



CrystaLite, Inc. : Railing Packet

Your Clear Choice

Combining long lasting aluminum alloy posts and railings, with either tempered glass panels, aluminum pickets, or stainless steel cable; each railing system is strong, durable, weather resistant, and nearly maintenance free. This makes CrystaLite railing systems perfect for any application.

Railing Built to Last

CrystaLite railing systems feature the thickest walled posts and rails on the market; while maintaining narrow sightlines for maximum visibility. Known for strength, weather resistance, and long lasting performance, aircraft grade 6063-T6 aluminum alloy is used in all posts and top-rails.

Engineered for the Extreme

CrystaLite railings are structurally designed and stamped by an independent structural engineer - combining long lasting aluminum alloy posts and railings with all stainless steel concealed fasteners. Railing options include tempered glass panels, aluminum pickets, or stainless steel cable. Each railing system is strong, durable, weather resistant, and nearly maintenance free. CrystaLite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

System Overview

CrystaLite railing systems feature 6 unique top rail profiles for selection. Our 9000 is our most popular profile for guards and intermediate rails. The 9039 rail cap is designed to act as a grab rail in hand rail situations. The 9002, 9023, and 9036 profiles run over the top of our smaller posts. The 9023 and 9036 profiles are designed to butt clean-



ly with our 3-1/2" post. The 9002 and 9023 rail caps are semi-flat top railing - popular by those that prefer the 2 x 4 look and feel.

3 vertical post sizes are available and are utilized per configuration and loading requirements. Our largest 3.5" post can be used for general construction practices as one would use a standard wood 4 x 4 post.

The railing system is typically installed to a decking surface using our base plates which are mechanically fastened with stainless steel screws for maximum strength. Base plates are constructed from solid extruded aluminum and milled to final shape and size. This solid construction ensures a structural connection to the decking surface. Grooved bottom surface allows for a greater area for wet seal to adhere to, for applications that require sealant - such as water-proof membranes. Side mounting is also available.

Maximum Durability Finishes

CrystaLite railing is available in 6 standard colors applied using the latest technology resulting in a baked on gloss finish. Simply install it and enjoy it!

Flexibility in Design

Our railing is designed for straight runs, however we do a great deal of curves and radiuses as well. Curves are segmented into short runs and the rails are miter cut to the appropriate angles. With our alumi-

num end caps, you can mount our railing butted up directly to a wall which eliminates the need for an additional post. This is not uncommon in short runs on decks. Some of our home owners and contractors have used our railing systems in configurations we have not thought of.

Warranty Summary

This warranty provides against defects in material and workmanship for a period of ten (10) years from date of purchase, provided such units are installed in accordance with approved installation practices. Liability of the manufacturer is limited under this warranty to the replacement of the defective parts only, exclusive of shipping charges and installation of such replacement parts.



Glass Panel Railing

Available in a number of tints, they create the perfect windbreak without any loss of view. White obscure glass and many other patterned glasses are available to create privacy screens. Glass panels are excellent for exterior decks, balconies and stairs, yet sleek and elegant for interior railings.



You can extend your patio seasons, earlier Springs and longer Falls, by extending your glass panel railing system height to act as a wind break - a popular option for those that utilize patio fire places, hot tubs, and/or propane heaters.



Standard Glass Options & Laser Etched Glass

Standard bronze and grey tints available. Matelux, Rain, and Niagara glass are popular options for creating a privacy screen with our glass railing system. Pattern glass offered in Cannes, Caribe, Origami, No-vamat, and New Line styles. Laser Etched Glass is an alternative to pattern glass for creating a truly custom design; and installations which may require privacy blocking. (see top photo)



Picket Railing

Our picket railing is perfect for the classic home styles and some modern architectural designs. Picket railing is ideal for railing gates and allows for simple installation for stairs.



Cable Railing

Made from strong and weather resistant 1/8" stainless steel cable, it is excellent for exterior rails and fences, yet sleek and elegant for interior railings. The special easy-to-use fittings are hidden in the end posts.



All Stainless Cable and Fasteners

Cable assemblies are available separate from our aluminum rail system as well, and are available with 2 all stainless steel mounting options.

Infinity Railing

Enjoy an uninterrupted view with CrystaLite's new Infinity Railing system.

Glass guardrails are available utilizing our 2-1/2" (9006) or our solid 1/2" x 3" post with either 3/8" tempered glass (standard) or 3/8" fully tempered laminate (required for commercial).



Infinity Code Compliance

Infinity glass guardrail systems have been tested by a certified independent test laboratory to meet and exceed IRC, IBC, and ORSC applicable code requirements. Railing system performance has been certified by an independent structural engineer. Test reports and engineering analysis is available upon request.

All final decisions of code compliance are at the discretion of the local building authority. Always ensure approval by the local authority prior to installation.

Infinity System Options

3/8" tempered glass (standard) or 7/16" FTL (commercial).

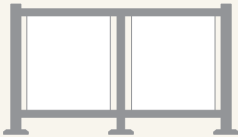
Glass Clips are available in white, brushed nickel, chrome, satin chrome, bronze, and black.

Available in either 36" or 42" heights.

Configurations

Traditional

This is our 'standard' railing configuration. It utilizes our smaller top rails to pass over our intermediate posts and butt to the sides of larger end posts. Installations done in this manner have far fewer cuts required and allows for the most flexibility.



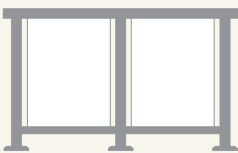
Post to Post

Post to post is just that, our top rails run and end at each post on a run. This is often chosen for aesthetic purposes.



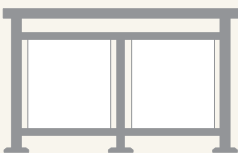
Over the Top

Our smaller top rails can run over the top of our intermediate posts; likewise our larger top rails can run over the top of both smaller posts. The result is a smooth continuous line that is a very popular form of installation.



Double Top Rail

This is an attractive utilization of our railing system which combines our method of going post to post with going over the top.

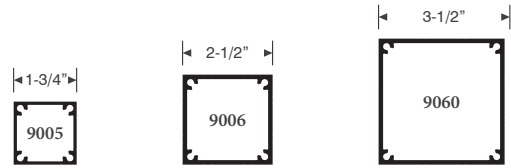


Top Rail and Posts Compatibility

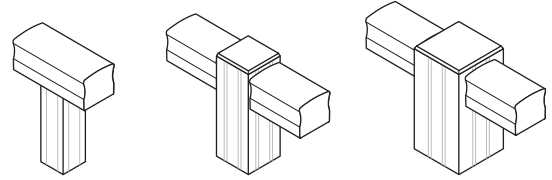
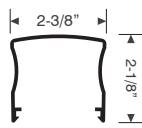
All top rails are designed to work with our glass, picket, and cable railing systems. The illustrations below detail how each model of top rail intersects with each post size.

Grab Rails

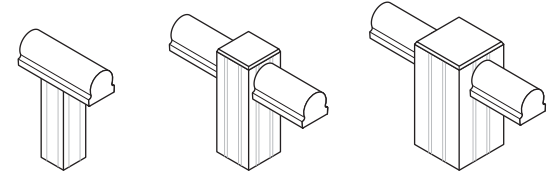
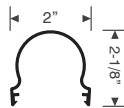
Our 9000, 9001, and 9039 top rails can be used as a grab rail for residential stairs when required. A round auxiliary rail is available for commercial applications as well.



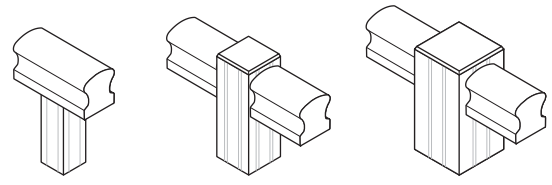
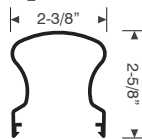
9000 Top Rail



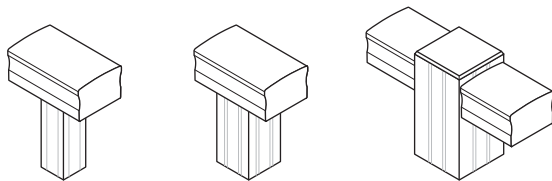
9001 Top Rail



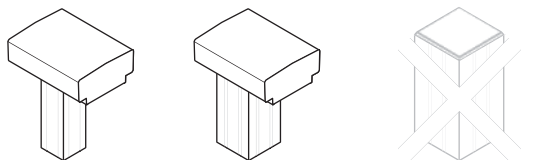
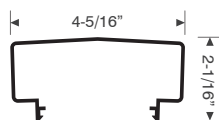
9039 Top Rail



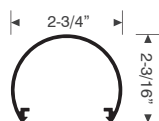
9023 Top Rail



9002 Top Rail



9036 Top Rail



Railing Height

The standard railing height for residential railing installations is 36" tall, and 42" for commercial. This is designated by the building codes minimal guard rail height regulations; however this does not prohibit railing heights from being higher.

For waterfront and other view property owners, a 36" tall railing system tends to put the top rail directly at eye level for a sitting person on a deck, thus blocking the view. For these installations a 42" tall system is often preferred to move the top rail above the sight line. Taller railing systems are also available to provide wind breaks as well as privacy screens with the use of obscure glass.



Railing down Stairs

Per both residential and commercial building code requirements, grab rails must be provided for stairs at a height of 36" (+/- 2"). For residential installations, the top rail can act as both the guard and the grab rail. Our 9039 top rail is designed specifically to do just that; and the 9000 and 9001 top rails are often deemed acceptable but at the discretion of the building inspector.



Grab Rails

Commercial railing installations typically require our 9020 auxiliary Grab Rail to be used since the top rail must maintain the 42" guard rail height requirements. Grab Rails include custom bent corners and returns to create a clean and smooth installation while comply with building code regulations.

Newel Posts

The newel posts designates the start and stop of railing installations on stairs and are needed to allow for both the top rails on the flat runs and the stairs portion to butt against the newel post. It is unlikely that a top rail can run over-the-top of a newel post and continue down the stairs while maintaining the height requirements.



Gates

Gates can be integrated into our railing systems using our standard railing parts and pieces with additional gate hardware. We carry a variety of gate hardware to suit most needs, including that for child locks for pool enclosures.

Glass railing is a popular option for our railing systems, but is highly not recommended to be used in gates. Glass is rather heavy and can cause problems when used in a gate since gates are only securely held with one post. A glass gate will put excessive force on that post which may cause it to pull away from its intended position. The weight of a glass gate also poses a danger to the occupants if not securely latched at all times. A glass gate suddenly pushed opened (or closed) by a gust of wind has the potential for serious injury.

However, pickets are excellent in gates. Picket gates are light weight and secure, while not detracting from the overall aesthetics of the railing system.



Best Yield

Railing systems are field cut on site from either 10'1" or 20' 2" stock lengths of top and bottom railing to provide job specific custom installation. When possible, it is best to plan a railing installation in 5 foot increments to obtain the best yield of purchased material.



Cable Railing

Made from strong and weather resistant 1/8" stainless steel cable, it is excellent for exterior rails and fences, yet sleek and elegant for interior railings. The special easy-to-use fittings are hidden in the end posts.

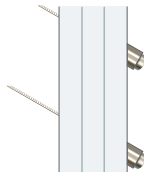
All Stainless Cable and Fasteners

Cable assemblies are available separate from our aluminum rail system as well, and are available with multiple mounting options.



Beveled Washers

Button End Quick Connects can be used for stair and slope runs with the aid of Beveled Washers to ensure the cable starts and stops at the proper angle.

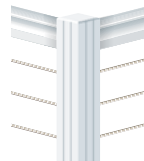


System Requirements

Cable runs are limited to 60 feet between anchor posts and 4 foot center spans for intermediate posts; 3 feet for commercial. Corners also require special attention:

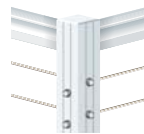
Wrapping Corners

Now with the new Corner Cable Adapter, cables are permitted to wrap up to 290° corners in a span. Shown with 9006 post and 9000 top rail. **Note:** Up to 4 corners using our 135° corner posts can be wrapped without the adapter insert.



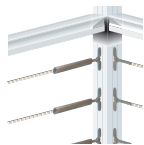
Offsetting Cable

Offsetting of joining cable runs at the corner posts; 3/4" offset is typical. Shown with 9006 post and 9000 top rail.



Turnbuckles

Surface Mount Turnbuckles can be used to keep all the cables in line. Shown with 9006 post and 9000 top rail.



Double Corner Posts

Using two vertical posts with a mitered top rail is commonly used with Side Mount applications. Shown with 9023 rail over 9006 posts.



Cable with Existing Wooden Posts

Cable assemblies purchased separate from our aluminum rail systems are often used to attach to, or go through, existing wooden posts and surfaces. It is recommended that our stainless sleeves are used when passing cable through wooden posts; in place of the rubber grommets typically used. This is to ensure that both the cable and the wooden posts are protected from wear over time. Also note that installations using wooden corner posts prohibit the ability of wrapping corners.



Railing 10 Year Limited Warranty

This warranty provides against defects in material and workmanship for a period of ten (10) years from date of purchase, provided such units are installed in accordance with approved installation practices. Liability of the manufacturer is limited under this warranty to the replacement of the defective parts only, exclusive of shipping charges and installation of such replacement parts.

CrystaLite, Inc. recognizes the design and construction of all portions of a building, including any materials application, are the responsibility of the Owner, Architect, Design Engineer, General Contractor, and /or other contractors. CrystaLite, Inc. has no control over field construction or installation. Therefore, CrystaLite, Inc. does not warrant the application, design, or construction of the railing system. This warranty shall be considered in effect only when CrystaLite, Inc. Railing Systems are installed by a professional contractor in accordance with standard installation practices.

Limitations on the Warranty:

- CrystaLite, Inc. will not warrant railing system parts if damage is caused by improper installation;
- CrystaLite, Inc. will not warrant railing system parts if damage is caused by improper maintenance. This warranty does not cover damage caused by inordinate traffic or damage by acts of nature;
- CrystaLite, Inc. will not replace railing system parts damaged as a result of negligence or abuse;
- CrystaLite, Inc. will not be liable for any loss, injury or damage to persons or property resulting from any defect caused by installation in the railing system supplied. This warranty does not cover any loss or damage, including damage to structure, its contents or its occupants.

This CrystaLite, Inc. limited 10 Year Product Warranty is a complete and exclusive statement of any and all representations, promises and warranties of CrystaLite, Inc. CrystaLite, Inc.'s sole obligation whether in contract, tort (including negligence) or otherwise shall be limited to replacing the railing system or refunding the original purchase price, at its option, which shall be your sole and exclusive remedy and, CrystaLite, Inc. shall never be liable for consequential, incidental, or special damages. Under no circumstances shall CrystaLite, Inc. be liable for any amount greater than the purchase price of the railing system purchased pursuant to this agreement. No warranties are given by any promises or statements on the part of any agent of CrystaLite, Inc., or any independent builder, installer and/or contractor.



