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## Introduction

TriLap® is a horizontal steel siding panel for use in new or retrofit construction. The 3-lap panel profile available in custom, long lengths is designed with ease of installation as a primary consideration. The following guide is intended to help the installer achieve a high level of quality in the finished product. Please do not hesitate to contact your ASC Building Products representative with any questions you might have.

### *Manufacturing Location:*

Anchorage  
2441 Cinnabar Loop  
Anchorage, Alaska 99507  
800-478-2727  
907-349-2727

## Important Notice

Be sure to read this manual in its entirety before beginning installation.

This manual is provided to the customers of ASC Building Products as a guide to assist in the installation of TriLap® Steel Siding. Use for any other purpose is prohibited. This manual remains the property of ASC Building Products.

ASC Building Products assumes no responsibility for any problems which might arise as a result of improper installation or any personal injury or property damage that may occur with the product's use.

*Note:* Each flashing part in this guide has been assigned a part number. Each part number contains one or two letters followed by one or two numbers, for example: (WA21). These part numbers have been provided for you to make ordering these flashing parts quick and easy.

## Minimum Recommended Tools & Equipment

**Screw Gun:** Clutch type screw gun with depth locating nose piece allowing variable torque settings is recommended to insure proper installation of the screws. 1/4" hex head driver will be required.

**Snips:** For miscellaneous panel and flashing cutting requirements. Three pairs will be required for left edge, right edge and centerline cuts.

**Electrical Metal Shears:** Used for general metal cutting, such as at endlaps, doors and windows.

*Note:* Some erectors prefer to use circular power saws with metal cutting abrasive blades. While the use of power saws may be faster, there are some disadvantages that must be considered: 1) The edges of metal that have been saw cut are jagged and unsightly, and are more likely to rust than sheared edges; 2) Saw cutting will leave small particles of metal on the panel surface that will rust and damage the panel finish if not completely removed. ASC Building Products does not recommend this method.

**Panel Shear:** A field shear the shape of the panel, used to make square end cuts at the jobsite.

**Chalk Line:** Used to assist in the alignment of panels and flashings.

**Caulking Gun:** For miscellaneous caulking and sealing.

**Rivet Tool:** Used for miscellaneous flashing and trim applications.

**Marking Tools:** Indelible markers, pencils, or scratching tools.

**Scratch Awl:** Can be made from old screw drivers ground to a point. Used to mark the steel, open hems and as a punch.

**Utility Knife:** Used for miscellaneous cutting.

**Electric Drill:** Used to drill holes such as those required for rivet installation.

**String Line:** Used for general alignment and measuring.

**Tape Measure:** 25 foot minimum (another 50 ft. is handy).

**Locking Pliers:** Standard and "Duckbill" style for miscellaneous clamping and bending of parts.

**Hammer:** Used with nails to fasten flashings.

## Delivery, Handling and Storage

- Always check the shipment upon delivery. Check for damage and check material quantities against the shipping list. Note any damaged material or shortages at the time of delivery and notify your supplier within 24 hours.
- Handle panel bundles and individual panels with care to avoid damage. Longer bundles and panels may require two or more “pick points” properly spaced to avoid damage that can result from buckling and/or bending of the panels. Request a copy of the Long Length Handling Instructions and diagrams from your supplier as required.
- Store the panels and other materials in a dry, well ventilated area and away from traffic. Elevate one end of the bundle, maximum 2'-0", so that any moisture that may have accumulated during shipping can run off. Be sure that air will be able to circulate freely around the bundles to avoid the build-up of moisture. Never store materials in direct contact with the ground.
- Some products may have a peel off plastic coating over the painted surface. This coating was factory-applied to prevent damage to the finish that may occur during manufacturing or shipping. If this coating is present, avoid exposure of the “peel-coated” parts to sunlight and remove the “peel-coat” prior to installation.

## Safety Considerations

Always wear proper clothing and safety attire.

Wear proper clothing when working with sheet metal in order to minimize the potential for cuts, abrasions, and other injuries.

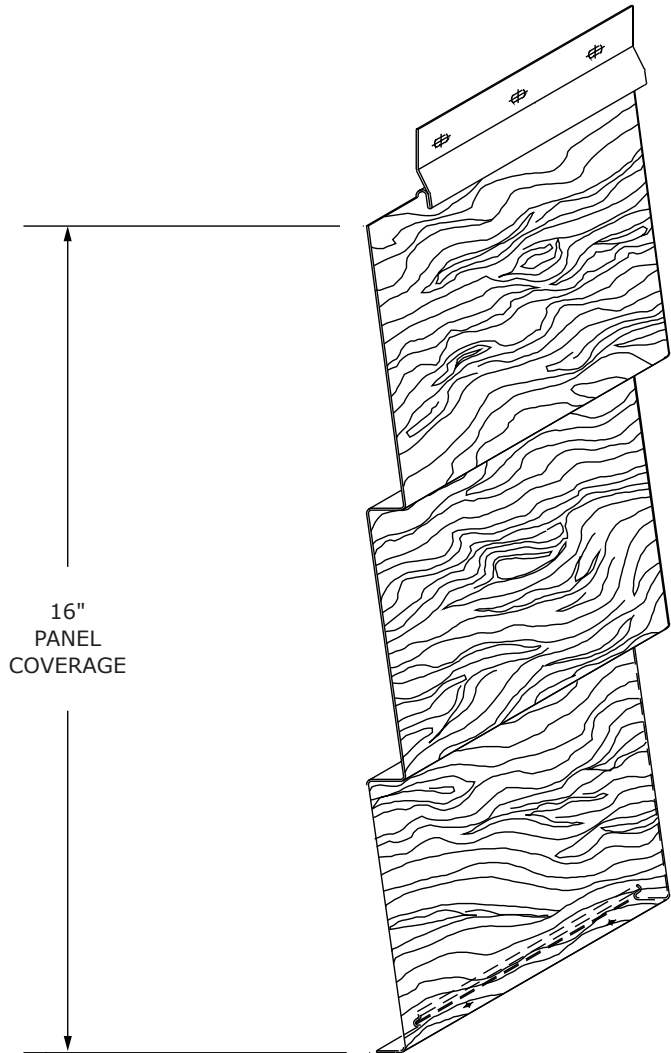
Use care when operating electrical and other power equipment.

Observe all manufacturer’s safety recommendations.

Siding installation on windy or stormy days can be dangerous.

Avoid working with sheet metal products on windy or stormy days.

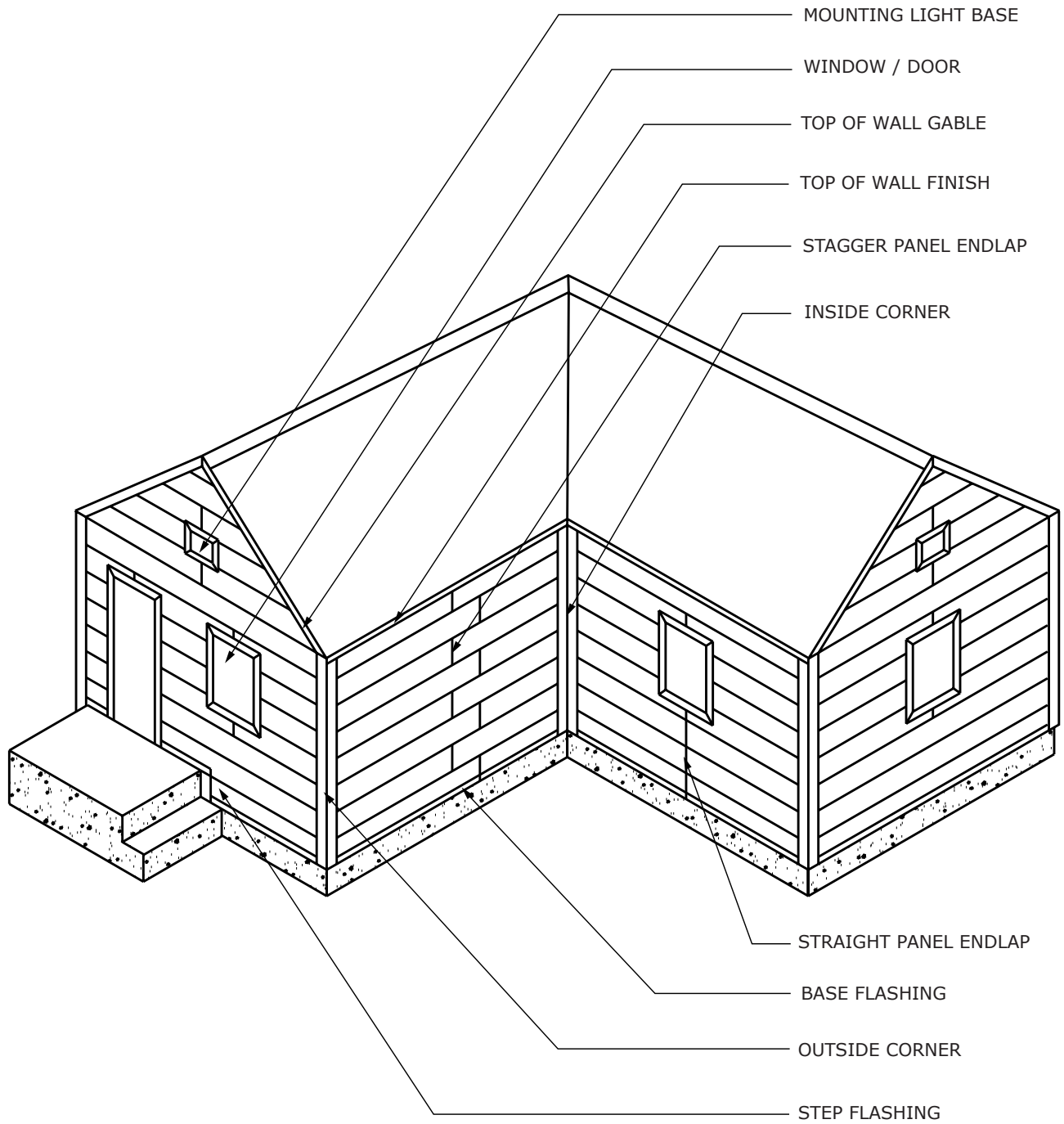
## TriLap® Steel Siding







- Concealed fastened, 16" wide, 3-lap panel profile.
- Custom long lengths for easy installation.
- 29 gauge painted panels readily available. (Inquire about 26 gauge and 24 gauge availability.)
- Factory-notched for quick installation.
- Rich cedar embossed wood grain appearance.
- Alaska produced.
- Coil coating offers good surface hardness as well as excellent flexibility for woodgrain embossing.
- Top coat is specially formulated to resist abrasion, metal marking, and staining
- Requires minimal maintenance.
- Matching flashings and accessories.
- Optional weep holes.

*Note:* Weep holes are not recommended unless project conditions require. Call an ASC Building Products representative for more information.

