL LOCK WASHERS. (THREADS DEFORMED AFTER INSTALLATION).



**Wall Anchor Bolted through Concrete Wall**  
Summit Models: SM-81-4-10, SM-TRA, SM-PLT



**SM-81-4-10**

- ① FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO 10" X 4" X 1/2" PLATE, HOT-DIPPED GALVANIZED AFTER FABRICATION.

**(2) SM-TRA**

- ② 5/8"Ø 304 B8 STAINLESS STEEL THREADED RODS WELDED TO 304 B8 STAINLESS STEEL HEAVY HEX NUTS, AND GALVANIZED FLAT WASHERS.

- ③ 5/8"Ø 304 B8 HEAVY HEX NUT, STAINLESS STEEL LOCK WASHER, AND GALVANIZED FLAT WASHER (THREADS DEFORMED AFTER INSTALLATION).

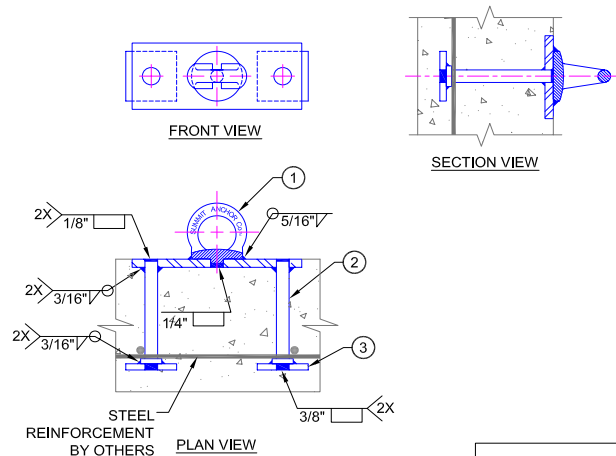
**(2) SM-PLT**

- ④ 3/8" THICK, A 36 BACK PLATES, SIZE DEPENDS ON SLAB THICKNESS, (BASED ON 3,000psi CONCRETE).

**CAULK**

- ⑤ CAULK ALL AROUND.

**Cast In Place Wall Anchor**  
Summit Model: SM-85-4

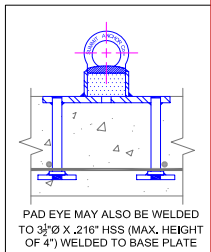


**SM-85-4**

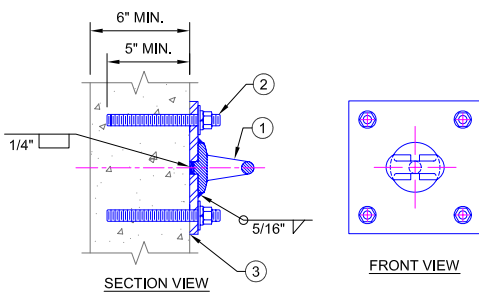
- ① FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO BASE PLATE, ENTIRE ANCHOR HOT-DIPPED GALVANIZED AFTER FABRICATION.

- ② (2) 6-3/16" X 3/4" STUDS WELDED TO 10" X 4" X 1/2" BASE PLATE.

- ③ (2) 3" X 3" X 3/8" PLATES WELDED TO STUDS.



**Heavy Duty Wall Anchor Mounted with Chemical Anchor Fasteners**  
Summit Models: SM-81-8-8, SM-TRA-ADH-7



**SM-81-8-8**

- ① FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO 8" X 8" X 1/2" STEEL PLATE HOT-DIPPED GALVANIZED AFTER FABRICATION.

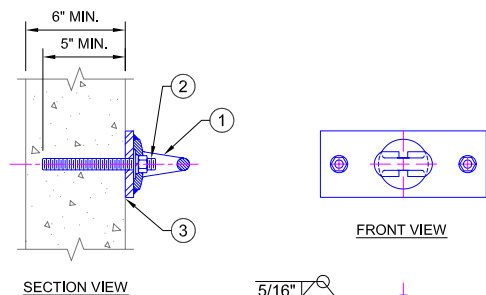
**(4) SM-TRA-ADH-7**

- ② GALVANIZED FLAT WASHERS, STAINLESS STEEL LOCK WASHERS, AND 5/8"Ø X 7" HILTI HVA ANCHORS (SUPPLIED BY HILTI) WITH 304 B8 STAINLESS STEEL THREADED RODS AND HEAVY HEX NUTS. (THREADS DEFORMED AFTER INSTALLATION).

**CAULK**

- ③ CONTINUOUS CAULKING ALL AROUND.

**Standard Wall Anchor Mounted with Chemical Anchor Fasteners**  
Summit Models: SM-81-4-10, SM-TRA-ADH-7



**SM-81-4-10**

- ① FORGED PAD EYE, QUENCHED AND TEMPERED, (ALSO AVAILABLE IN 304 STAINLESS STEEL, ANNEALED) WELDED TO 10" X 4" X 1/2" STEEL PLATE HOT-DIPPED GALVANIZED AFTER FABRICATION.