Note: Remove all non pertinent information. Edit as required.

05 15 19 - Stainless Steel Wire Rope

05 73 00 - Decorative Metal Railing

05 73 13 - Decorative Glazed Railing

05 73 16 – Wire Rope Decorative Metal Railings

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Pre-engineered, component-based, glass infill panel aluminum railing system.
- B. Pre-engineered, component-based, cable wire aluminum railing system.
- C. Pre-engineered, component-based, aluminum picket railing system.

1.02 RELATED SECTIONS

- A. Section 05 73 13 – Glazed Decorative Metal Railings
- B. Section 05 73 00 - Decorative Metal Railing
- C. Section 05 73 16 – Wire Rope Decorative Metal Railings

1.03 REFERENCE

- A. American Architectural and Manufacturers Association
 - 1. AAMA 2604-05 Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings and Aluminum Extrusions and Panels.
 - 2. AAMA 603.8-92 Pigmented Organic Coating on Extruded Aluminum
- B. American Standards and Test Methods
 - 1. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
 - 2. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
 - 3. ASTM F1135 - Standard Specification for Cadmium or Zinc Chromate Organic Corrosion Protective Coating for Fasteners
- C. Quality Testing, Inc.
 - 1. QTI-M2007-112 Deck Post to Base Mount Summary Report 9005 Railing Post
 - 2. QTI-M2008-350 Deck Post to Base Mount Summary Report 9060 Railing Post
 - 3. QTI-M2008-351 Deck Post to Base Mount Summary Report 9006 Railing Post

1.04 DESIGN REQUIREMENTS

- A. International Building Code 2006
 - 1. Handrail and guard assemblies and attachments shall withstand a minimum concentrated load of 200 pounds applied horizontally or vertically down at any point on the top rail. Infill area of guard rail system shall be capable of withstanding a horizontal concentrated load of 200 pounds applied to one square foot at any point in the system. Load not to act concurrently with loads on top rail of system in determining stress on guardrail. Handrail assemblies and guards shall be designed to resist a load of 50 pounds per linear foot applied in any direction at the top and to transfer this load through the supports to the structure.
 - 2. Railing system(s) have been tested by an accredited testing laboratory and verified by an independent structural engineer to withstand the necessary load and exposure requirements.

1.05 SUBMITTALS

- A. Submit full scale shop drawings indicating methods of construction, location and spacing of anchorage, joinery, finishes, size, shape and thickness of framing members, relationship to adjoining work and glazing materials used.
- B. Submit structural calculations verified by an independent structural engineer licensed demonstrating compliance with the IBC and local codes.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original and unopened packaging with parts manifest.
- B. Store on site in a location and manner to avoid damage. Stacking should be done in a manner that will prevent bending. Store material in a clean, dry location away from high traffic areas. Any protection on the railings during transportation should remain until installed.
- C. Keep handling on site to a minimum. Exercise caution to avoid damage to finishes of material.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Drawings and specifications are based on products manufactured by:
 - CrystaLite, Inc.
 - 3307 Cedar Street
 - Everett, WA 98201
 - 1-800-666-6065
 - www.crystaliteinc.com
- B. Substitutions: Not permitted.

Note: Remove all non pertinent information. Edit as required.

2.02 MATERIALS

- A. Aluminum extruded components shall be alloy 6063-T6, of sufficient thickness for this application, and as required per structural calculations; ASTM B 221.
- B. Aluminum sheet and plate shall be alloy 5052-H32 per ASTM B 209.
- C. All welding shall be by the TIG process. All exposed welds to be finished to match frame color where practical.
- D. Glass infill panels shall be a minimum nominal thickness of 1/4" safety glass.
- E. Glazing pockets shall be rigid PVC with soft PVC glazing ribs co-extruded into pockets.
- F. Cables are 1/8" of type 316 stainless steel.
- G. Cable fittings, terminals, turnbuckles, and assorted hardware are of type 316 stainless steel.

2.03 FINISHES

- A. All standard colors are applied with PPG high-solids polyester resin coating. Thickness of coating shall be 1.0 mil nominal +/- 0.2 mil to meet AAMA 603.8-92 standard.
- B. Aluminate™ wood-like powder coat finish is compliant with strict AAMA 2604 standards.

2.04 FASTENERS

- A. Fasteners shall be cadmium-plated steel per ASTM F 1135 or stainless steel.
- B. Base plate fasteners into the mounting surface shall be determined per site specific criteria.

2.05 FABRICATION

- A. Railing system(s) shall be shop or field fabricated to match field conditions of job. All joints shall be tight.

PART 3 - EXECUTION

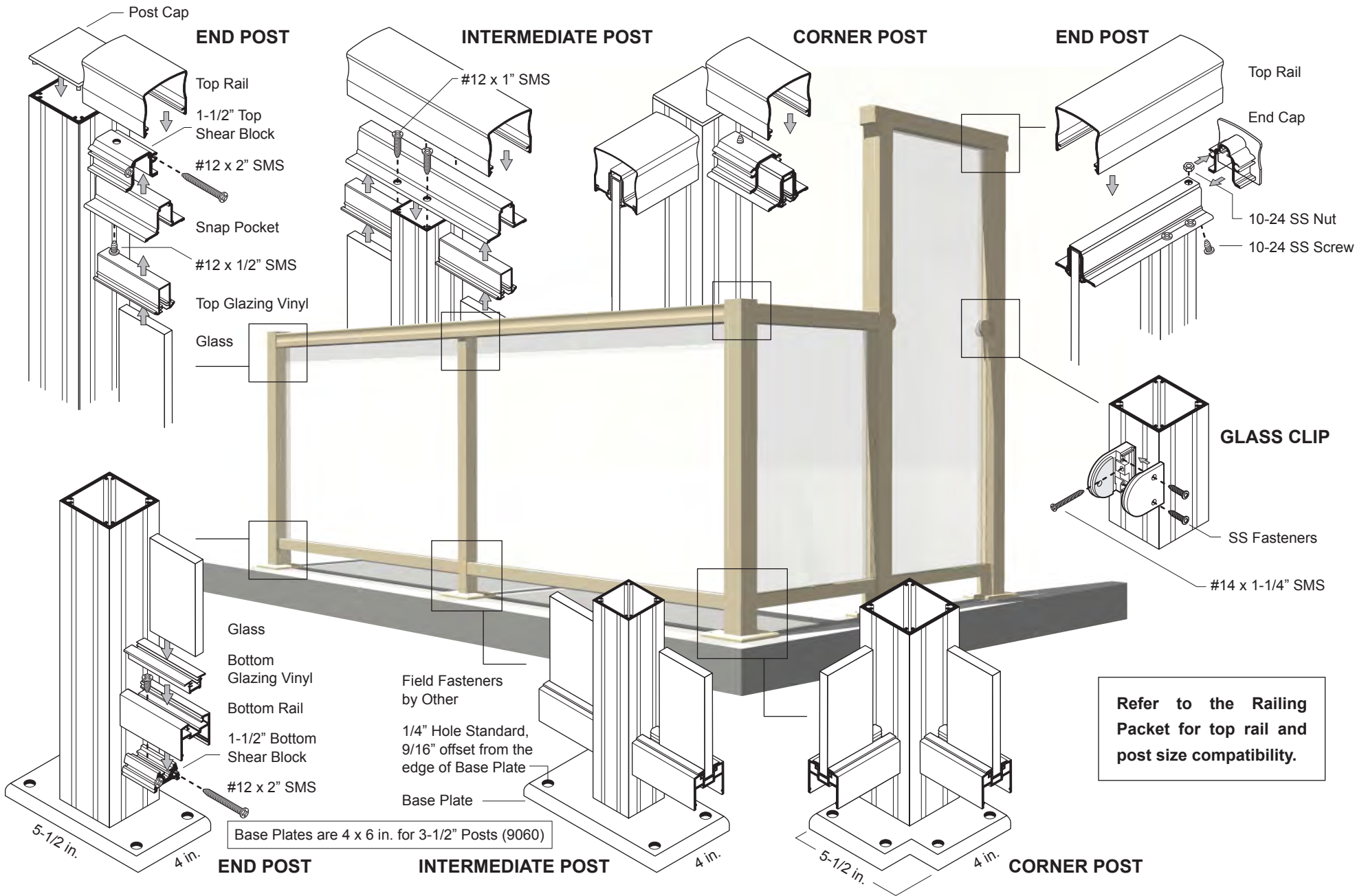
3.01 INSTALLATION

- A. Railings system(s) shall be installed and glazed by experienced workman in accordance with manufacturer's instructions, shop drawings and glazing standards.

3.02 CLEANING AND PROTECTION

- A. Subsequent to installation of railing system(s) the General Contractor shall be responsible for the cleaning and protection of all materials provided per this section, including, but not limited to glazing materials and framing members. No abrasive materials of any kind shall be used in cleaning of guardrail surfaces.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.



Glass Panel

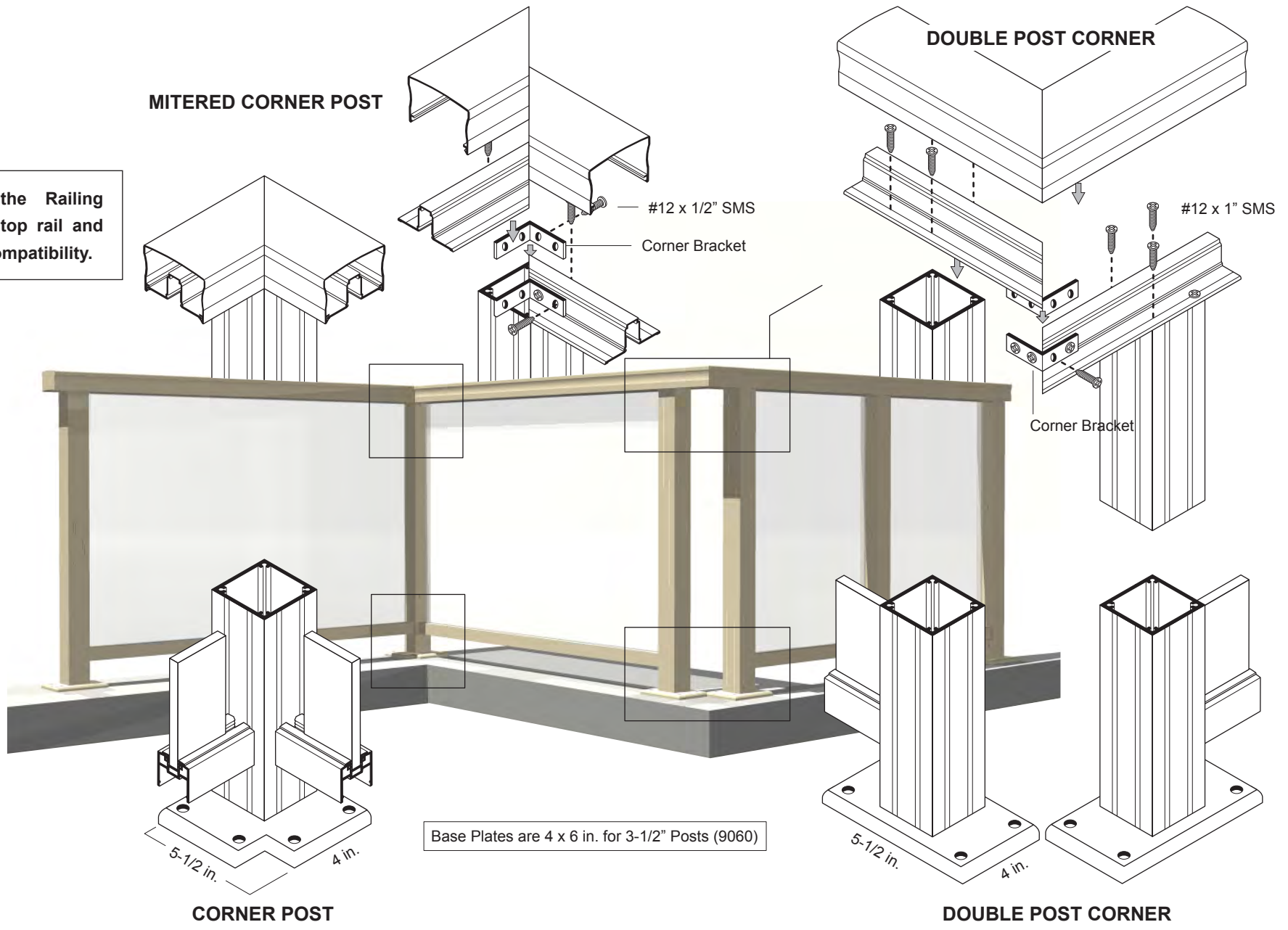
Aluminum Railing System

DECK MOUNT

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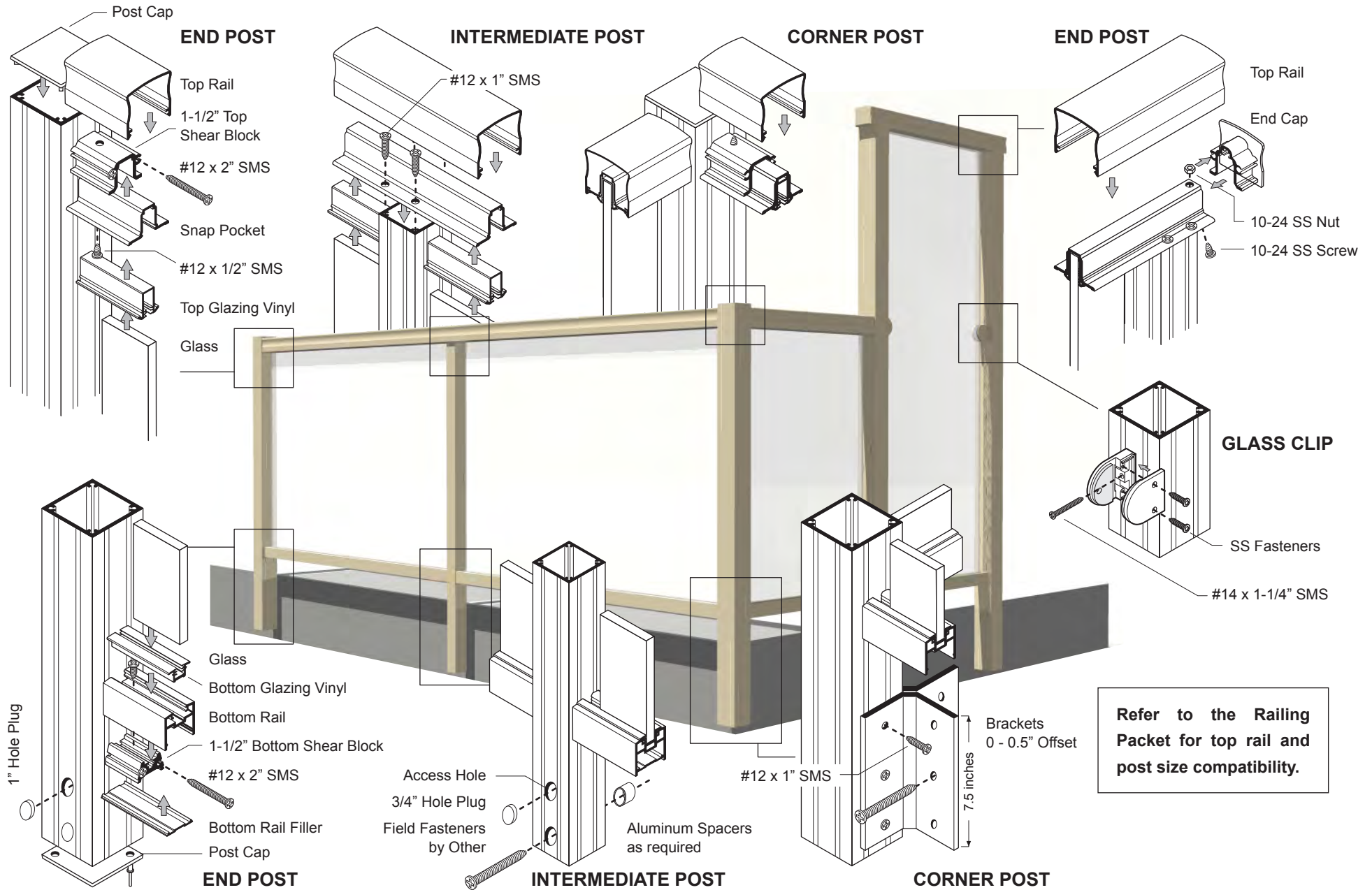
Refer to the Railing Packet for top rail and post size compatibility.