## Map of Typical Conditions



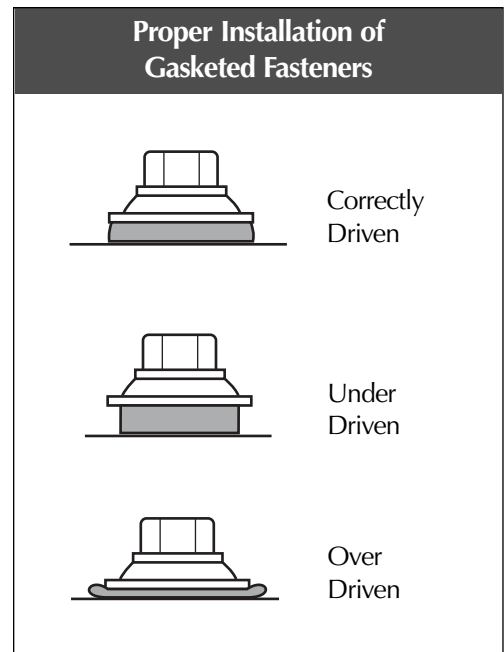
## Fastener Selection

Fastener #	Description	Use
1	 7d Galvanized Box Nail Not furnished by ASC Building Products	Wall angle, corner bracket undersill flashing, finish flashing at top of wall or gable and base flashing
2	 No. 10 - 15 HWH Woodscrew available in 1", 1 1/2", 2", 2 1/2" and 3"	Panel-to-wall substrate attachments, Starter Strip
3	 STST-42 Stainless Steel Rivet 1/8 x 1/8"	Flashing-to-flashing attachments (lapped joints such as outside corners)
4	 No. 10 x 3/4" Stitch Screw	Flashing-to-flashing attachment

*Notes:*

- The table above shows the fasteners required for TriLap® Steel Siding. Refer to the panel installation and flashing details of this manual for specific screw and nail usage and spacing.
- Panel attachment screws must be long enough to fully penetrate through the structural sheathing, or penetrated solid lumber at least one inch.
- All screws and nails must be coated to provide protection against corrosion.
- Exposed fasteners should have sealing washers and be the same color as the parts they attach.

*Note:* Screws and nails must be properly driven to ensure proper seal, holding strength, and allowance for expansion and contraction. Over driven fasteners may restrict panel from expanding and contracting properly, and may cause buckling or oil canning of the panel. Correctly driven fasteners will have a very slight gap between the panel surface and the washer base.



## New Siding Preparation

ASC Building Products TriLap® Steel Siding can be used in both new construction and re-siding applications. We recommend horizontal installation of TriLap® Steel Siding over a rated structural sheathing. However, application over intermittent supports with rigid insulation is possible. Contact ASC Building Products for additional information.

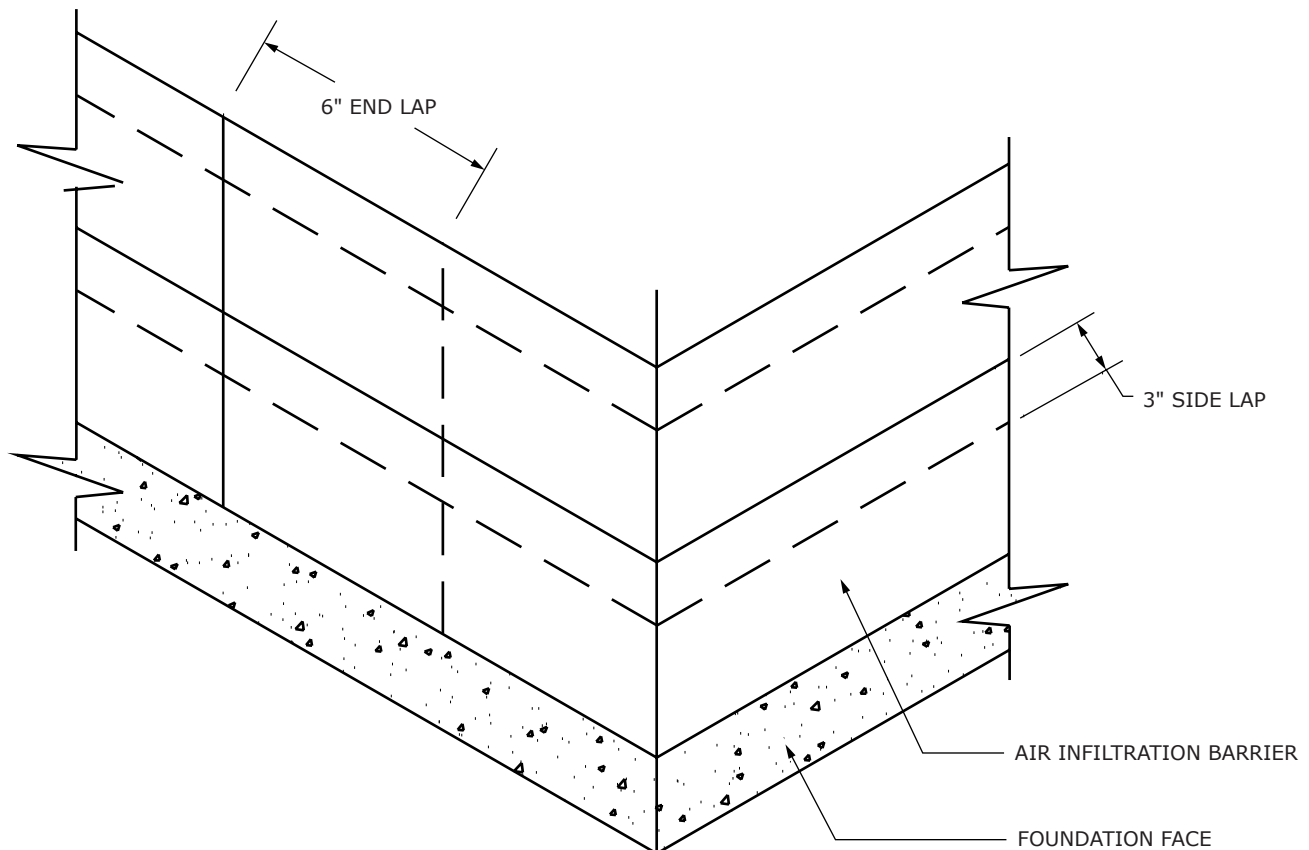
### New Siding:

1. Make sure there are no nails or other objects protruding from the substrate that might puncture the air barrier or the wall panels.
2. Check all details for possible wall penetrations which must be added to the substrate prior to wall panel installation.

3. Cover the entire wall section with an air infiltration barrier. Install horizontally. (See illustration No. 1)
4. Begin at the base and roll out the air infiltration barrier horizontally. Allow each consecutive section to overlap the previous section a minimum of 3". Overlap the end laps a minimum of 6" when starting a new roll of air infiltration barrier.
5. Areas of air infiltration barrier that have been torn or cut should be replaced or repaired prior to installation of the metal siding.

*Continued next page*

ILLUSTRATION NO. 1





### New Siding Preparation *continued*

The following steps need to be taken prior to installation of wall panels.

1. Complete installation of air infiltration barrier as shown on page 7.
2. Starting at the corner, attach the Base flashing (B21) with nails at 12" o.c. Allow for a 1" overlap on the foundation face.
3. Check each side of the building to determine the lowest point from which the siding is started. Measure up from this lowest point, the width of the Starter Strip (SS21), as a base point for your chalk line. Stretch the chalk line to a corner sighting along the line to make sure it is level and straight.

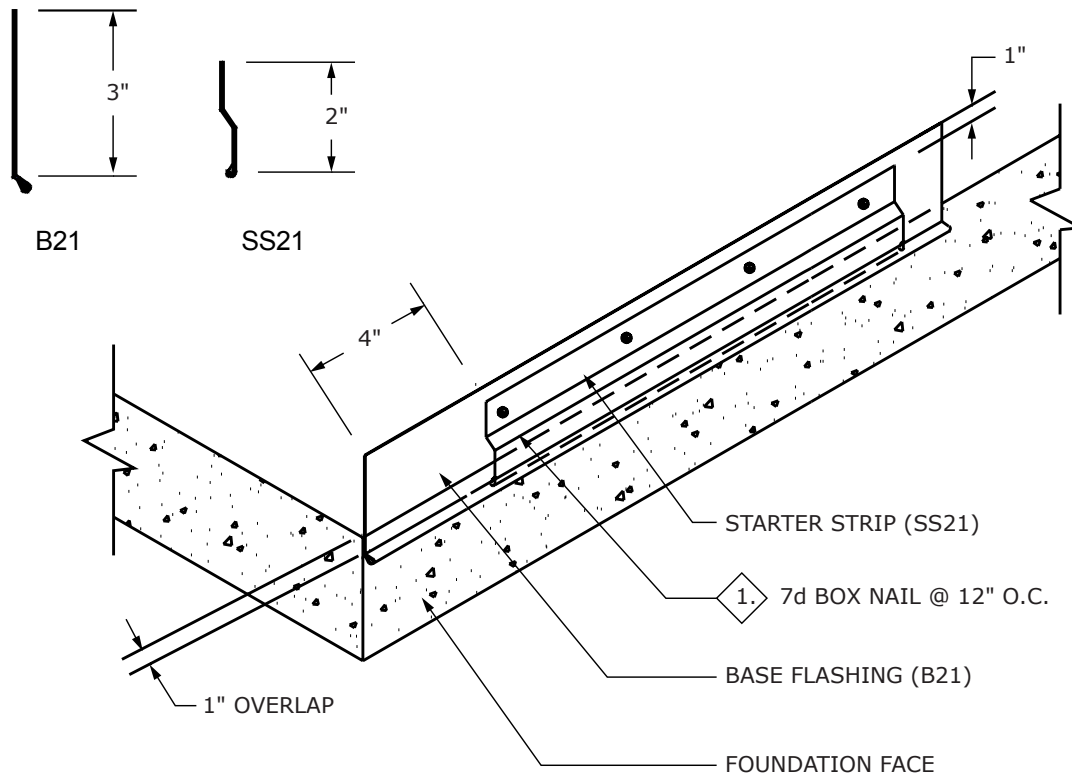
Snap the line to provide a reference mark for the Starter Strip (SS21). Repeat on remaining sides of the building making sure that the line meets on all corners. Hold the Starter Strip (SS21) back 4" from each corner. (See illustration No. 2)

*Note:* The Starter Strip (SS21) must be straight, level, and line up at all corners since it will determine the line of all the siding panels.

4. Fasten Starter Strip (SS21) through the structural sheathing to engage the wood or steel studs. Maximum 12" o.c. attachment.