**(2) SM-TRA-ADH-7**

- ② GALVANIZED FLAT WASHERS, STAINLESS STEEL LOCK WASHERS, AND 5/8"Ø X 7" HILTI HVA ANCHORS (SUPPLIED BY HILTI) WITH 304 B8 STAINLESS STEEL THREADED RODS AND HEAVY HEX NUTS. (THREADS DEFORMED AFTER INSTALLATION).

**CAULK**

- ③ CONTINUOUS CAULKING ALL AROUND.

# Design and Layout

Experience and forethought is required to design a suspended maintenance system that is code-compliant and safe to utilize as well as install. The ANSI/IWCA I-14.1 Window Cleaning Safety Standard requires that “anchor design and layout shall be performed by a qualified person experienced in such design” (Appendix C). Summit Anchor Co. has years of experience designing code-compliant systems and providing layout drawings for use during installation, testing, and future maintenance work.

## Design Considerations

1. Carefully examine all pertinent structural and architectural project drawings to find areas requiring suspended access:
  - Windows located above 20 ft.
  - Building facade requiring periodic maintenance (i.e. re-caulking and waterproofing)
  - Areas above 6 ft. from grade that workers will need to access
  
2. Identify unique building features that may require additional suspended maintenance products:
  - Overhangs
  - Atriums
  - Sloped roofs
  - Roofs above 300 ft.
  - Cornice conditions
  - Balconies
  - Skylights
  - Rotundas
  - Sloped walls
  - Curtain walls
  - Canopies, signage, and other projections
  
3. Determine if anchors will be used with rope descent systems, as tie backs for swing stage equipment, or both.
  
4. Identify structural features to which anchors may be attached:
  - Roof slabs
  - Concrete curbs
  - Concrete beams
  - Concrete walls
  - Steel beams



*ANSI/IWCA I-14.1, sec. 5.7.12 states: “Rope descents shall not exceed 300 feet.” Therefore, buildings over 300 ft. are best suited with permanently installed powered platform.*



*Wall anchors may be mounted on structurally adequate curbs and parapets. A 42" parapet is required for such wall anchor applications or additional fall protection is required.*

5. Verify that structural features to which anchors and davits, etc. might be attached have the capacity to support the allowable, test, and ultimate loading requirements below. OSHA and ANSI/IWCA I-14.1 standards require that structural elements are capable of supporting loading requirements (see loading requirements below).
6. Verify the structural capacity of the parapet wall commensurate with the loading application (i.e. parapet clamps, outriggers, suspension lines, fall arrest lines, power cables, etc.) during suspended maintenance. If the parapet wall cannot support these loads, additional suspended maintenance products may be required to circumvent loading the parapet.
7. Verify that workers will be able to safely access anchor locations. The ANSI/IWCA I-14.1 requires fall protection when a maintenance worker must travel within 6 feet of an unprotected edge.

## Minimum Loading Requirements for Anchors

- 5,000 lb. Ultimate load
- 2,500 lb. Test Load
- 1,250 lb. Allowable load

Note: The structure to which anchorages are attached must also support the reactionary forces imposed by anchorages and davit, etc. (See [Specifications](#) for further detail.)



*Parapet must be capable of supporting the load imposed by workers.*

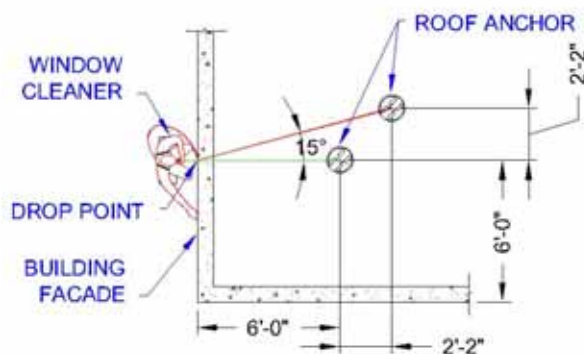


*A portable outrigger (shown above) or davit may be used to avoid overloading a parapet wall.*

## Anchor Layout Requirements

1. Anchors shall be identified on a plan of maintenance, typically posted on the inside of the roof door, so that workers can easily locate these anchorages on roofs.
2. Each worker shall be tied off to two independent anchorages – one for a fall arrest rope and one for a suspension rope.
3. Anchorages shall be placed in line with the work area requiring service, and there shall be no objects obstructing the path of the rope from the anchorage to the work area. Properly aligned anchors prevent unsafe lateral rope movement or displacement, which damages the rope proportionate to load.
4. Anchors should be placed to allow for at least two workers to make rope descending system descents in the same area of the building façade for both suspension line and fall arrest line.
5. Consideration should be given to providing sufficient anchorage for rescue workers to access window cleaners in the event that they are stranded on the façade of the building. (Click [HERE](#) to see why this is so important.)
6. Anchors shall not be placed within 6 feet (1800 mm) of an unprotected roof edge unless fall protection is provided. In most cases anchors can and should be placed further than 6 feet (1800 mm) back from the edge to reduce risk of falling.
7. Outside corners of the roof are of particular concern. Anchors must be located to prevent the rope from being displaced on the parapet/guardrail. See diagram below:

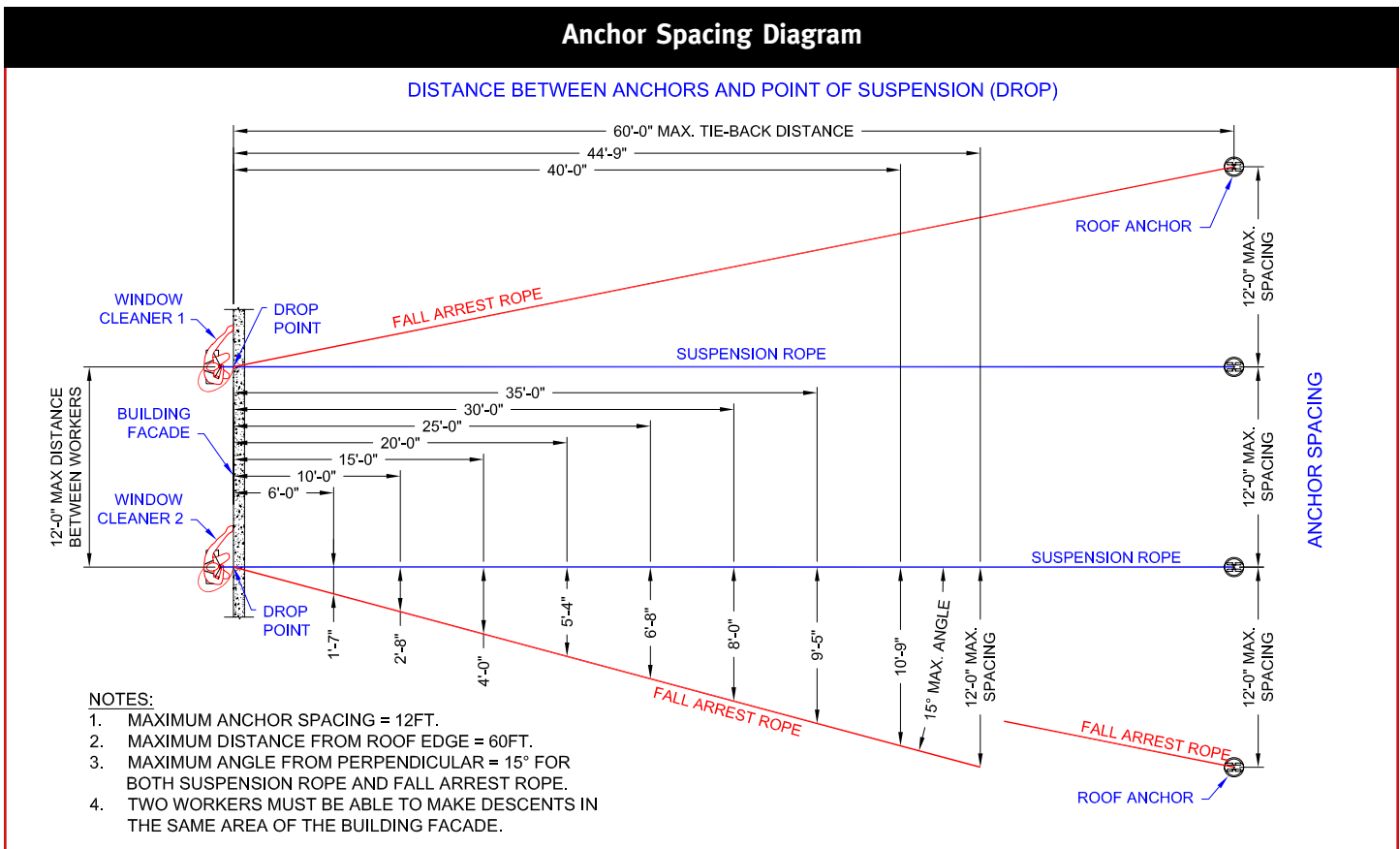
Outside Corner Layout Reference Diagram



**NOTES:**

1. AT OUTSIDE CORNERS, ANCHORS SHALL BE LOCATED TO PREVENT A ROPE FROM BEING DISPLACED ALONG THE ROOF EDGE.
2. WHILE SUSPENDED, WINDOW CLEANERS SHALL NOT REACH FURTHER THAN 6FT. (SEE ROPE DESCENT SYSTEMS (RDS) SECTION 5.7.10)

8. The diagram below illustrates the standards governing a safe placement of roof anchors:



Contact Summit Anchor Co. for assistance with your suspended maintenance layout:



To help give you an idea of what may be required to accommodate your project's suspended maintenance needs, Summit Anchor Co. offers design assistance free of charge. We will review your project's needs, and based on our expert experience we will offer suggestions for the correct type of equipment needed and the general locations where these should be installed.

Please provide us with the following information in the form of AutoCAD drawing files:

- Architectural and structural floor plans of any level where equipment is required

- Building elevations
- Section drawings of the parapet walls, penthouse walls, and roof
- Additional drawings showing relevant suspended maintenance on building facade

Call us today at 1.800.372.1098.