Glass Panel
 Aluminum Railing System
 DM - ALT. INSTALL DETAILS

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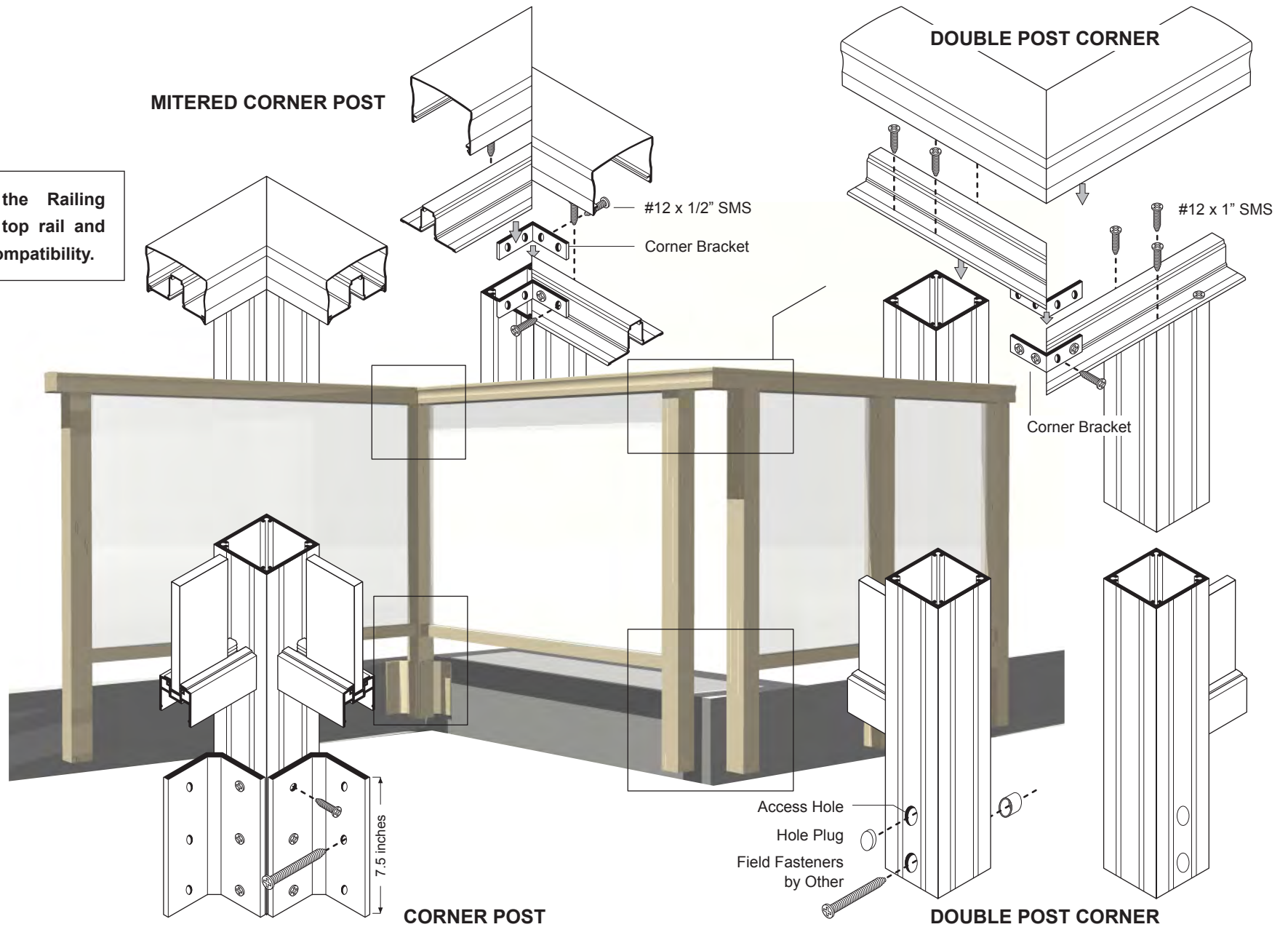


Glass Panel
 Aluminum Railing System
SIDE MOUNT

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Glass Panel
Aluminum Railing System

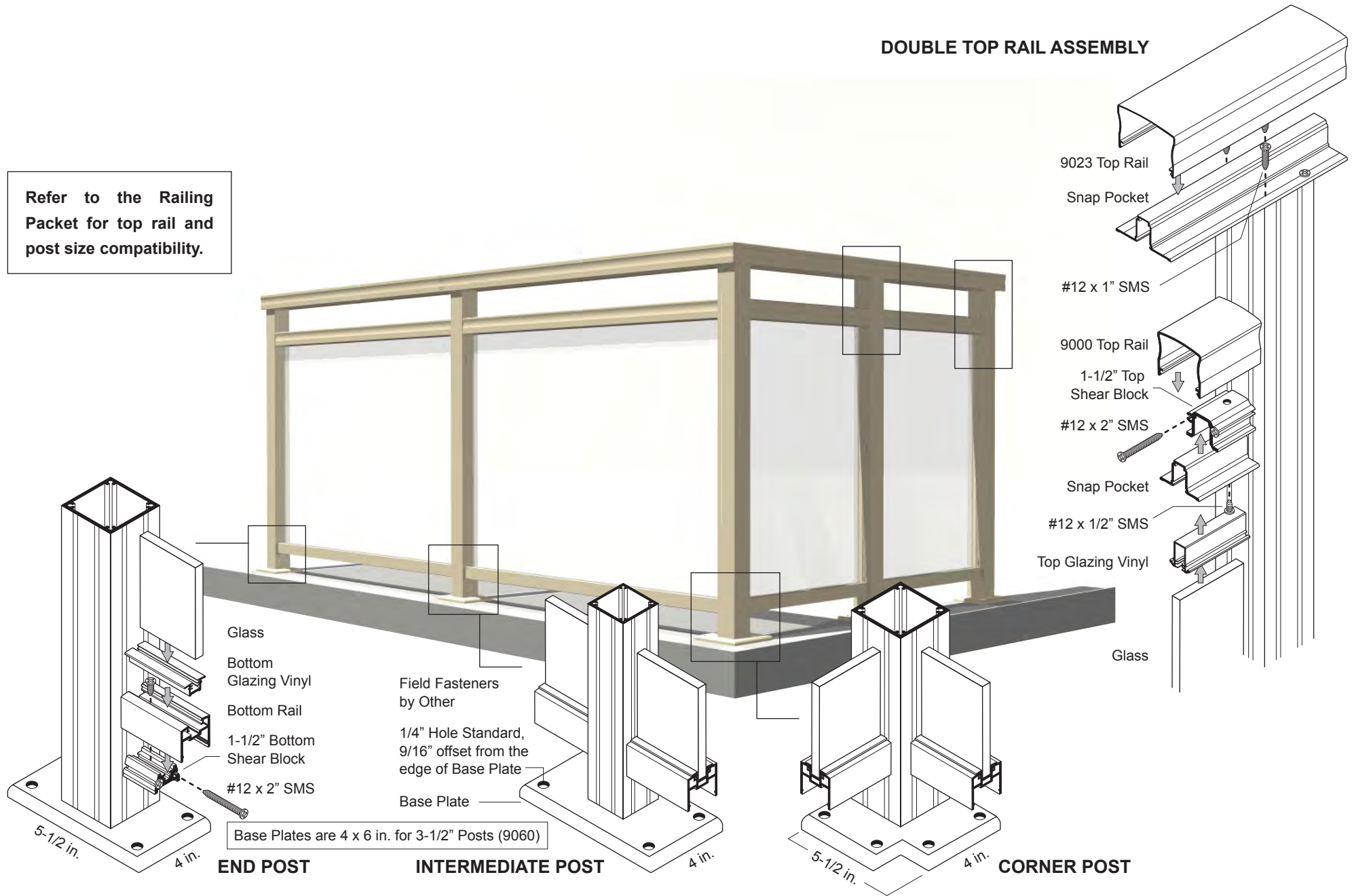
SM - ALT. INSTALL DETAILS

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DOUBLE TOP RAIL ASSEMBLY



Glass Panel

Aluminum Railing System

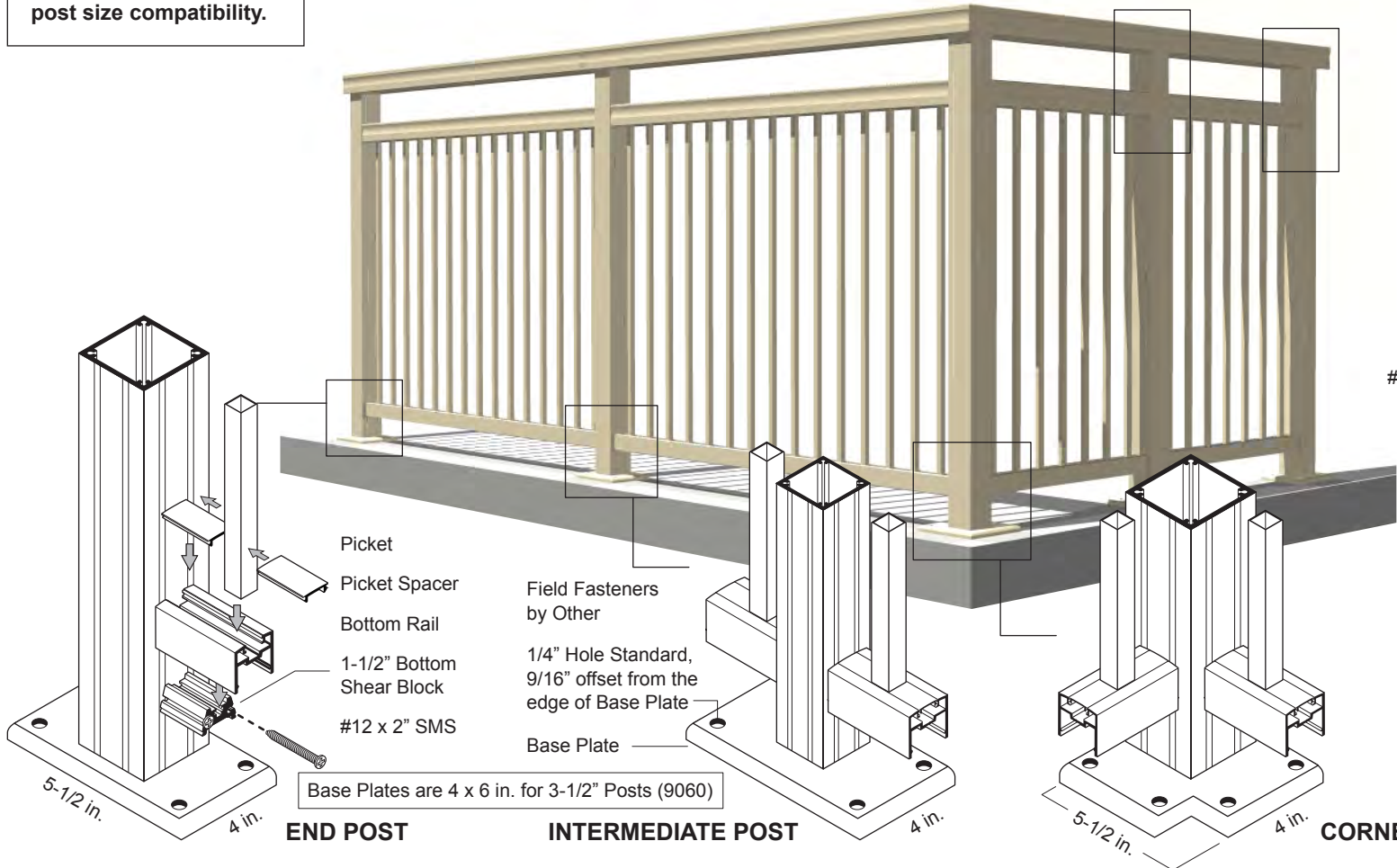
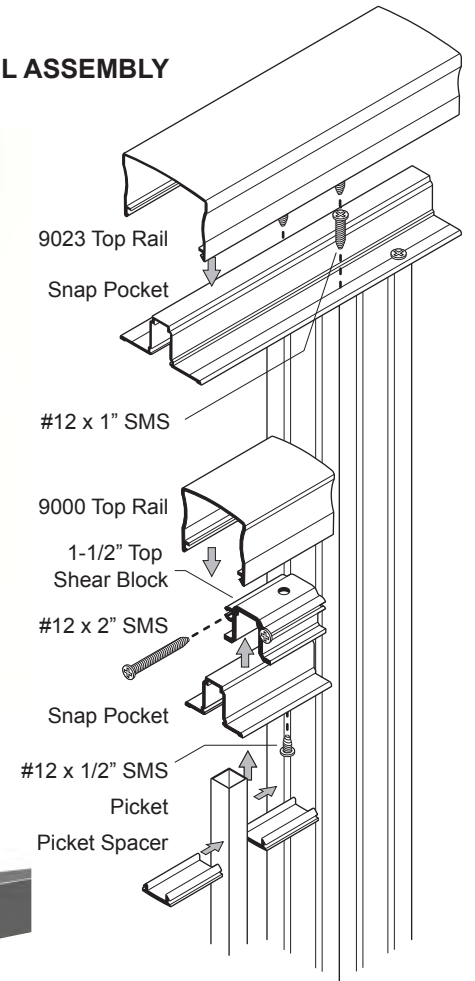
DOUBLE TOP RAIL

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Refer to the Railing Packet for top rail and post size compatibility.