*Continued next page*

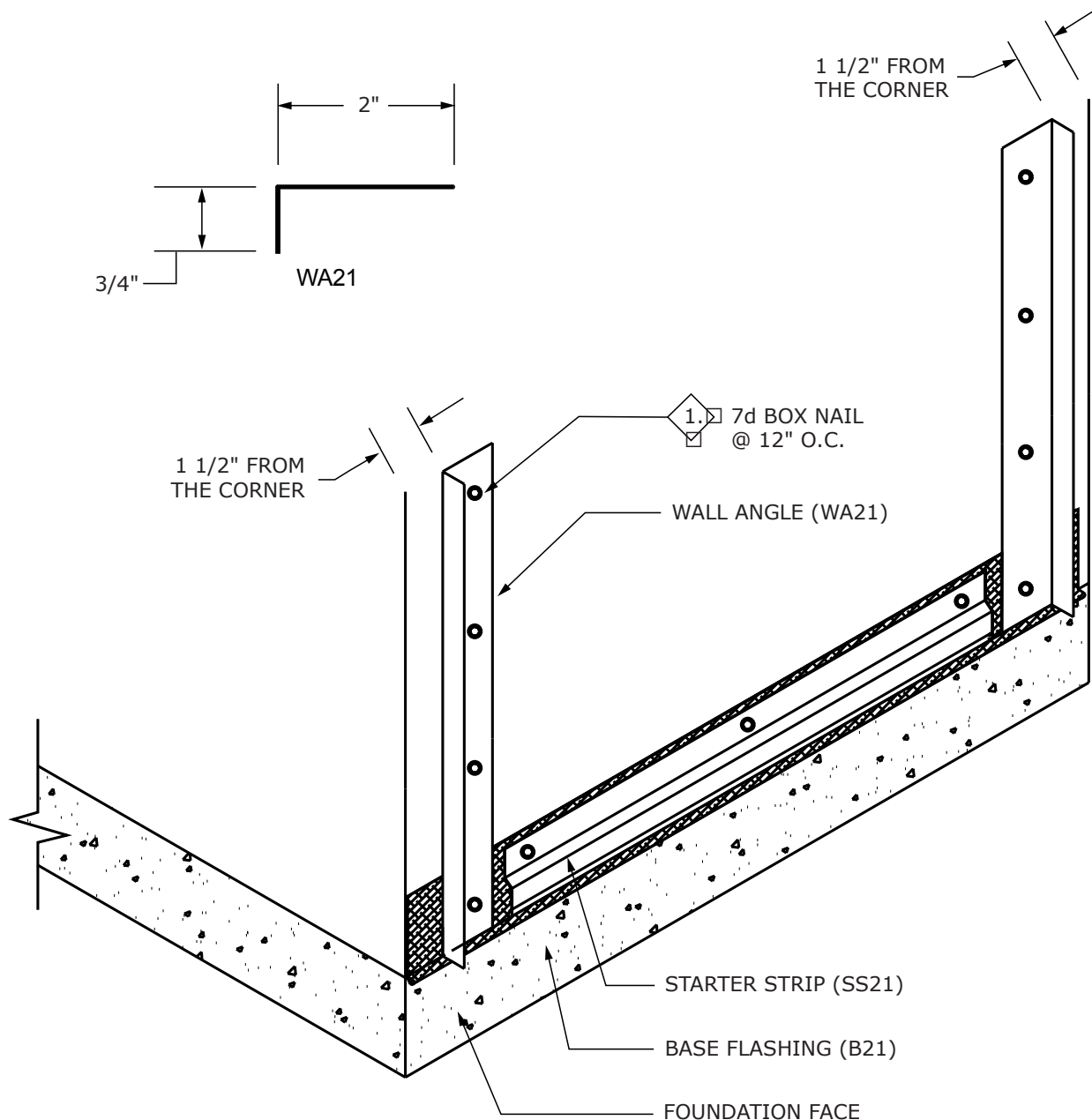
ILLUSTRATION NO. 2



### New Siding Preparation *continued*

5. Place Wall Angel (WA21) plumb 1 1/2" maximum from the corner, flush with the foundation at the bottom, and nail at 12" o.c. along the flange against the wall.
6. Next, proceed to the opposite end of the wall and attach another Wall Angel (WA21) as noted in step 5.
7. Proceed to pages 12 - 16 for additional flashing details applicable to installation.

ILLUSTRATION NO. 3



## Re-Siding Preparation

In many cases ASC Building Products' TriLap® Steel Siding can be installed over existing siding. Some jurisdictions will allow re-siding over certain types of siding without tear-off of the old siding. Check your local codes or building department for specific requirements.

If the wall is stripped down to the existing substrate, follow the procedures for new walls on pages 7-9. Be sure to check the existing wall area and repair any damaged areas prior to installation of the new wall system.

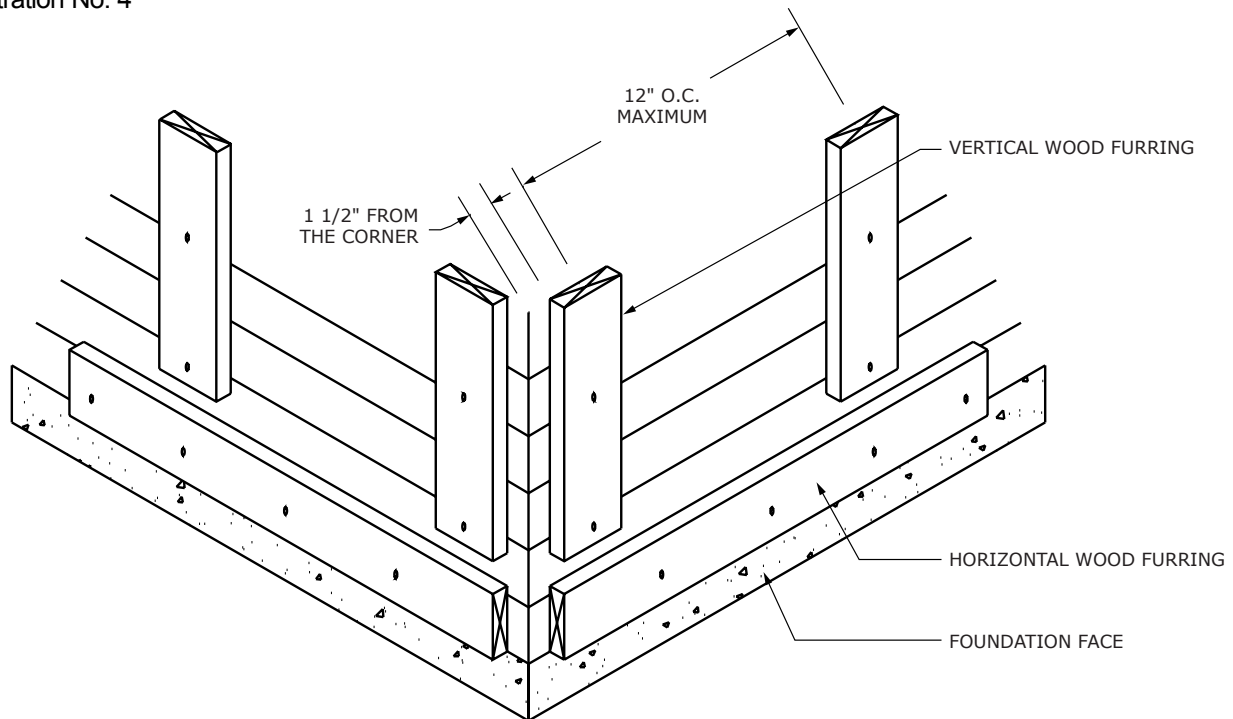
The following steps should be taken when installing ASC Building Products' TriLap® Steel Siding over existing siding:

1. Inspect the walls for damage and make necessary repairs.

2. Do not apply TriLap® Steel Siding over walls with structural damage or trapped moisture.
3. Secure any warped or loose siding.
4. Make sure there are no nails or other objects protruding that might puncture the new air infiltration barrier.
5. Install new air infiltration barrier as shown on page 7.
6. Install horizontal wood furring just above the foundation. Attach at 16" o.c. maximum (See note below).
7. Install vertical wood furring starting at the corner 1 1/2" from the edge, attach at 16" o.c. maximum.
8. Make sure to level the wall before application of flashings and panels.

*Continued next page*

Illustration No. 4

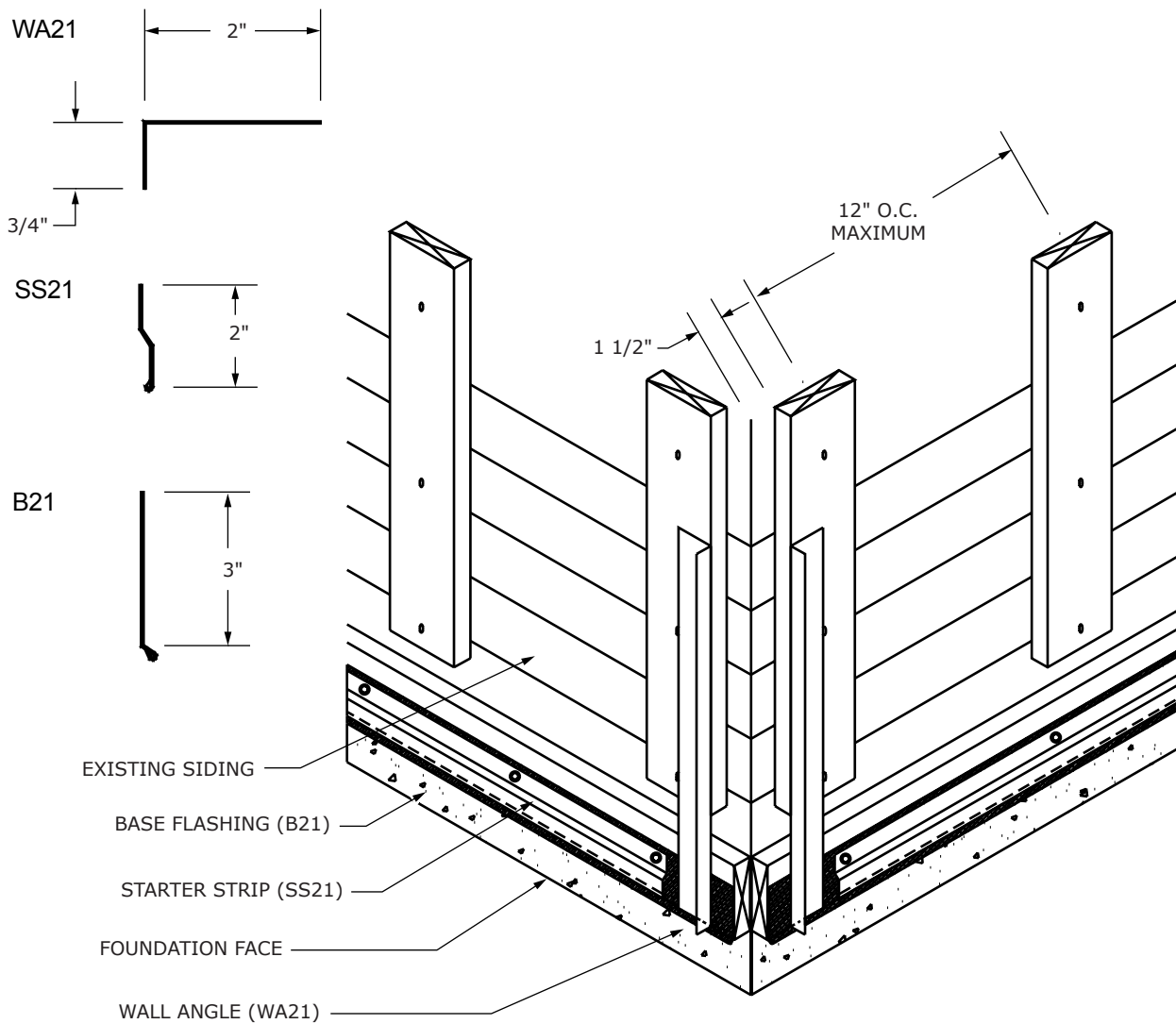


*Note:* An engineer licensed in the area where the work will be done should determine the size, spacing and attachment requirements of the furring members.