DOUBLE TOP RAIL ASSEMBLY

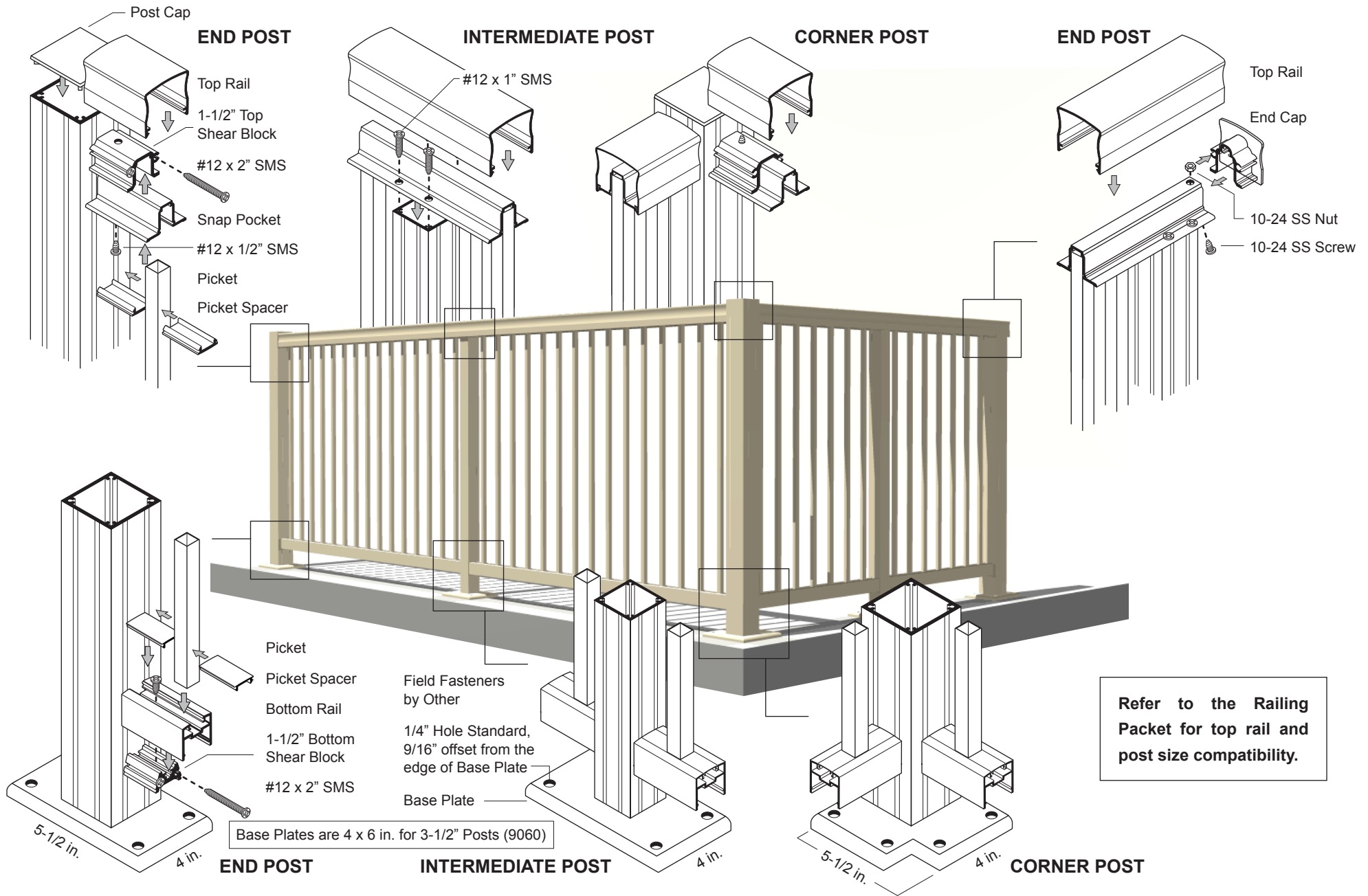


Aluminum Picket
Aluminum Railing System

DOUBLE TOP RAIL

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Aluminum Picket
Aluminum Railing System

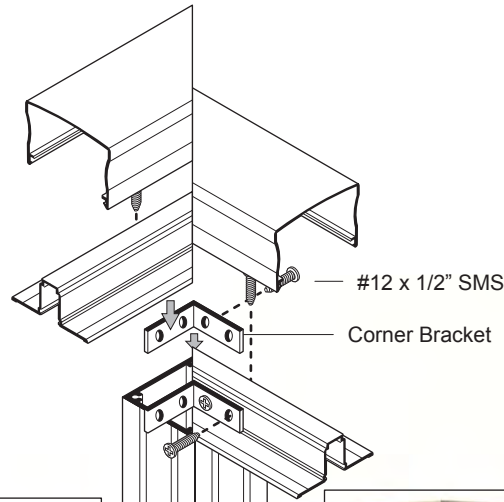
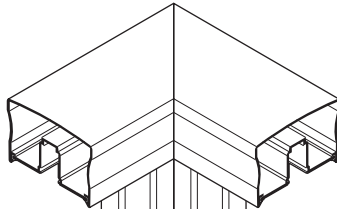
DECK MOUNT

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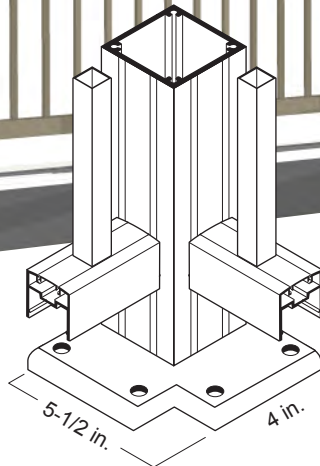
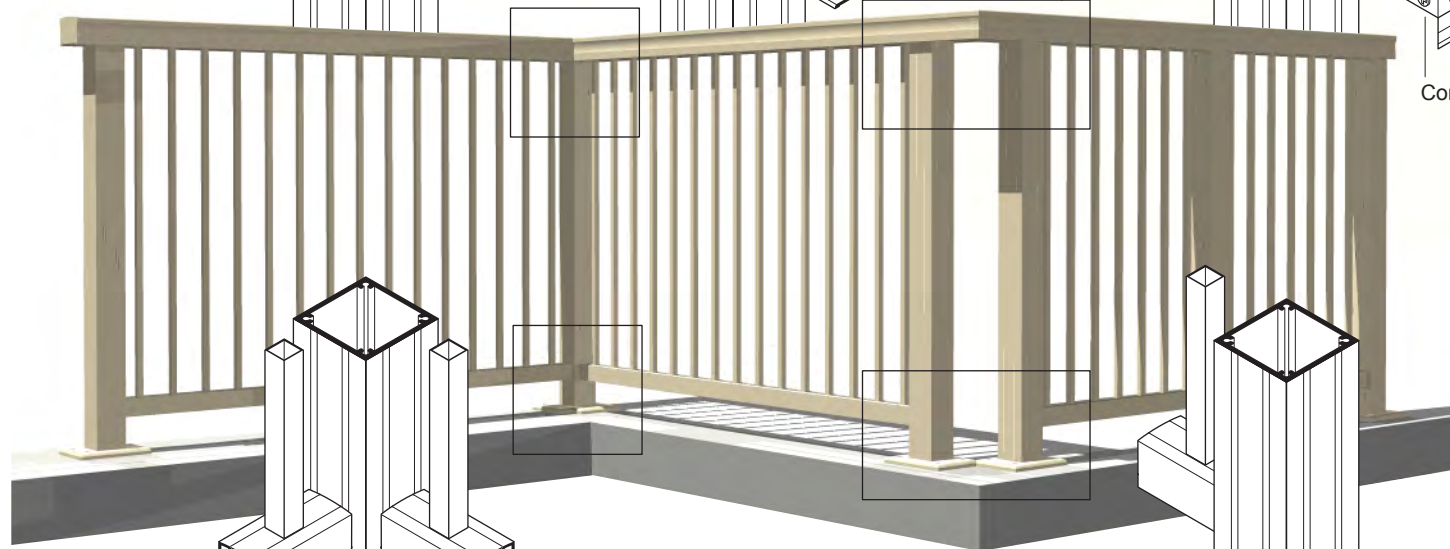
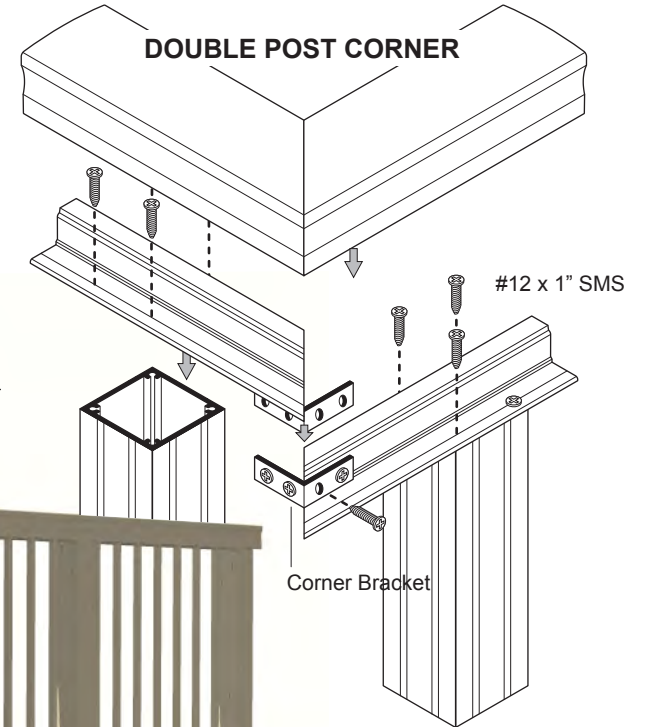
Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.

MITERED CORNER POST

Refer to Top Rails & Posts handout for top rail and post size compatibility.

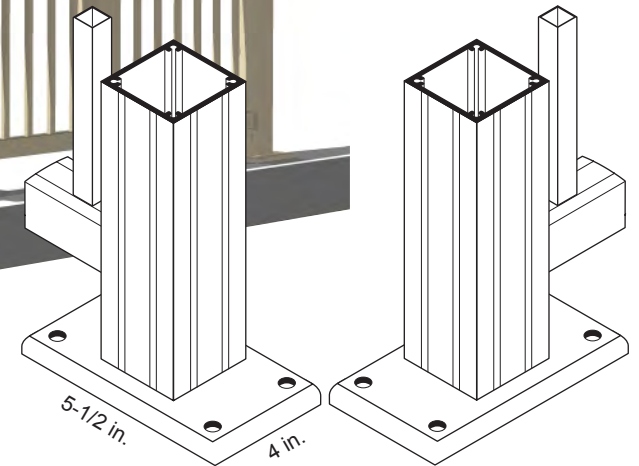


DOUBLE POST CORNER



CORNER POST

Base Plates are 4 x 6 in. for 3-1/2" Posts (9060)



DOUBLE POST CORNER



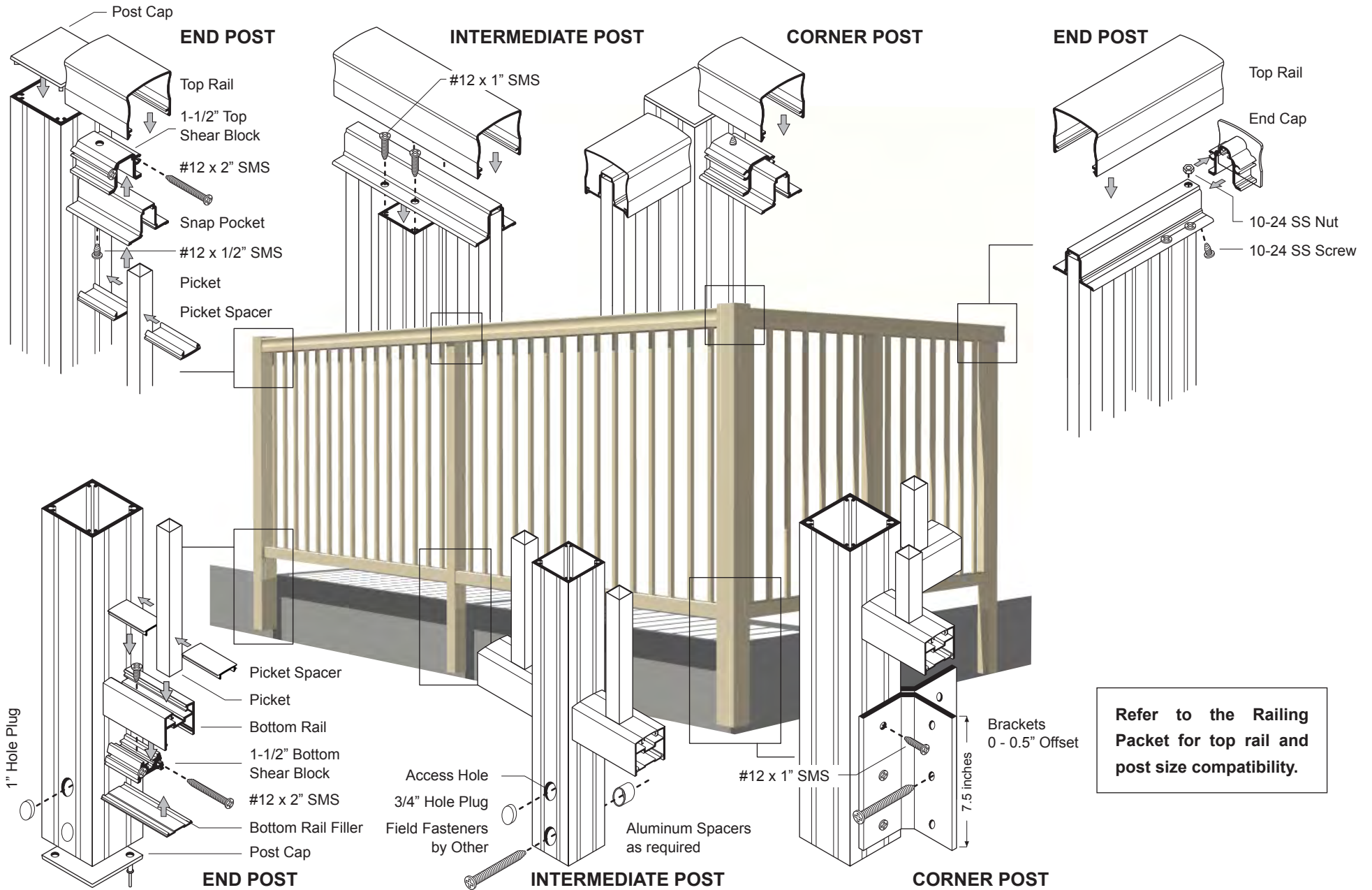
Aluminum Picket

Aluminum Railing System

DM - ALT. INSTALL DETAILS

Crystalite railings are structurally designed and stamped by an independent structural engineer. Crystalite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystalLiteInc.com.



Refer to the Railing Packet for top rail and post size compatibility.