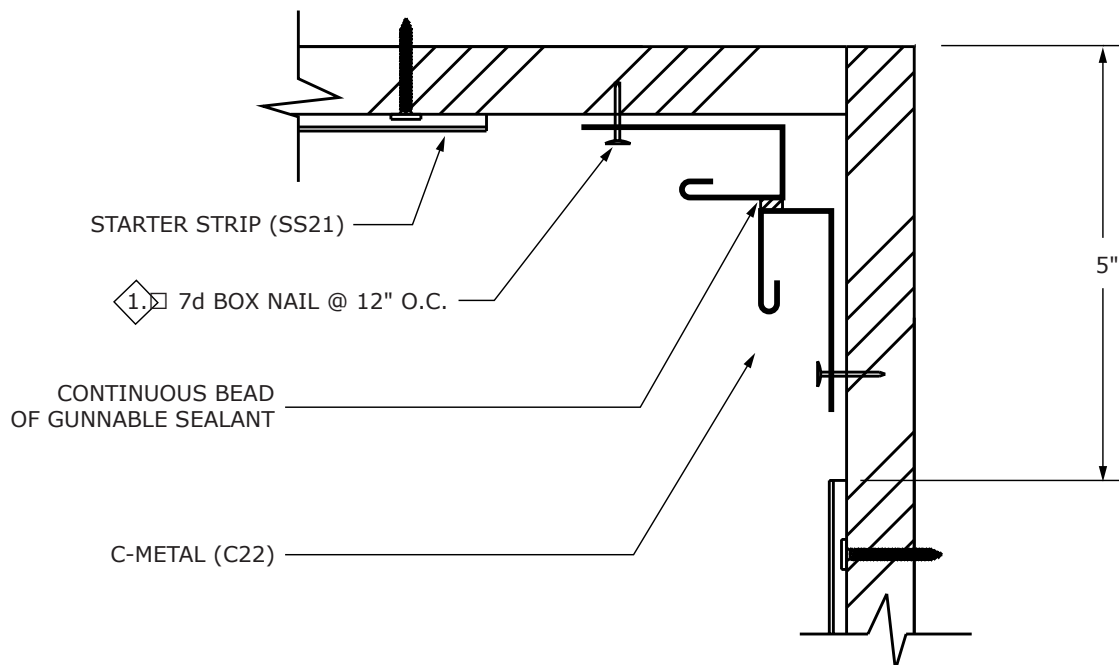
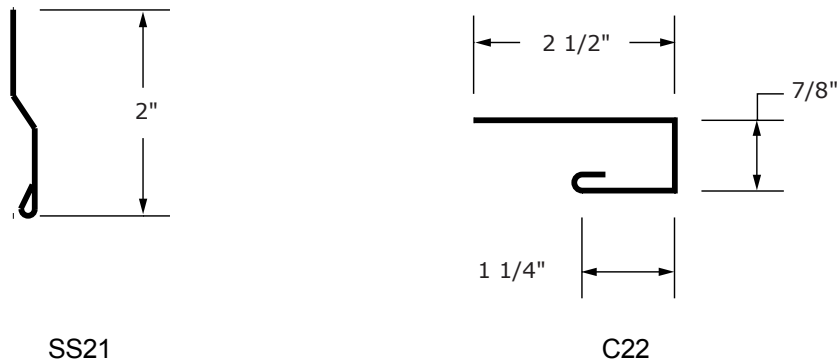
### Re-Siding Preparation *continued*

9. Install the Base Flashing (B21), starting at the corner. Attach at 12" o.c. with nails, allowing 1" to overhang onto the foundation face.
10. Install the Starter Strip (SS21) with fasteners attached to vertical wood furring. Follow alignment instructions on page 8.

11. Place Wall Angle (WA21) 1 1/2" from corner, flush with the foundation at the bottom, and nail 12" o.c. along the flange against the wall.
12. Proceed to pages 12 - 16 for additional flashing details applicable to installation.



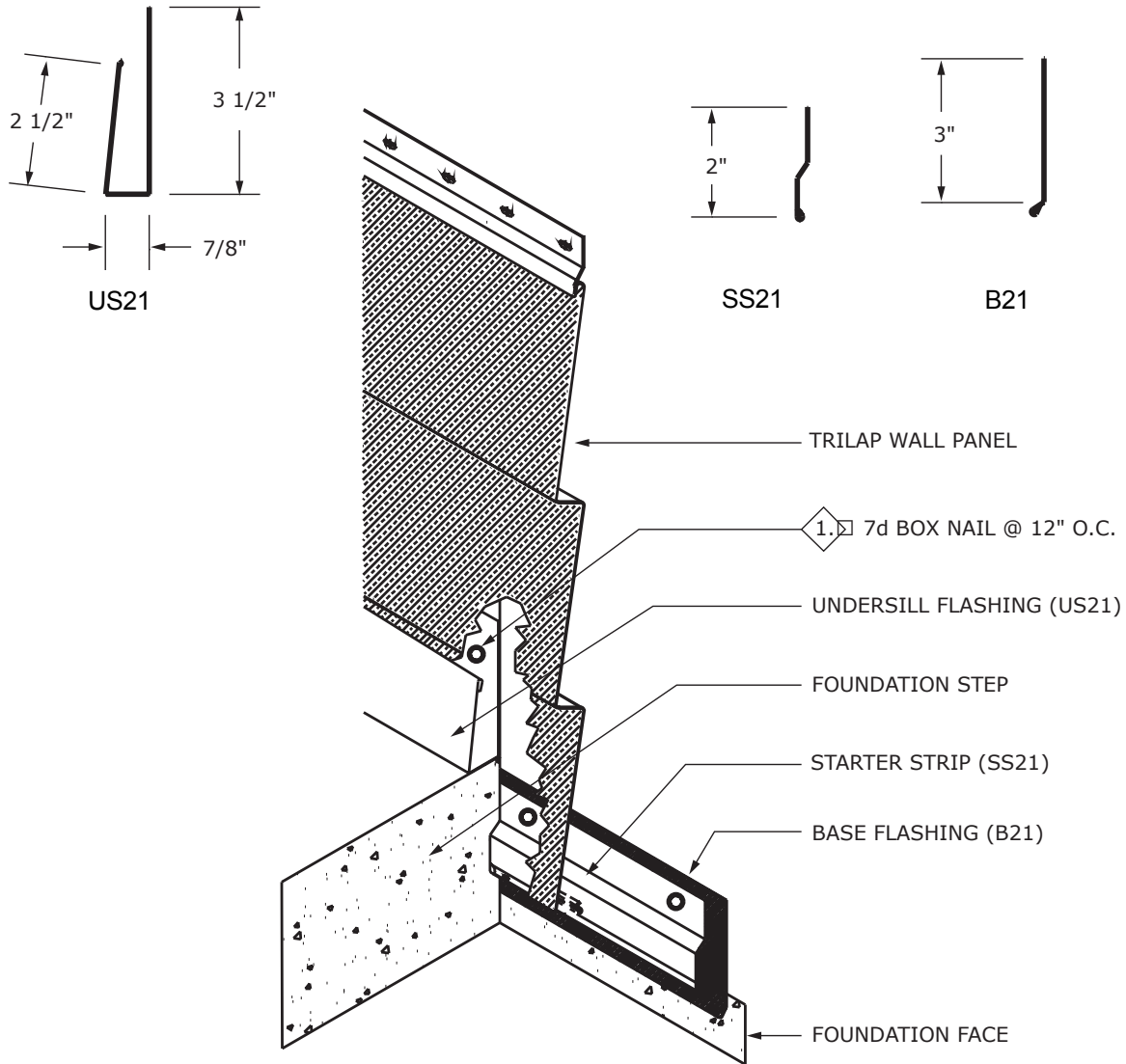
## Inside Corner Flashing



### Procedures

- Air infiltration barrier not shown.
- Install first C-metal (C22) approximately 1/2" from wall, aligning bottom edge with bottom edge of siding. Attach 12" o.c. with nail.
- Apply a continuous bead of gunnable sealant or mastic to back edge of installed c-metal.
- Install second C-metal (C22) as shown; attach every 12" o.c. with nail.

## Step Flashing

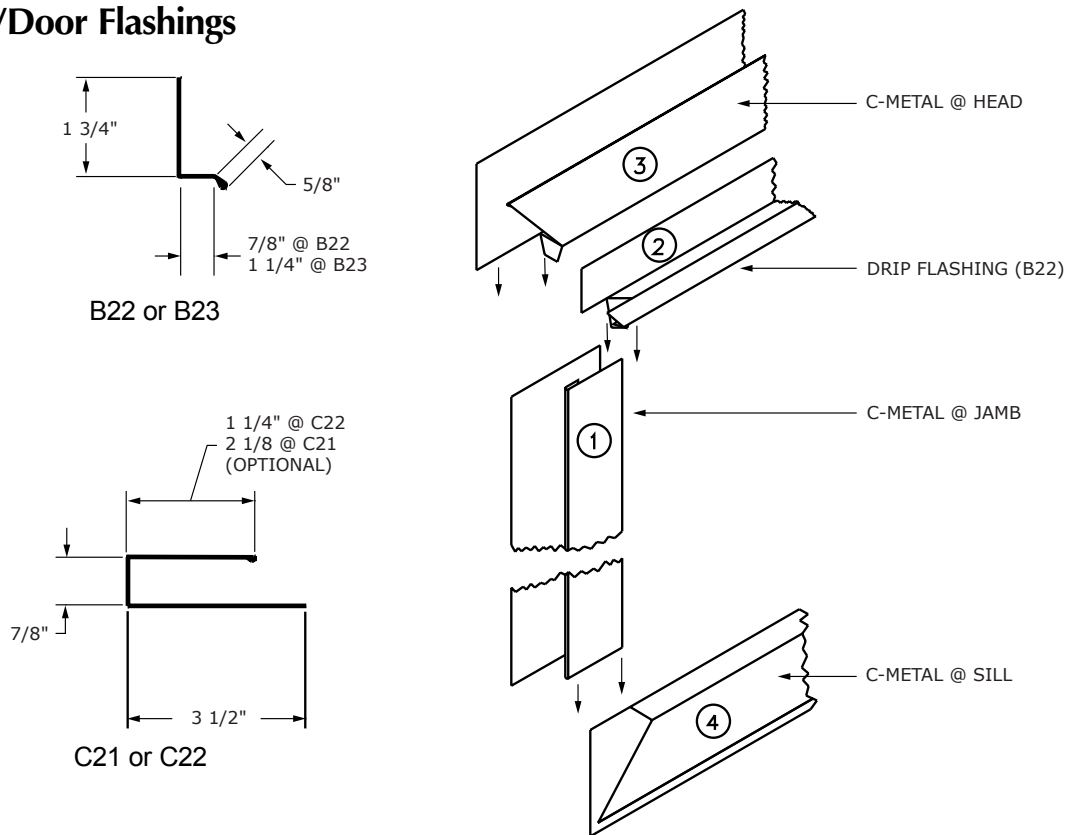


### Procedures

- Air filtration barrier not shown.
- Install Starter Strip (SS21) and Base Flashing (B21) as instructed on page 8.
- Install Undersill Flashing (US21) on upper area.
- Measure and cut panel so fit is snug in the Undersill Flashing (US21).
- Hook panel over Starter Strip (SS21) and slide into Undersill Flashing (US21).
- Fasten panel at the top after it is positioned properly.