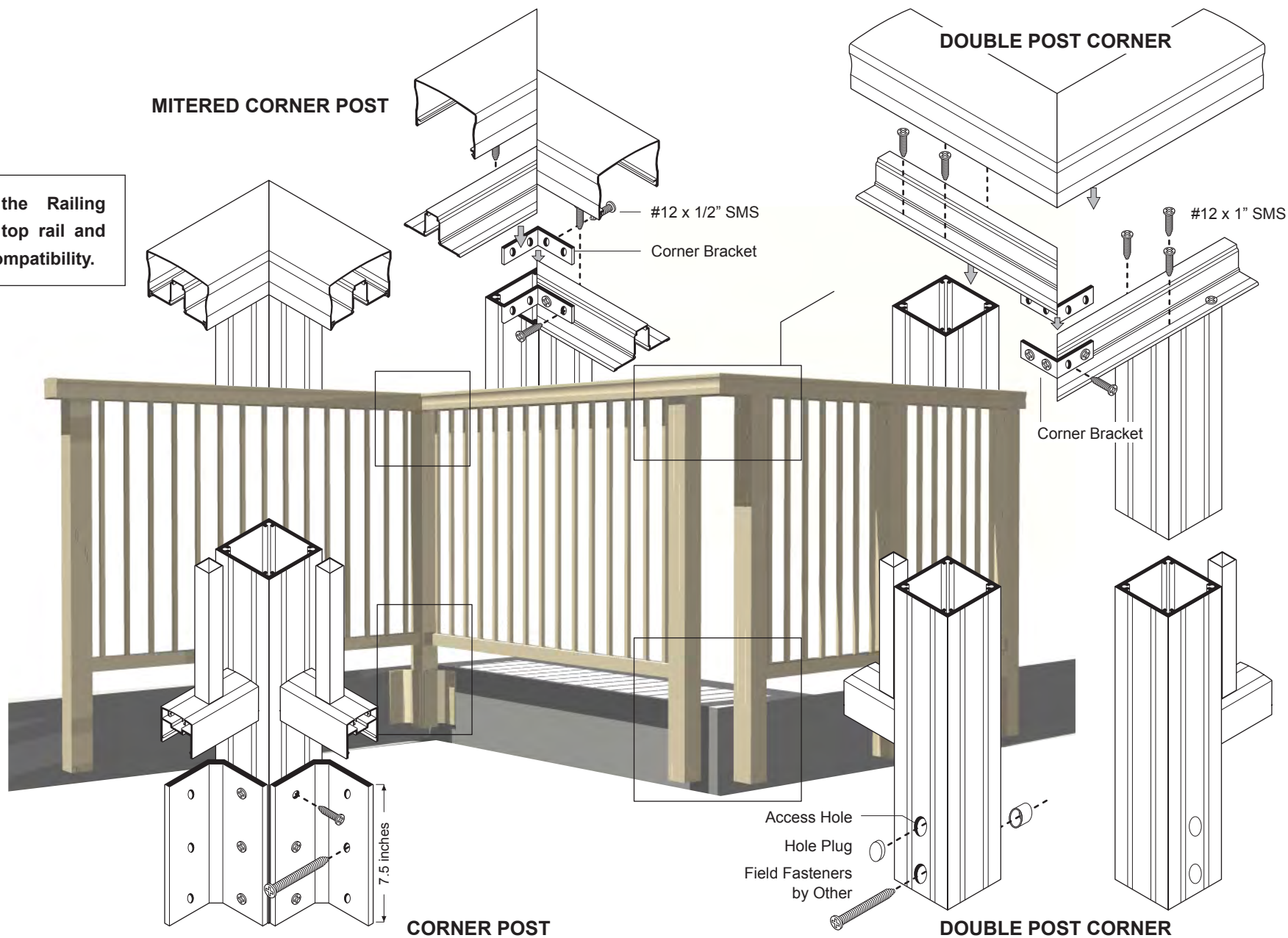


Aluminum Picket
Aluminum Railing System
SIDE MOUNT

CrystalLite railings are structurally designed and stamped by an independent structural engineer. CrystalLite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.

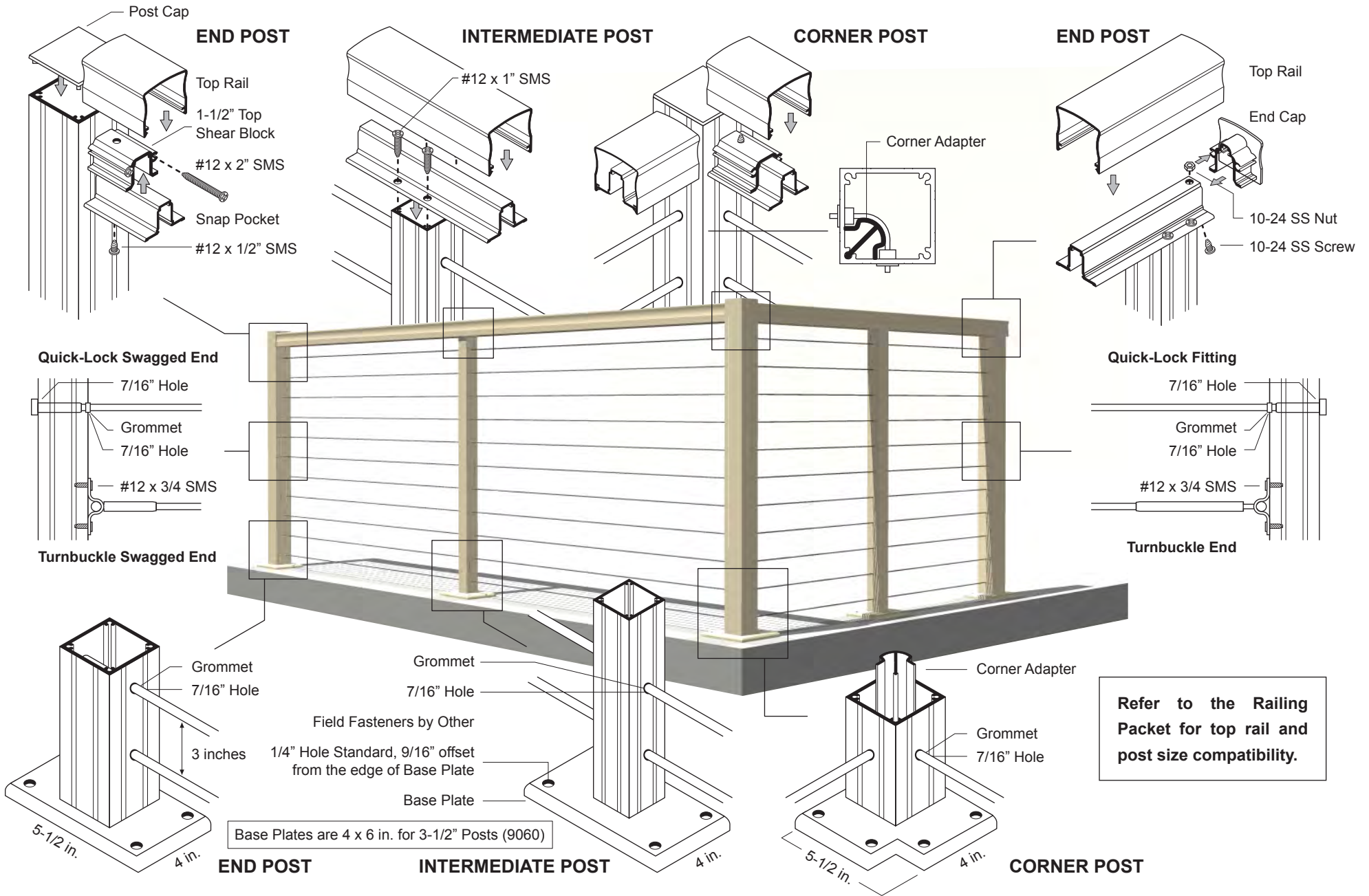
Refer to the Railing Packet for top rail and post size compatibility.



Aluminum Picket
Aluminum Railing System
SM - ALT. INSTALL DETAILS

Crystalite railings are structurally designed and stamped by an independent structural engineer. Crystalite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.



Stainless Steel Cable

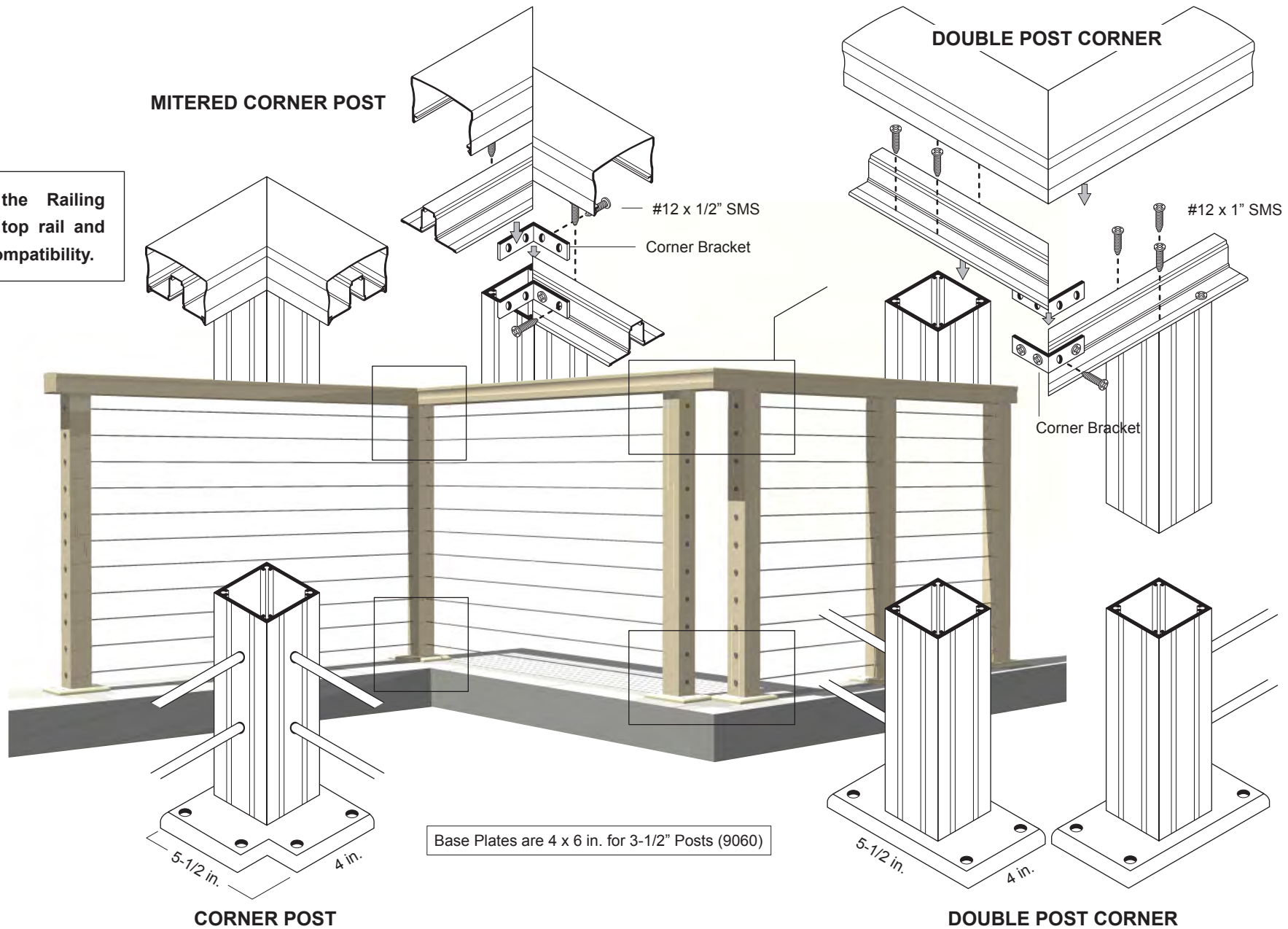
Aluminum Railing System

DECK MOUNT

Crystalite railings are structurally designed and stamped by an independent structural engineer. Crystalite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.

Refer to the Railing Packet for top rail and post size compatibility.



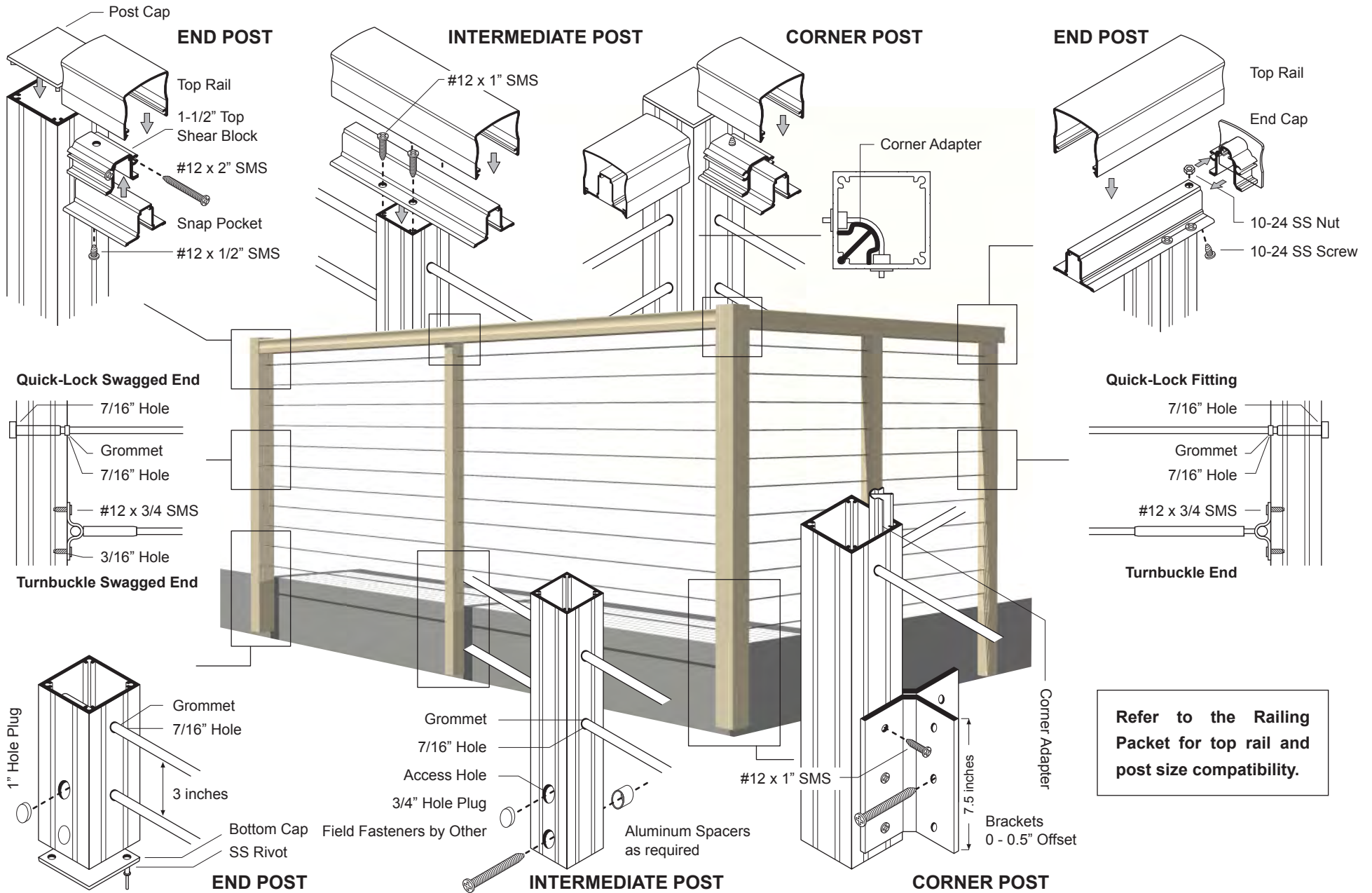
Base Plates are 4 x 6 in. for 3-1/2" Posts (9060)



Stainless Steel Cable
Aluminum Railing System
DM - ALT. INSTALL DETAILS

CrystaLite railings are structurally designed and stamped by an independent structural engineer. CrystaLite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.



Stainless Steel Cable

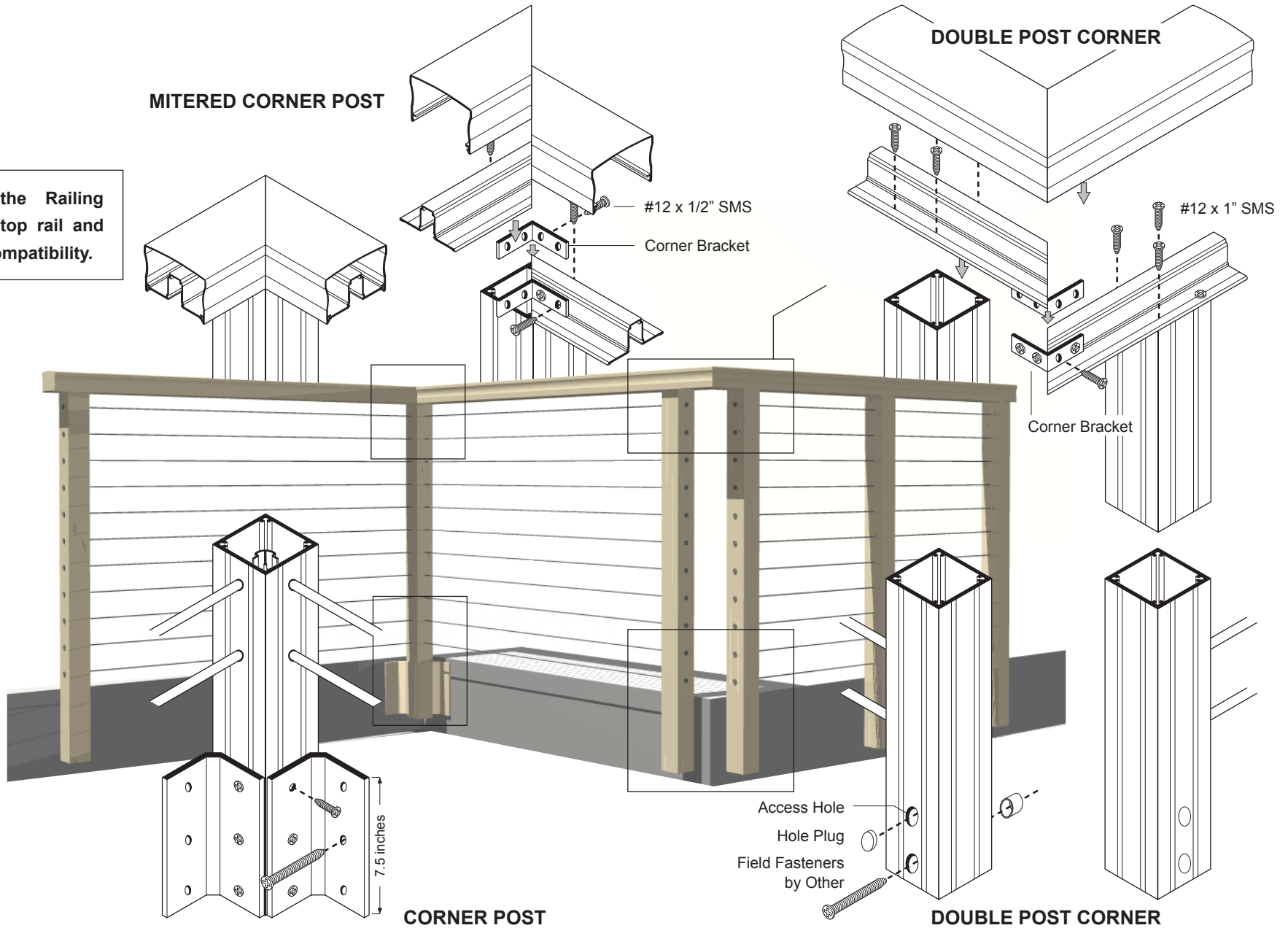
Aluminum Railing System

SIDE MOUNT

Crystalite railings are structurally designed and stamped by an independent structural engineer. Crystalite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.

Refer to the Railing Packet for top rail and post size compatibility.



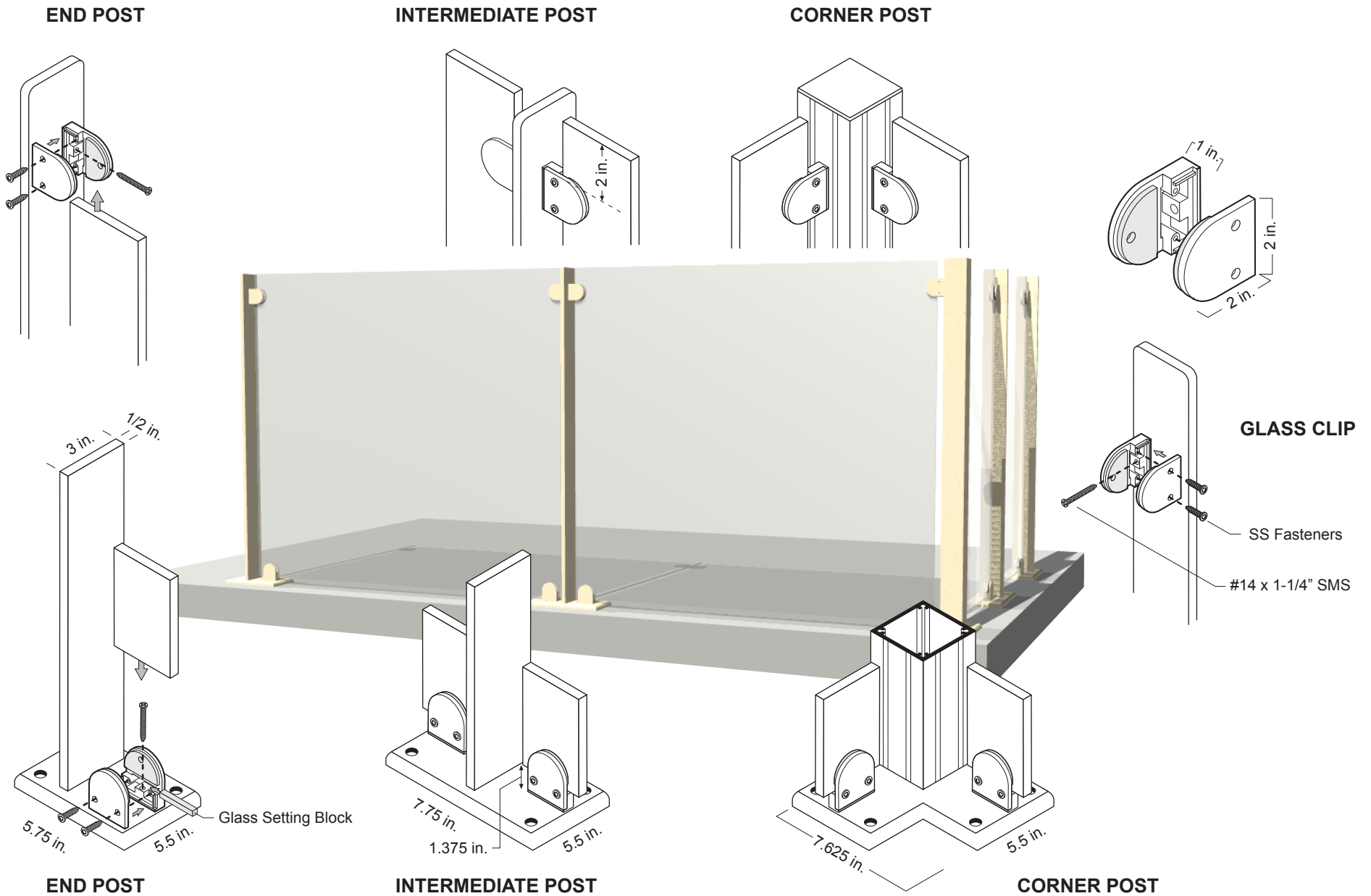
Stainless Steel Cable

Aluminum Railing System

SM - ALT. INSTALL DETAILS

CrystaLite railings are structurally designed and stamped by an independent structural engineer. CrystaLite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

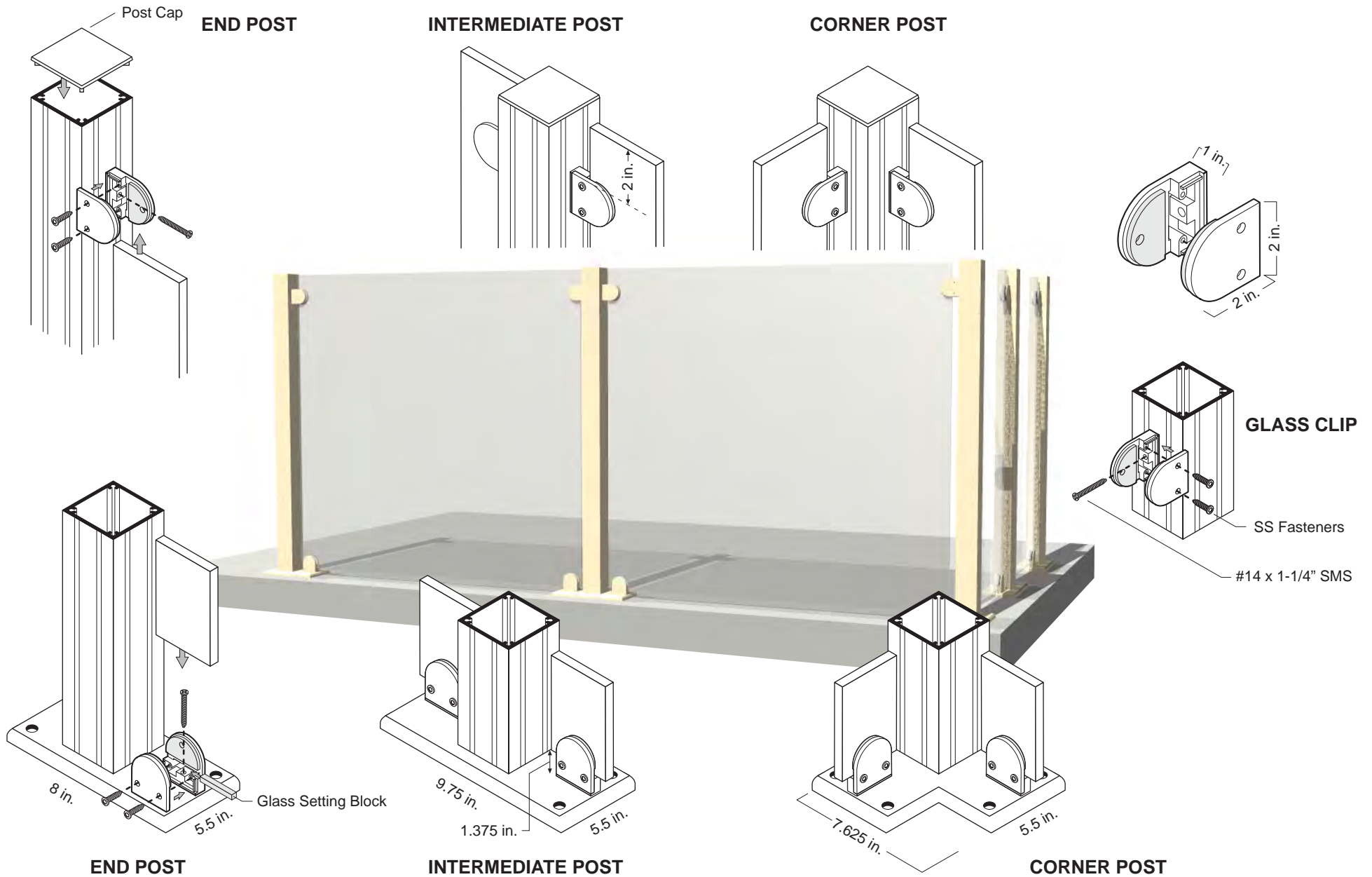
Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.



Infinity Railing System
 Glass Panel - Aluminum Railing
 SLIM - DECK MOUNT

Crystalite railings are structurally designed and stamped by an independent structural engineer. Crystalite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaliteInc.com.