*Note:* C21 C-metal may be used as a substitute to US21

## Window/Door Flashings

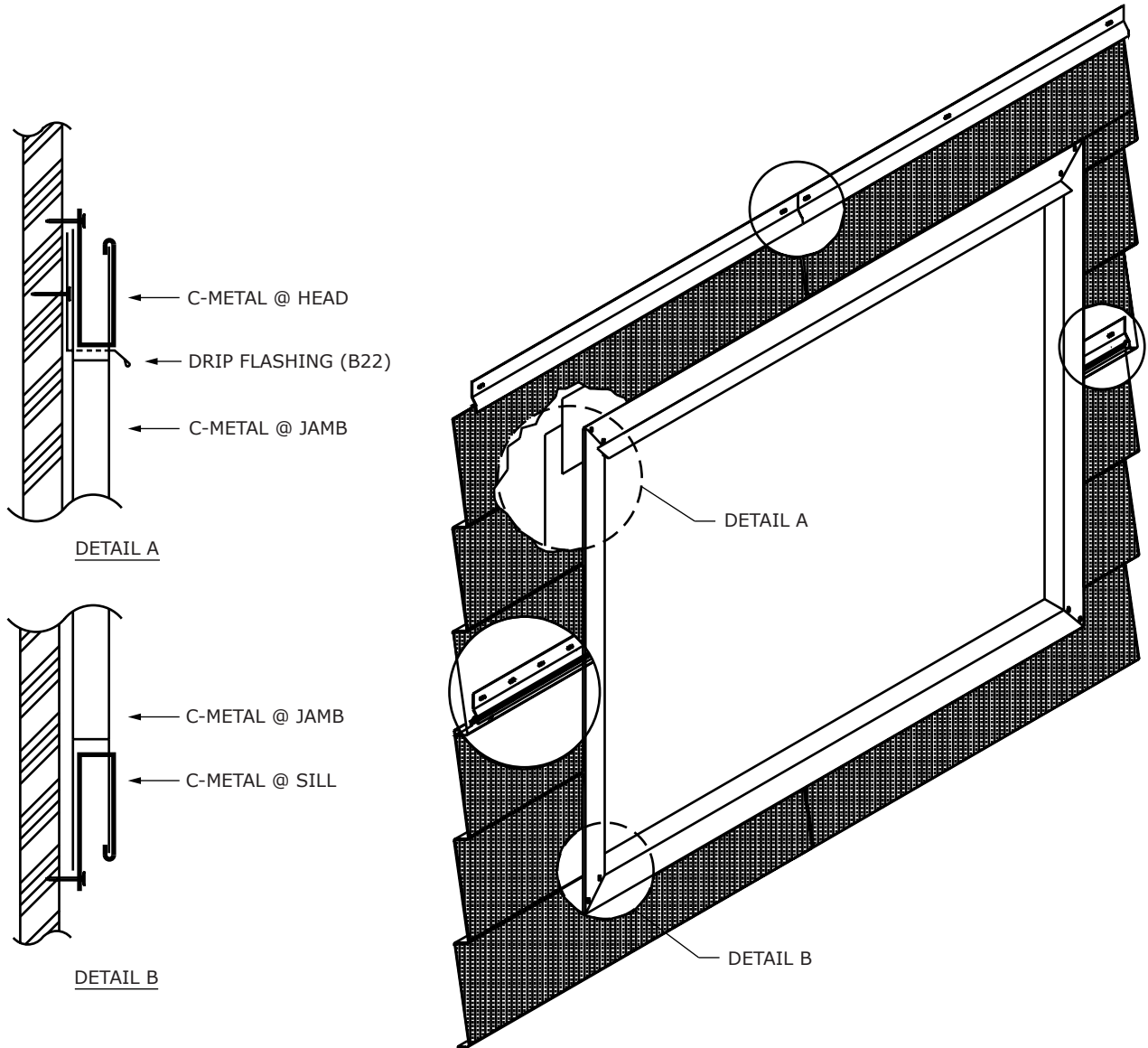


### Procedures

- Air infiltration barrier not shown.
- The C-Metal (C21 or C22) is manufactured in 10'- 6" pieces. These stock lengths have to be cut 4 1/4" or 2 1/2" longer in length than the width and height of the window. Five (5) pieces per window are required: one Head, two Jambs, one Sill, and one Drip Flashing.
- Part #1 (shown in drawing above) requires a piece 7/8" x 2 1/8" or 7/8" x 1 1/4" to be removed from the top end between the paralleled 2 1/8" or 1 1/4" and 3 1/2" legs. Repeat this notch-out at the bottom of Part #1. Prepare the opposite Jamb C-Metal (C21 or C22) in the same fashion.
- Cut a piece of Drip Flashing (B22 or B23) 2" longer than the width of the window (outside to outside of jamb reveals + 2"). For example, using the 1 3/4" x 7/8" x 5/8" Drip Flashing (B22 or B23), make two 1" cuts along the 7/8" leg making a tab to be bent down and over the outside of the notch in the jamb legs at a later time.
- Prepare the Head and Sill C-Metals (C21 or C22) by making 2 1/8" or 1 1/4" cuts in the 7/8" leg leaving 1/2" or material for a tab to be turned down over the Drip Flashing (B22 or B23) tab, as shown above. Make a clean, straight miter cut creating a "picture frame" corner at each end of the Head and Sill C-Metal (C21 or C22).
- Nail the Drip Flashing (B22 or B3) in place followed by the jamb legs. The Drip Flashing (B22 or B23) measuring 1 1/4" wide is used where the window/door opening is trimmed with brick moulding.
- Slide the Head C-Metal (C21 or C22) into place, taking care to position the 3 1/2" leg of the jambs behind the 3 1/2" leg of the heads, and the 2 1/8" leg of the jambs behind the 2 1/8" leg of the heads. The top of the jambs 2 1/8" vertical leg should end inside of the open hem of inside of the Head C-Metal (C21 or C22). Install all four corners in this fashion.

*Note:* Dimensions on attachment flange may differ from C21 or C22 illustration.

## Window/Door Flashings



### Procedures (continued from page 20)

- Fasten the C-Metal (C21 or C22) to the wall with nails at 12" o.c.
- Measure and cut panels so the fit is snug in the Sill C-Metals (C21 or C22) and Jamb of C-Metal (C21 or C22).

*Note:* A full length panel may not be installed around a window. An endlap panel detail at door and window openings may be required. See page 19 for instructions on how to endlap a panel.



## Panel Installation

### General

Study the details section of this manual prior to the installation of the panels. Pay close attention to the following:

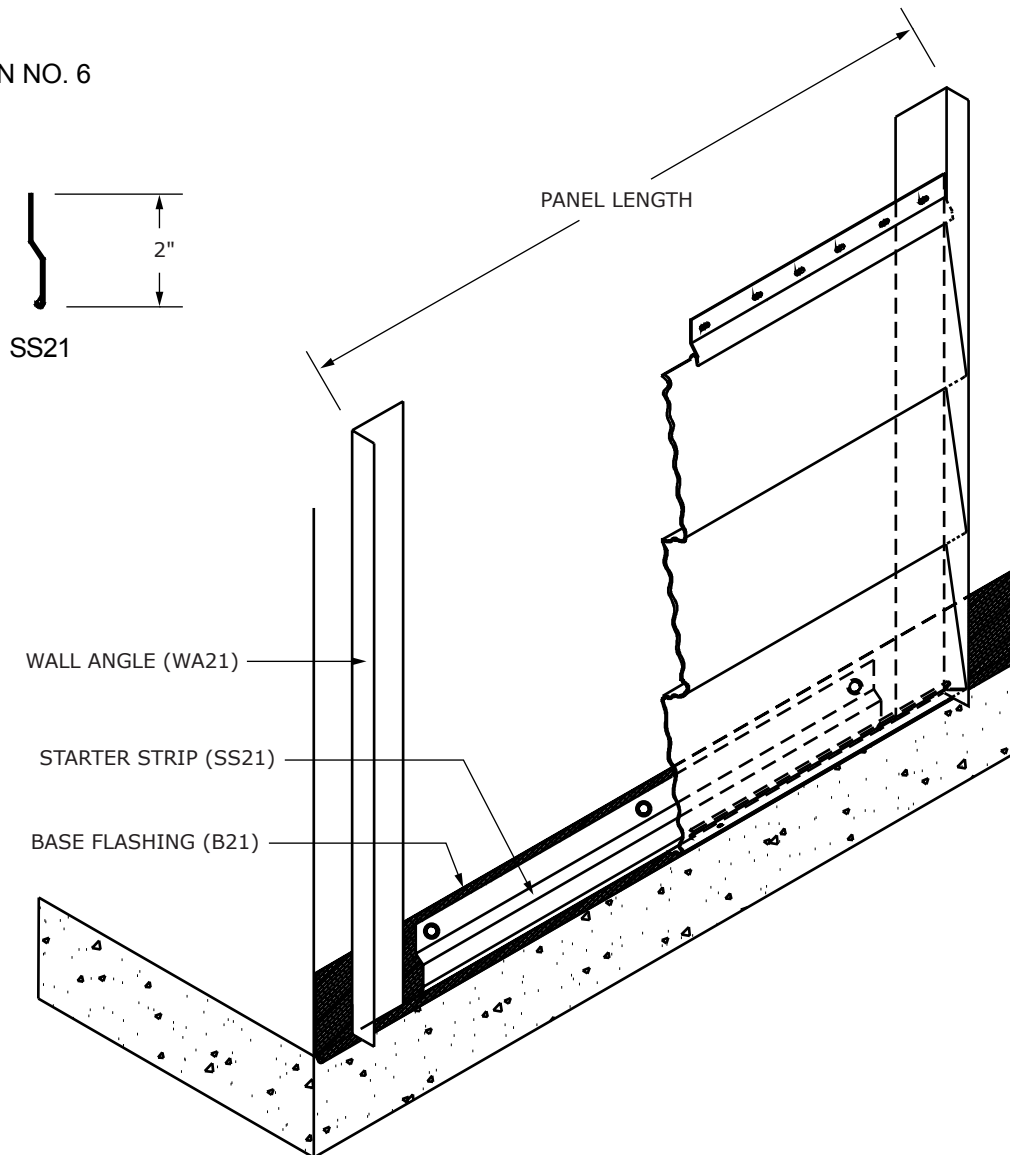
- Determine which flashings need to be installed prior to installing the panels. For example, Starter Strip (SS21) and Wall Angle (WA21). See pages 8 and 9 for instructions.
- Some panels may require notching or cutting prior to installation., For example, around door and window openings.