Infinity Railing System

Glass Panel - Aluminum Railing

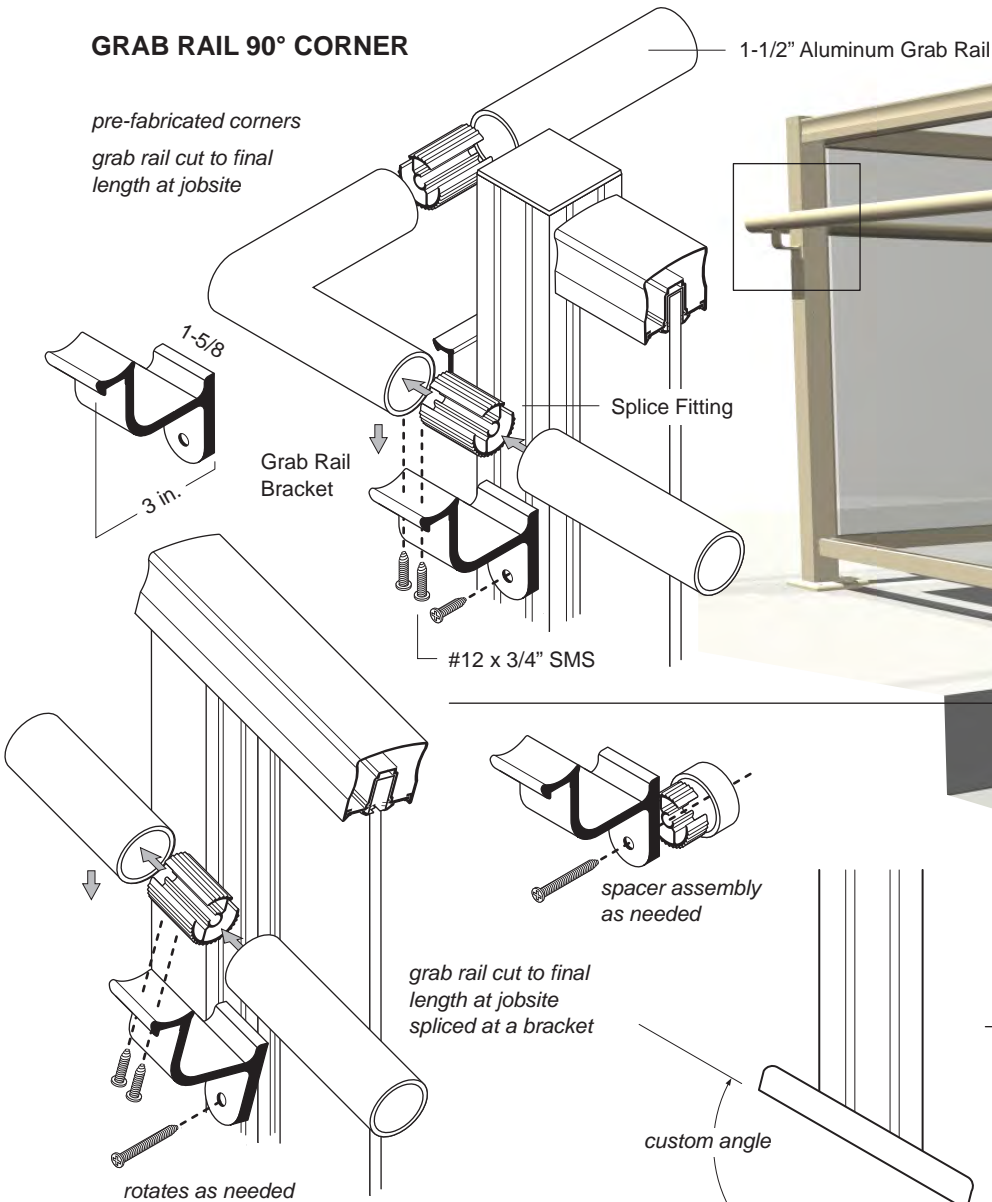
DECK MOUNT

Crystalite railings are structurally designed and stamped by an independent structural engineer. Crystalite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Details shown below are graphical representations only. For accurately scaled and dimensioned details, please visit www.CrystaLiteInc.com.

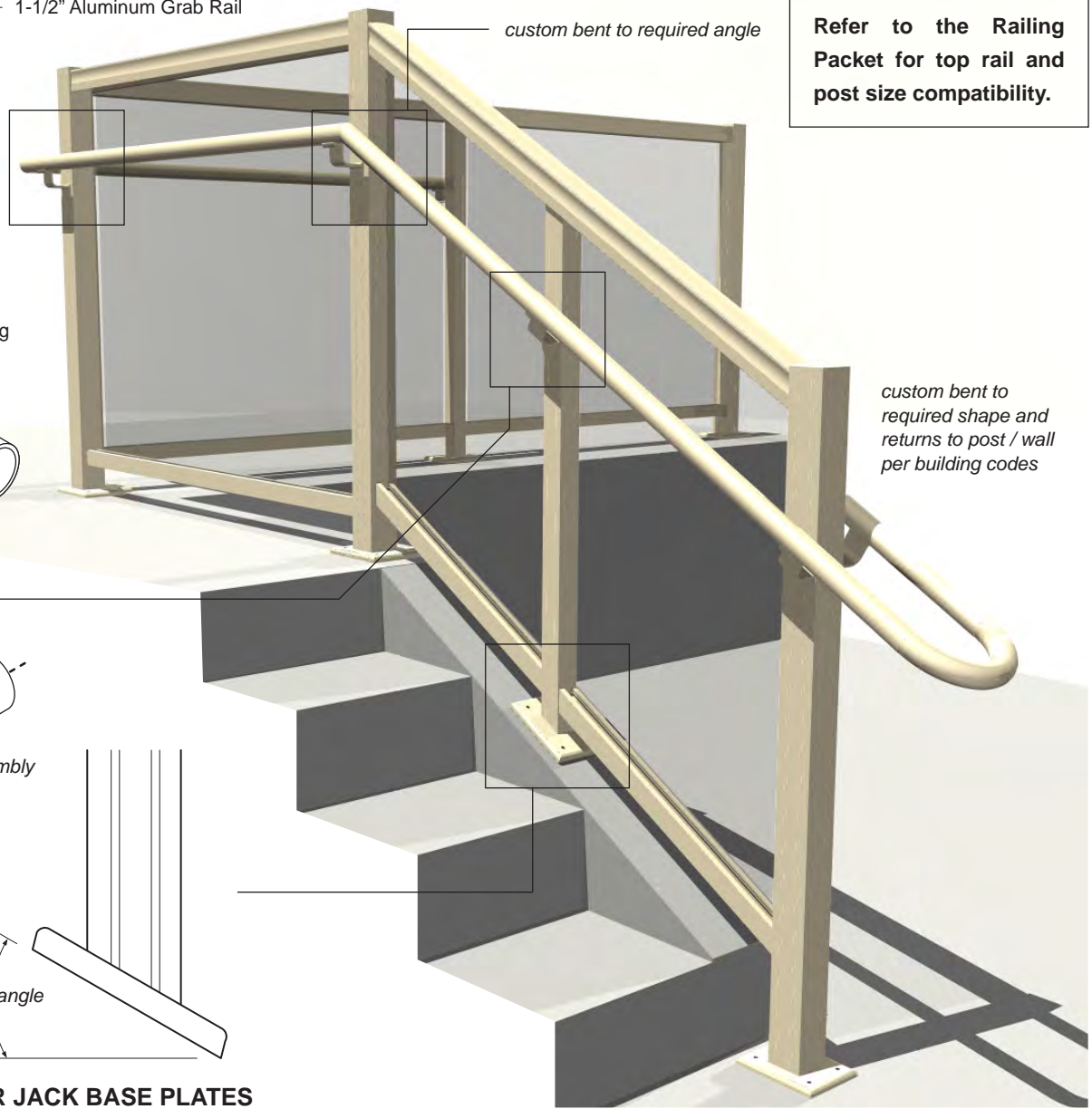
GRAB RAIL 90° CORNER

pre-fabricated corners
grab rail cut to final
length at jobsite



GRAB RAIL DOWN A SLOPE

STAIR JACK BASE PLATES



Refer to the Railing Packet for top rail and post size compatibility.



9020 Grab Rail
Aluminum Railing System

CrystaLite railings are structurally designed and stamped by an independent structural engineer. CrystaLite will select the appropriate post size and spacing to meet code requirements for Exposures B, C, and D with wind speeds up to 120 mph.

Before You Begin

The following technique is helpful for measuring glass openings in stair / sloped railing installations; particularly if you do not have a second person to help hold your tape. All measurements must be within a 1/16" of an inch for them to accurately go through a trig program used to double check that both diagonals coincide.

Tools Required

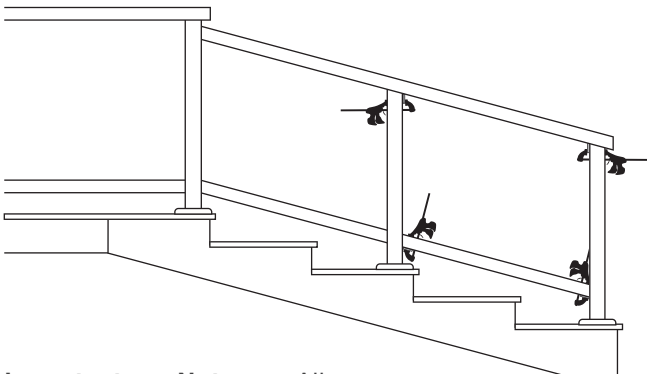
Along with an accurate measuring tape and the Rail Glass Measuring Sheet found in the center pages of the Railing Installation Guide (also available online) - you will need:

- 2 Quick Grip Clamps (provided by other)
- 4 Flat-Strips - 0.050 aluminum 3" x 5" - or like material

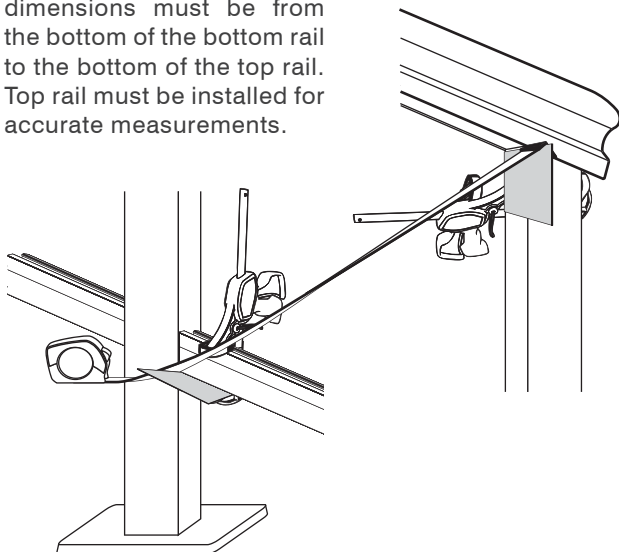
Important Note: It is crucial that this item be thin, for your measurements to be accurate.

Step One

Clamp a Flat-Strip to the inside of the vertical posts perpendicular to the run of the rail on the undersides of the top and bottom rails.

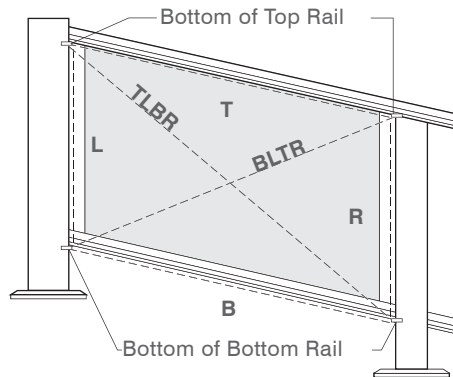
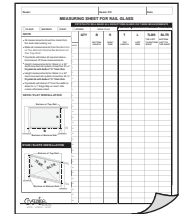


Important Note: All dimensions must be from the bottom of the bottom rail to the bottom of the top rail. Top rail must be installed for accurate measurements.



Step Two

Record all dimensions using the Rail Glass Measuring Sheet. CrystaLite will make all the necessary deductions based on the measurements provided.



Measure in a counter clock-wise order as shown on the sheet. **All measurements should be made from the deck looking out.** Hook your tape to the Flat-Strips to obtain accurate values.

1. B - Bottom Length
2. R - Right Side
3. T - Top Length
4. L - Left Side
5. TLBR - Top Left to Bottom Right
6. BLTR - Bottom Left to Top Right

Step Three

Repeat **Step Two** until all stair glass patterns are measured. Include side marks for each piece so it is easier to match the pieces of glass to their location during install.

| CRYSTALITE WILL MAKE ALL DEDUCTIONS BASED ON THESE MEASUREMENTS | | | | | | | | |
|---|-------------|--------------------|--|-----------------|----------------|----------------------------------|----------------------------------|---------|
| <input type="checkbox"/> OTHER | DECK / FLAT | | ADDITIONAL MEASUREMENTS FOR STAIRS / SLOPE | | | | | |
| MARK | QTY | B BOTTOM LENGTH | R RIGHT SIDE | T TOP LENGTH | L LEFT SIDE | TLBR TOP LEFT TO BOTTOM RIGHT | BLTR BOTTOM LEFT TO TOP RIGHT | |
| 1 | L1 | 1 | 46-1/2" | 32-1/16" | 46-1/2" | 32-1/16" | 60" | 52-3/4" |
| 2 | L2 | 1 | 48-1/4" | 30-7/8" | 48-1/4" | 30-3/4" | 65" | 48-1/4" |

Final Step

Have your dealer fax the completed Rail Glass Measure Sheet to CrystaLite, Inc. If you are having problems getting accurate measurements, please call from site and make sure the measurements go through our trig program. This may save you another trip to re-measure later.

Dealer: _____ Date: _____ Quote Only
 Dealer PO

Attn: _____ Phone: _____ Fax: _____

RAILING WORKSHEET

Provide a sketch of your deck dimensions _____ Indicate post size & locations with *(optional)*
 Indicate existing post locations with 1-3/4" (9005) 2-1/2" (9006) 3-1/2" (9060)

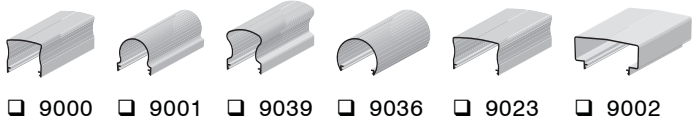
Indicate Stair Locations and Direction _____ Standard CrystaLite Details _____

Estimated Dealer Cost _____ quote good for 30 days
 Total Lineal Feet _____

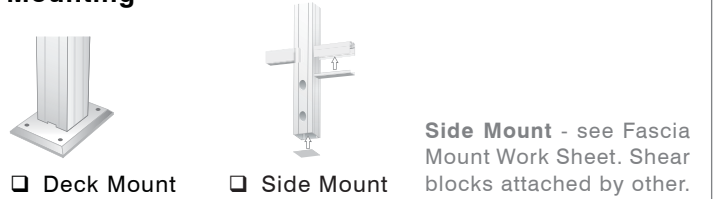
Color

- White Almond Green Bronze
 Grey Black Custom _____

Top Rail



Mounting



Height

- 36" residential 42" commercial Other _____

Railing System

- Flats:** 1/4" Glass 5/8" Picket 1/8" SS Cable
Stairs: 1/4" Glass 5/8" Picket 1/8" SS Cable
Gates: 1/4" Glass 5/8" Picket 1/8" SS Cable

Misc.

- Glass Color:** (if applicable)
 Clear Bronze Gray _____
Note: Glass ordered after measurement of installed railing.