### Procedure

1. Align the first panel with the Starter Strip (SS21). Engage the panel over the Starter Strip (SS21) by lifting the panel up until it is firmly locked over the Starter Strip (SS21).
2. Fasten panel.

*Note:* Provide proper spacing between panel edge and wall angle (WA21) for expansion or contraction of panel. See page 22.

ILLUSTRATION NO. 6

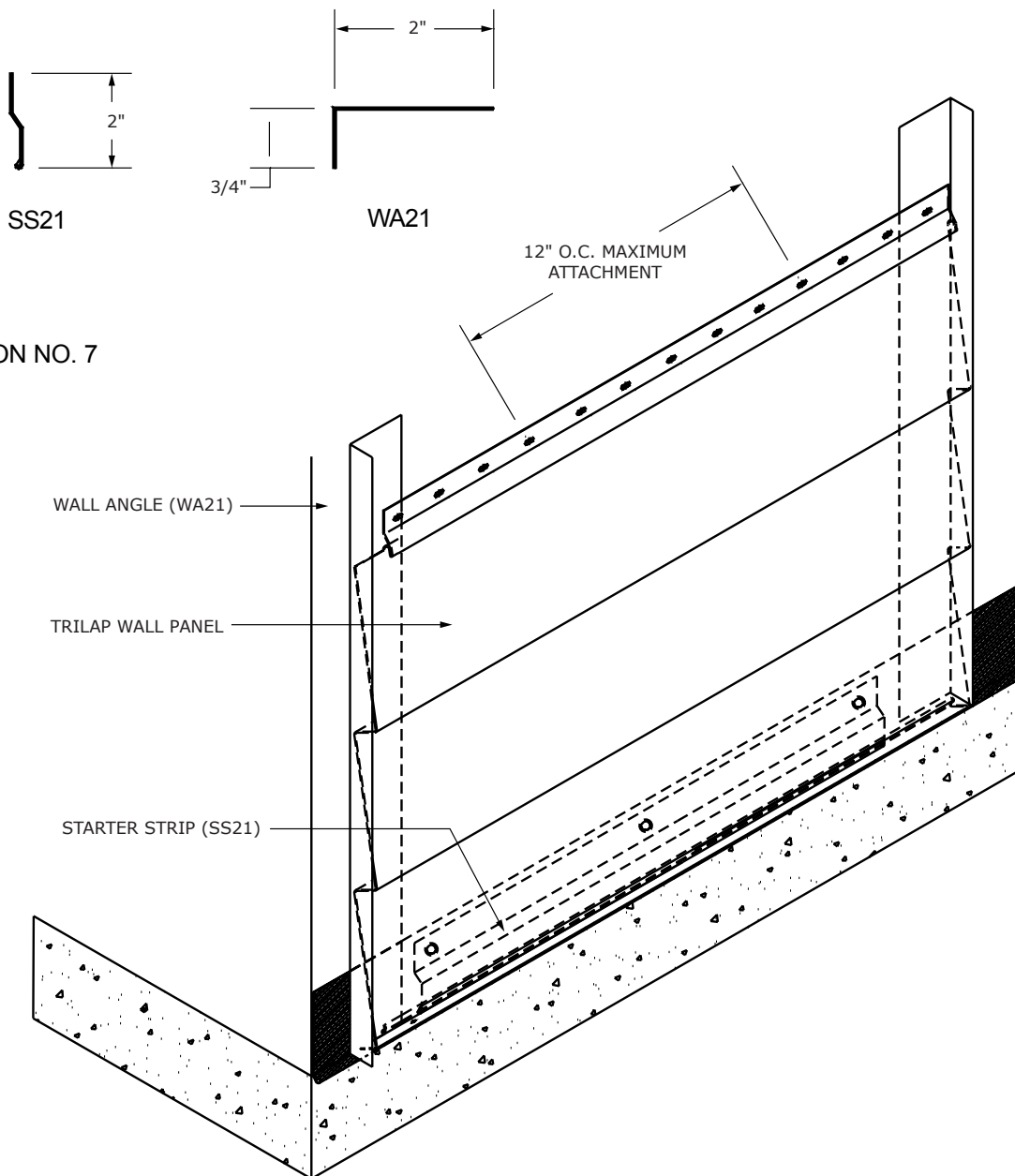


## Panel Installation

Procedure *(continued)*

3. Panel is secured over Starter Strip (SS21) and is positioned at each and inside the Wall Angle (WA21).
4. Fasten the panel through the pre-punched slots at 12" o.c. maximum.
5. Follow guidelines for fastening on page 6 to ensure proper attachment.

*Continued next page*



## Panel Installation

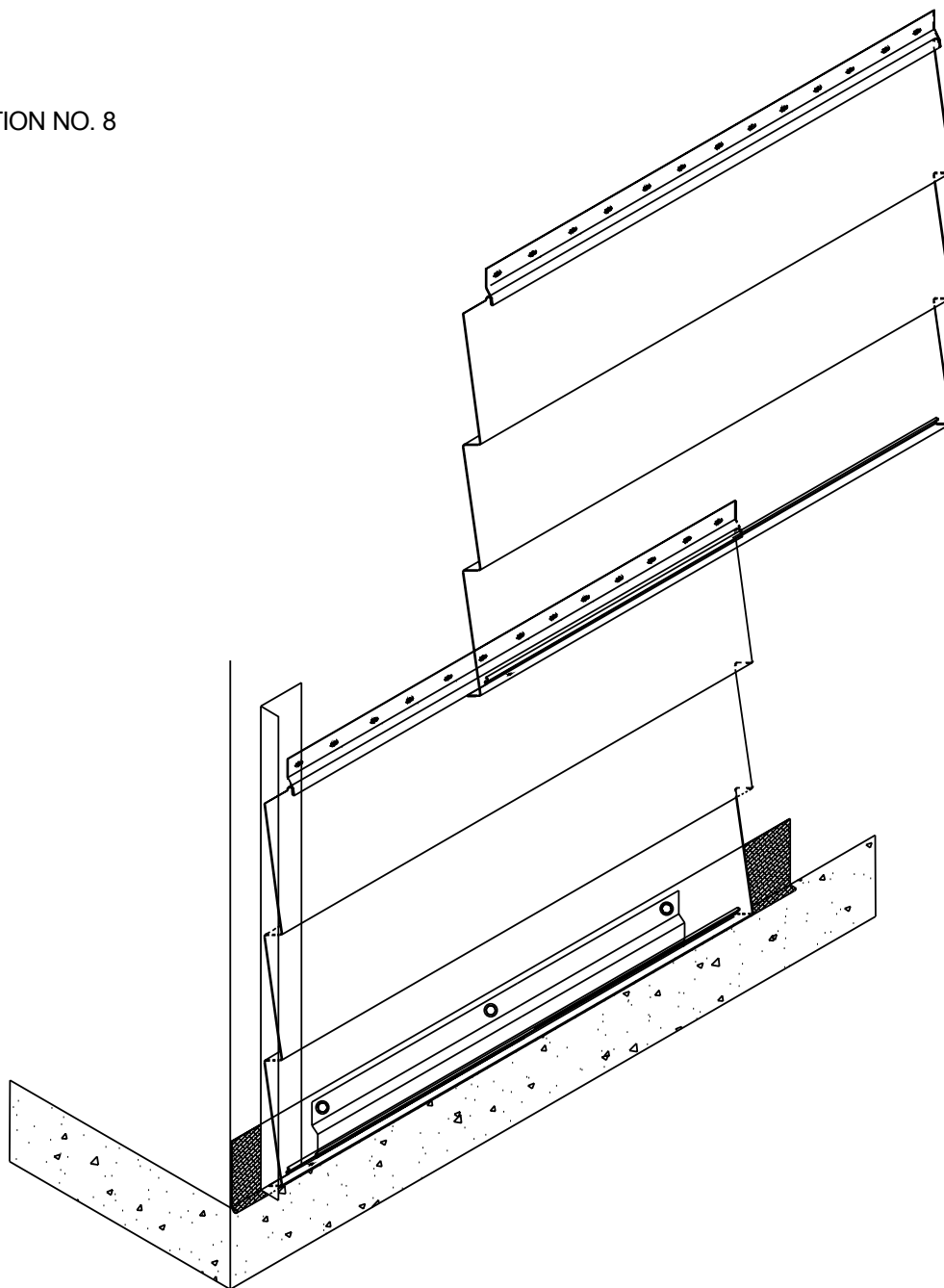
Procedure *(continued)*

6. Align the second panel bottom edge over the first panel top edge.
7. Fasten the panel as shown on page 17 and per the guidelines for fasteners on page 6.

*Note:* As additional panels are installed, make sure the panels are measured and cut properly for door and window openings. If panels are lapped end-to-end, see illustration No. 9 on page 19. During installation, measure both ends of every third panel to ensure they remain level.

Install panels to allow for expansion and contraction as noted on page 22.

ILLUSTRATION NO. 8

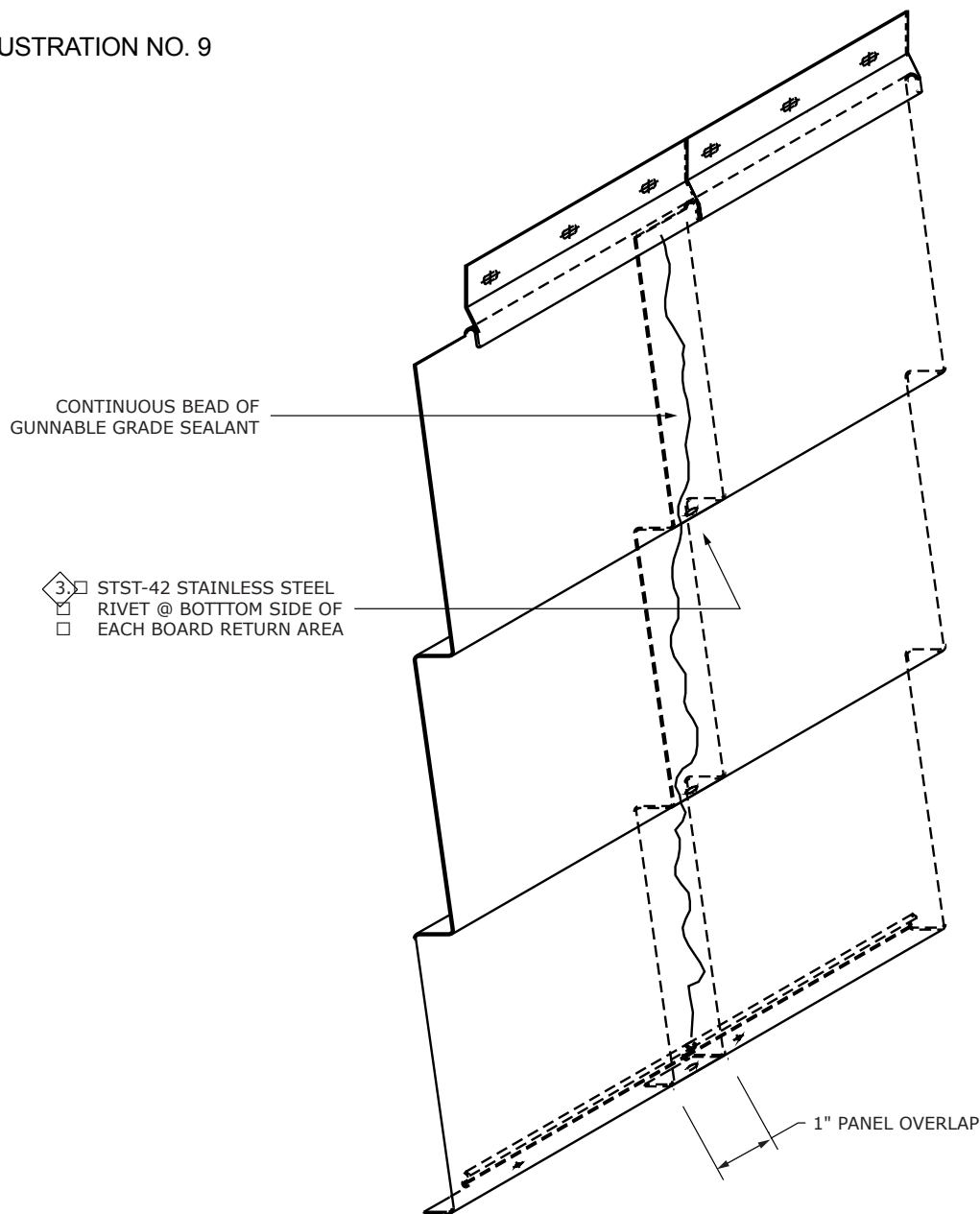


### Panel Endlap

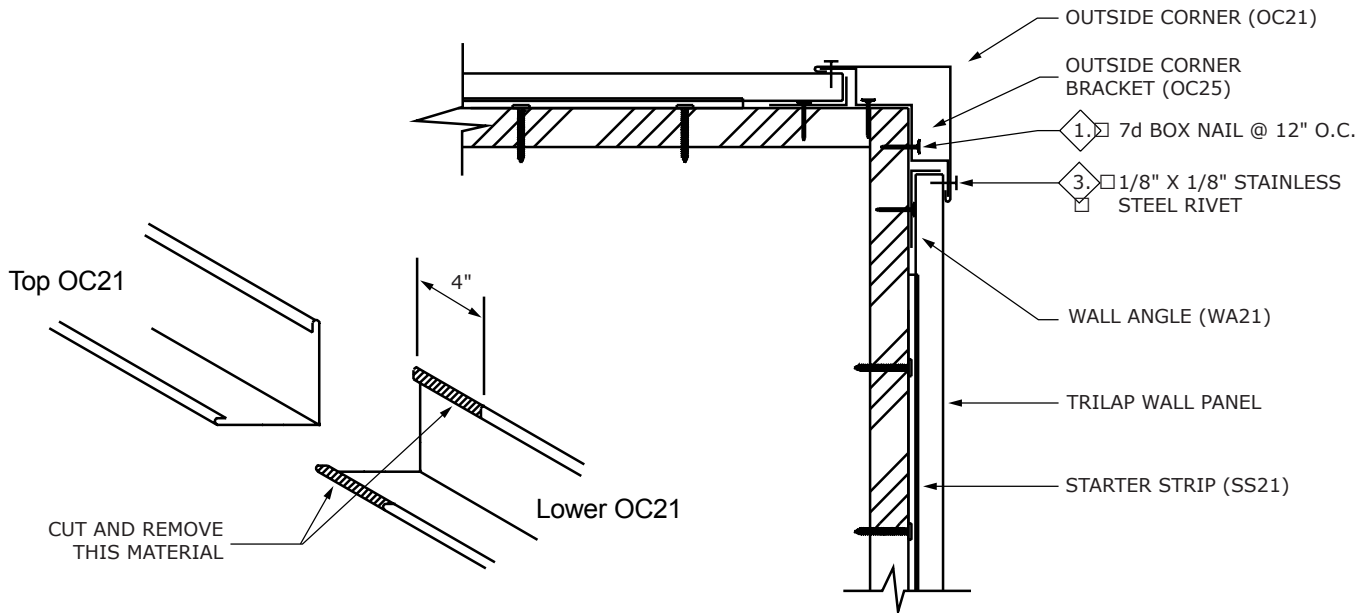
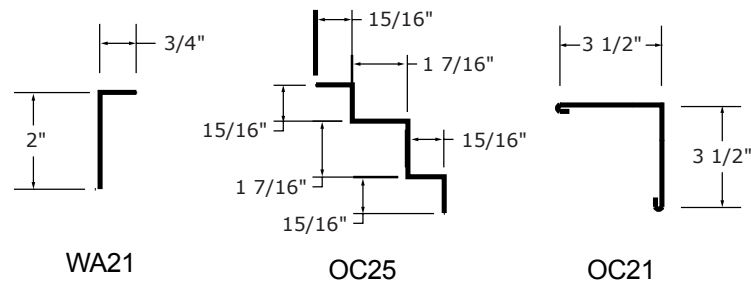
1. Panels lapped end-to-end should be overlapped 1".  
*Note: The panel is factory-notched to accommodate endlaps.*
2. Before lapping panels, place a continuous bead of gunnable grade sealant along the centerline of the endlap. (Chemically cured sealant is not recommended.)

3. Join the panel together and fasten as indicated on page 17.
4. Install one rivet on the bottom side of each board return area.

ILLUSTRATION NO. 9



## Outside Corner Flashing



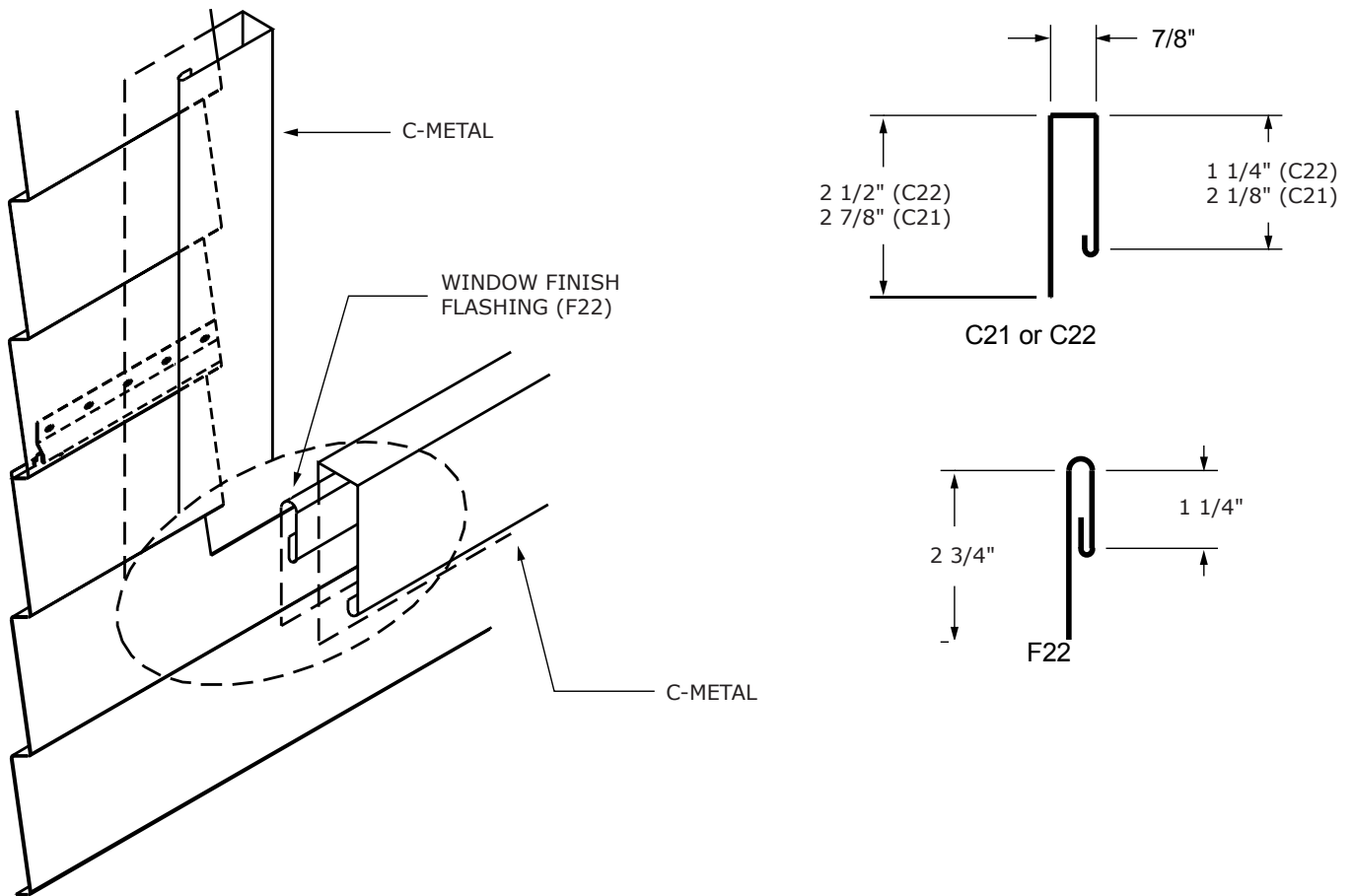
### Procedures

- Air infiltration barrier not shown.
- Install starter strip and base flashing as instructed on page 8.
- Attach Wall Angle (WA21) 1 1/2" from corner as instructed on page 9.
- Install Outside Corner Bracket (OC25) abutting the Wall Angle (WA21) as shown above. Attach every 12".
- Snap lock Outside Corner (OC21) over Outside Corner Bracket (OC25) starting at the foundation.

- Lap consecutive outside corner flashings 4" with lap joint facing downhill. Remove hem from bottom Outside Corner (OC21) before lapping. Rivet each side of the corner through the lap joint.

*Note:* For applications with a single 10'-0" corner, install a rivet on each side of the corner at the top. The rivet will attach the corner to the Wall Angle (WA21) so it will not slide off.