Deck Material: _____

Field Measure by: CrystaLite Other _____

Installed by: CrystaLite Other _____

FOB: Dealer Jobsite

Notes

Dealer

Dealer PO

Date

MEASURING SHEET FOR RAIL GLASS

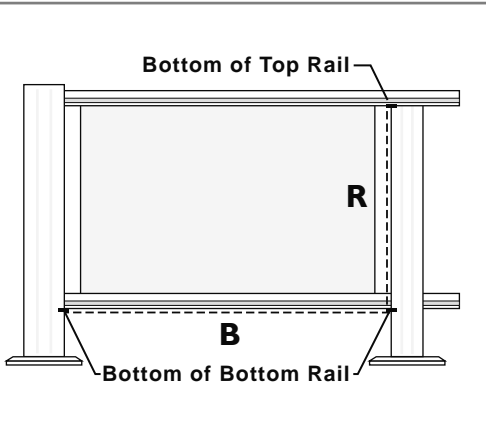
CRYSTALITE WILL MAKE ALL DEDUCTIONS BASED ON THESE MEASUREMENTS

CLEAR BRONZE GREY OTHER DECK / FLAT **ADDITIONAL MEASUREMENTS FOR STAIRS / SLOPE**

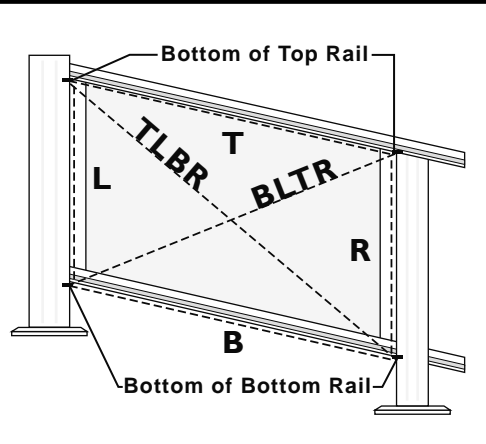
NOTE

- All measurements should be made from the deck side looking out.
- Make all measurements from the Bottom of the Bottom Rail to the Bottom of the Top Rail.
- CrystaLite will make all required deductions based off these measurements.
- Height measurements for Glass in a 36" deck mounted rail system should be 30 7/8" **CrystaLite will deduct 7/8" from this.**
- Height measurements for Glass in a 42" deck mounted rail system should be 36 7/8" **CrystaLite will deduct 7/8" from this.**
- CrystaLite will deduct 2" from the width to allow for a 1" Edge Gap on each side unless otherwise noted.

DECK / FLAT INSTALLATION



STAIR / SLOPE INSTALLATION



| MARK | QTY | DECK / FLAT | | ADDITIONAL MEASUREMENTS FOR STAIRS / SLOPE | | | |
|------|-----|--------------------|-----------------|--|----------------|----------------------------------|----------------------------------|
| | | B BOTTOM LENGTH | R RIGHT SIDE | T TOP LENGTH | L LEFT SIDE | TLBR TOP LEFT TO BOTTOM RIGHT | BLTR BOTTOM LEFT TO TOP RIGHT |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |

Dealer: _____ Date: _____ Quote Only
 Dealer PO

Attn: _____ Phone: _____ Fax: _____

INFINITY RAIL WORKSHEET

Provide a sketch of your deck dimensions Indicate post size & locations with *(optional)*
 Indicate existing post locations with ■ 2-1/2" (9006)

Indicate Stair Locations and Direction Standard CrystaLite Details
 All glass figured as 90° all 4 corners.

Color

White Almond Green Bronze
 Grey Black Custom _____

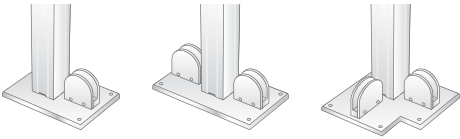
Top Rail required for stairs only.



Infinity Railing is limited to flat installations only. Traditional top and bottom rail system is required for stairs and slopes

9000 9001 9039

Mounting



Field Fasteners by Other.

Deck Mount

Height

36" residential 42" residential

Railing System

Flats: 3/8" Tempered (standard) 3/8" FTL
Stairs: 1/4" Glass 5/8" Picket 1/8" SS Cable
Gates: 1/4" Glass 5/8" Picket 1/8" SS Cable

Misc.

Glass Color: (if applicable)
 Clear Bronze Gray _____

Note: Glass ordered after measurement of installed railing.

Deck Material: _____

Field Measure by: CrystaLite Other _____

Installed by: CrystaLite Other _____

FOB: Dealer Jobsite

Notes

Estimated Dealer Cost Total Lineal Feet
quote good for 30 days

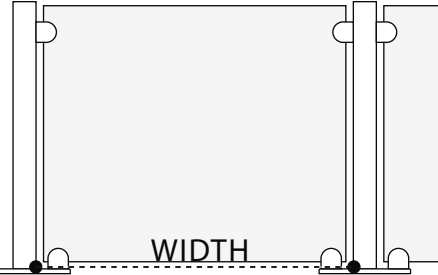


EVERETT
 phone 1-800-666-6065 fax 425-258-6734

SPOKANE
 phone 1-800-382-5403 fax 509-921-2137

SALEM
 phone 1-800-664-1257 fax 503-391-0974

MEASURING SHEET FOR INFINITY RAIL GLASS

| | | |
|--|--------------|------------|
| <input type="checkbox"/> CLEAR <input type="checkbox"/> BRONZE <input type="checkbox"/> GREY <input type="checkbox"/> OTHER | DECK / FLAT | |
| <input type="checkbox"/> 3/8 TEMP (standard) <input type="checkbox"/> 3/8 FTL | | |
| NOTE | MARK | QTY |
| <ul style="list-style-type: none"> ■ CrystaLite will make all required deductions based off these measurements. ■ CrystaLite will deduct 2" from the width to allow for a 1" Edge Gap on each side unless otherwise noted. ■ 36" tall systems will have a glass net height of 34-5/8" ■ 42" tall systems will have a glass net height of 40-5/8" | WIDTH | |
| | 1 | |
| | 2 | |
| | 3 | |
| | 4 | |
| | 5 | |
| | 6 | |
| RAILING HEIGHT | 7 | |
| <input type="checkbox"/> 36" tall (residential only) <input type="checkbox"/> 42" tall (residential only) | 8 | |
| | 9 | |
| DECK / FLAT INSTALLATION | 10 | |
| System is limited to flat installations only. | 11 | |
|  | 12 | |
| All measurements must be made from the inside edges at the posts. | 13 | |
| | 14 | |
| | 15 | |
| | 16 | |
| | 17 | |
| | 18 | |
| | 19 | |
| | 20 | |
| | 21 | |
| | 22 | |
| | 23 | |
| | 24 | |
| | 25 | |
| | 26 | |
| | 27 | |
| | 28 | |

Everett: 800-666-6065 / Salem: 800-664-1257 / Spokane: 800-382-5403

Crystalite Cable Railing System

Crystalite Cable Railing systems are excellent for exterior rails, trellises and fences, yet sleek and elegant for interior railings. Each Cable system is constructed using 1/8 inch diameter high strength, 1 x 19 strand, type 316 stainless steel cable assemblies as a replacement for commonly used metal or wood pickets.

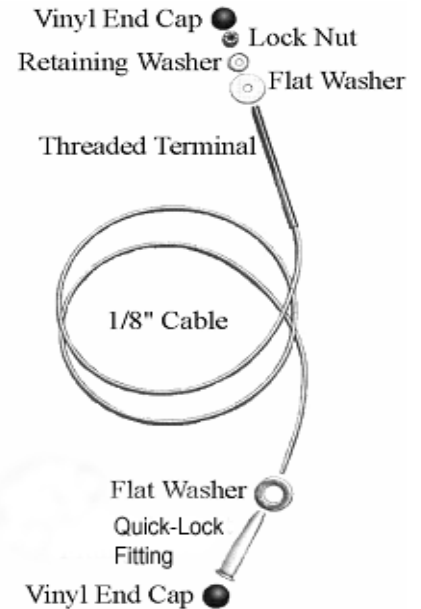
< Enter size of terminal end ~~2 3/4" optional~~ or 3 3/4" standard.

| Quantity | Description |
|----------|------------------------------------|
| _____ | 5' Cable Railing Assembly |
| _____ | 10' Cable Railing Assembly |
| _____ | 15' Cable Railing Assembly |
| _____ | 20' Cable Railing Assembly |
| _____ | 25' Cable Railing Assembly |
| _____ | 30' Cable Railing Assembly |
| _____ | 35' Cable Railing Assembly |
| _____ | 40' Cable Railing Assembly |
| _____ | 45' Cable Railing Assembly |
| _____ | 50' Cable Railing Assembly |
| _____ | 55' Cable Railing Assembly |
| _____ | 60' Cable Railing Assembly |
| _____ | 65' Cable Railing Assembly |
| _____ | 70' Cable Railing Assembly |
| _____ | 75' Cable Railing Assembly |
| _____ | 80' Cable Railing Assembly |
| _____ | Fluid Film, Quick-Lock Lube (req.) |

- Residential 36" rail requires approximately 11 cable strands.
- Commercial 42" rail requires approximately 13 cable strands.

Add-On Parts

| | | |
|-------|--|---|
| _____ | Plastic Cable Grommets - 26/pkg. (tubular metal posts only) | <input type="checkbox"/> b=black, w=white |
| _____ | Stainless Steel Protector | |
| _____ | Sleeves 1/4"OD x 1" long (for use with wood posts) | |
| _____ | Beveled Washers @ Threaded Terminal 3/4"OD x 9/32"ID (for angled holes at stair ends) | |
| _____ | Beveled Washers @ Quick-Lock 3/4"OD x 9/16"ID (for angled holes at stair end) | |
| _____ | Cable Rail Cable Cutter | |
| _____ | Fluid Film, Quick-Lock Lube | |



Each Cable Rail Assembly Includes:

- (1) length of 1/8" diameter type 316 stainless steel cable (lengths listed)
- (1) Pre-attached stainless steel 2 3/4" or 3 3/4" threaded terminal
- (1) Quick-Lock fitting
- (1) SS flat washer (9/32"ID x 1"OD)
- (1) SS flat washer (9/16"ID x 1"OD)
- (1) SS retaining washer
- (1) Nylon insert lock nut

Note:

- Crystalite does not advise more than 4' residential post to post spans, and 3' commercial post to post spans.
- Stainless cable requires 3" spacing from cable to cable.
- Terminate cable runs at all 90 degree corners, and consult Crystalite about other transitions and corner conditions.

Everett: 800-666-6065 / Salem: 800-664-1257 / Spokane: 800-382-5403

Crystalite Surface Mounted Cable Railing System

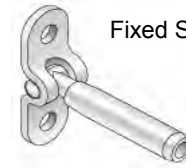
Crystalite Surface Mount Cable Railing systems are constructed using 1/8 inch diameter high strength, weather tough, 1x19 strand, type 316 stainless steel cable assemblies as a replacement for commonly used metal or wood pickets. The surface mount system attaches to the post or frame with screws or bolts. The surface mount is designed with 130 degree pivoting, which allows for more easy angled connections.

| Quantity | Description |
|----------|----------------------------|
| _____ | 5' Cable Railing Assembly |
| _____ | 10' Cable Railing Assembly |
| _____ | 15' Cable Railing Assembly |
| _____ | 20' Cable Railing Assembly |
| _____ | 25' Cable Railing Assembly |
| _____ | 30' Cable Railing Assembly |
| _____ | 35' Cable Railing Assembly |
| _____ | 40' Cable Railing Assembly |
| _____ | 45' Cable Railing Assembly |
| _____ | 50' Cable Railing Assembly |
| _____ | 55' Cable Railing Assembly |
| _____ | 60' Cable Railing Assembly |
| _____ | 65' Cable Railing Assembly |
| _____ | 70' Cable Railing Assembly |
| _____ | 75' Cable Railing Assembly |
| _____ | 80' Cable Railing Assembly |

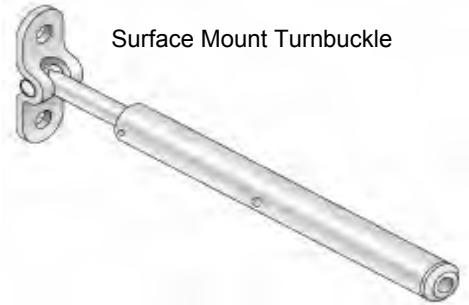
- Residential 36" rail requires approximately 11 cable strands.
- Commercial 42" rail requires approximately 13 cable strands.

Add-On Parts

| | |
|-------|--|
| _____ | #12 x 3/4" PHSMS ss 410 high strength screw (for aluminum posts) (25 per Pkg.) |
| _____ | #12 x 2" PHSMS ss 410 high strength screw (for wood posts) (25 per Pkg.) |
| _____ | Stainless Steel Protector |
| _____ | Sleeves 1/4"OD x 1" long (for use with wood posts) |
| _____ | Cable Rail Cable Cutter |
| _____ | Cable Rail Swag Tool (required to perform field swaging) |



Fixed Surface Mount



Surface Mount Turnbuckle

Hand Crimped Swaging



Each Cable Rail Assembly Includes:

- (1) Length of 1/8" diameter type 316 stainless steel cable
- (1) Fixed stainless steel surface mount (pre-attached to cable)
- (1) Stainless steel surface mount turnbuckle (field swaged to cable)

Note:

- Crystalite does not advise more than 4' residential post to post spans, and 3' commercial post to post spans.
- Stainless cable requires 3" spacing from cable to cable.
- Terminate cable runs at all 90 degree corners, and consult Crystalite about other transitions and corner conditions.

Everett: 800-666-6065 / Salem: 800-664-1257 / Spokane: 800-382-5403

Crystalite Button End Cable Railing System

Crystalite Button End Cable Railing systems are constructed using 1/8 inch diameter high strength, weather tough, 1x19 strand, type 316 stainless steel cable assemblies as a replacement for commonly used metal or wood pickets. The button end system attaches through the post or frame with screw on end caps.

| Quantity | Description |
|----------|----------------------------|
| _____ | 5' Cable Railing Assembly |
| _____ | 10' Cable Railing Assembly |
| _____ | 15' Cable Railing Assembly |
| _____ | 20' Cable Railing Assembly |
| _____ | 25' Cable Railing Assembly |
| _____ | 30' Cable Railing Assembly |
| _____ | 35' Cable Railing Assembly |
| _____ | 40' Cable Railing Assembly |
| _____ | 45' Cable Railing Assembly |
| _____ | 50' Cable Railing Assembly |
| _____ | 55' Cable Railing Assembly |
| _____ | 60' Cable Railing Assembly |
| _____ | 65' Cable Railing Assembly |
| _____ | 70' Cable Railing Assembly |
| _____ | 75' Cable Railing Assembly |
| _____ | 80' Cable Railing Assembly |

- Residential 36" rail requires approximately 11 cable strands.
- Commercial 42" rail requires approximately 13 cable strands.

Add-On Parts

| | |
|-------|--|
| _____ | Extra SS Solid Button End Cap (as supplied with assemblies above) |
| _____ | Stainless Steel Protector |
| _____ | Sleeves 1/4"OD x 1" long (for use with wood posts) |
| _____ | Beveled Washers @ Button Ends 3/4"OD x 9/32"ID (for angled holes at stair ends) |
| _____ | Cable Rail Cable Cutter |
| _____ | Cable Rail Swag Tool (required to perform field swaging) |

Button End Terminal - Machine Swagged at Factory



Button End Turnbuckle



Hand Crimped Swaging in Field Concealed in Turnbuckle



Each Cable Rail Assembly Includes:

- (1) Length of 1/8" diameter type 316 stainless steel cable
- (1) Fixed stainless steel button end terminal (pre-attached to cable)
- (1) Stainless steel button end turnbuckle (field swaged to cable)

Note:

- Crystalite does not advise more than 4' residential post to post spans, and 3' commercial post to post spans.
- Stainless cable requires 3" spacing from cable to cable.
- Terminate cable runs at all 90 degree corners, and consult Crystalite about other transitions and corner conditions.