## Window Finish Flashing

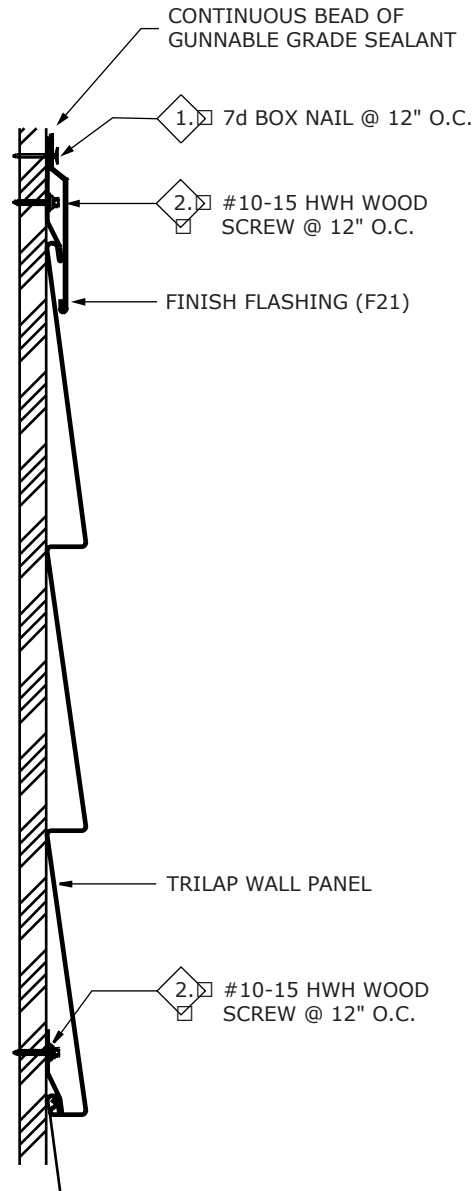
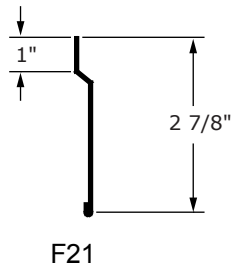


### Procedures

- Install window finish flashing (F22) in C-Metal (C21 or C22) at sill of long windows.
- Fasten 12" o.c.
- Insert cut edge of panel in window finish flashing (F22) to secure cut edge.

*Note:* A wood shime inserted behind window finish flashing (F22) is recommended to prevent oil canning.

## Top of Wall Finish Flashing

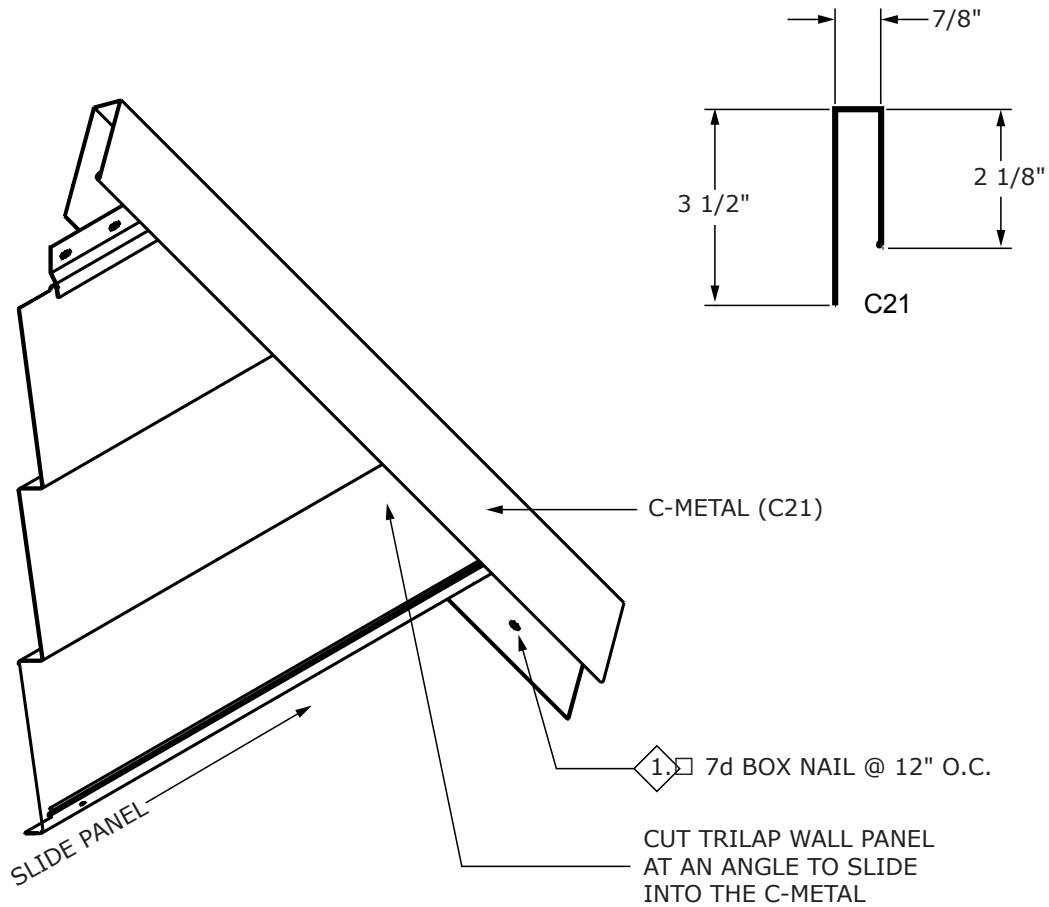


Panel Length	Total Movement with 100 $\mu$ change in temperature
10'	1/8"
20'	1/4"
30'	3/8"
40'	1/2"

### Procedures

- Air infiltration barrier not shown.
- Slide last panel into place. Fasten with #10 fastener at 12" o.c.
- Apply a continuous bead of sealant on the under-side of the Finish Flashing (F21)
- Attach Finish Flashing (F21) over edge of panel. Nail 12" o.c.

## Top of Wall/Gable Flashing



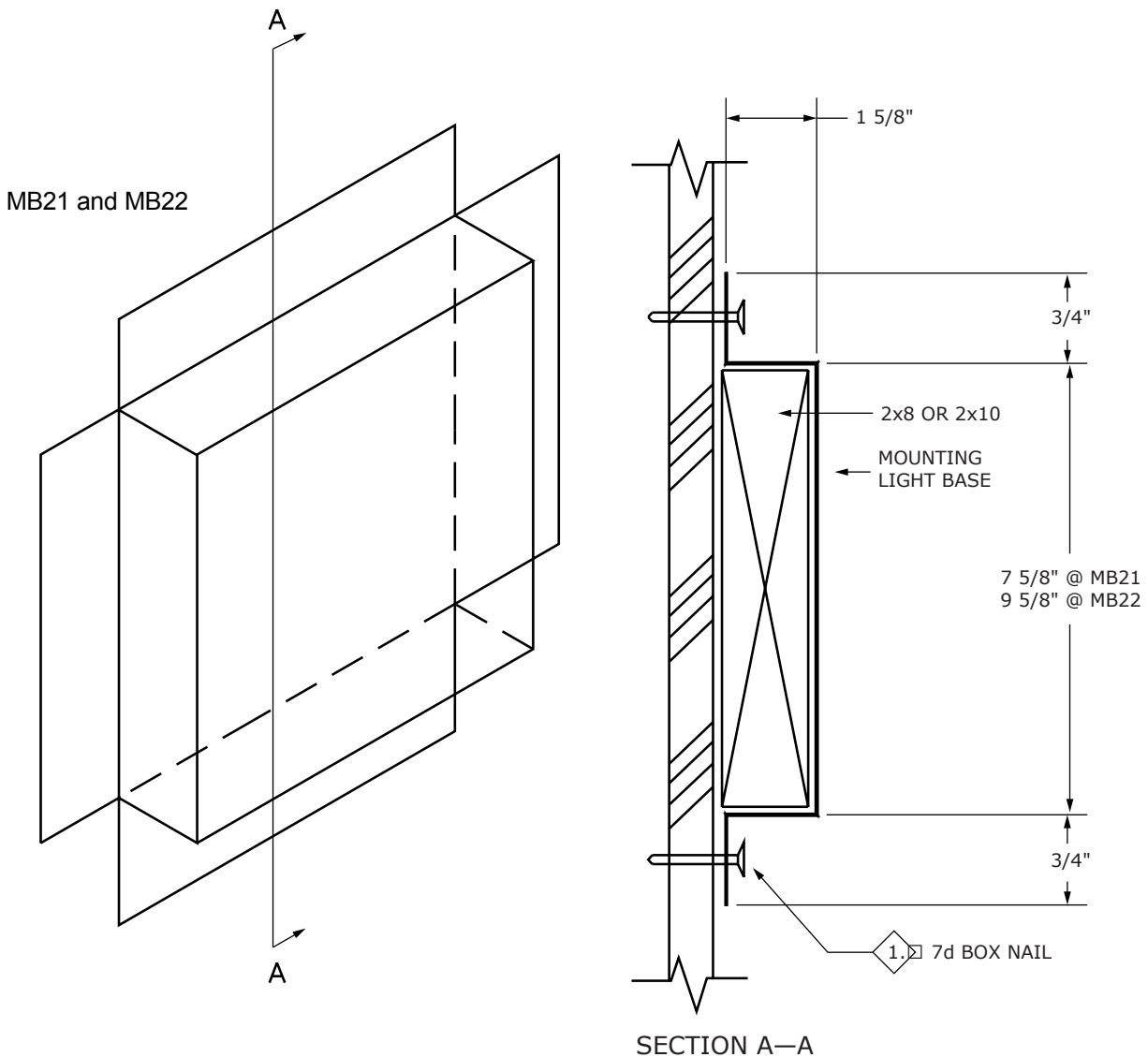
### Procedures

- Air infiltration barrier not shown.
- Install C-Metal (C21) along gable. Nail at 12" o.c.
- Measure and cut panel at an angle to slide into C-Metal (C21).
- Hook panel on previous panel and slide it into the C-Metal (C21).
- Fasten panel with a #10 fastener at 12" o.c. through pre-punched holes.
- To fit panel in opposite end, hold outside edge of C-Metal (C21) open to allow panel to slip inside.

*Note:* Dimensions on attachment flange may differ from illustration.



## Mounting Light Base Flashings



### Procedures

- Air infiltration barrier not shown.
- The Mounting Light Base (MB21 and MB22) is designed to provide a flat mounting surface for the wall. This will enable items such as exterior lights and exhaust fan vents to be attached to a surface matching the TriLap® Steel Siding color and texture.
- The covers are dimensional to enclose a square piece of wood 2 x 8 (7 5/8" x 7 5/8") or 2 x 10 (9 5/8" x 9 5/8").
- A square piece of 2 x 8 or 2 x 10 is attached to the wall before the TriLap panels are installed. Apply the Mounting Light Base (MB21 or MB22) over the 2 x 8 or 2 x 10, nailing through the attachment legs to hold in place.
- Prepare and install flashing similar to window and door flashing on pages 20 and 21, around the perimeter of the Mounting Light Base (MB21 or MB22). Install the TriLap wall panels.

## Final Instructions

### Clean-Up

- Inspect panel surfaces and flashings for loose debris and metal shavings.
- Remove debris and metal shavings by wiping panels down with a soft cloth.
- Dirt residue can be removed by washing panels with a mild detergent, water, and soft cloth.

### Repair

- Severe scratches, dents and holes will require panel replacement.
- Small scratches do not require touch-up paint if the scratch does not penetrate the Zinalume® substrate under the paint.
- ASC Building Products does not recommend touch-up painting of damaged surfaces (minor scratches, etc.) due to fading and weathering differences of the touch-up paints in comparison to factory-applied paint systems.


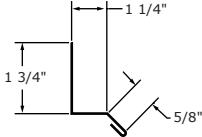
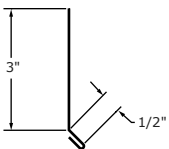
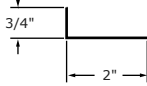
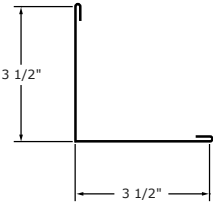
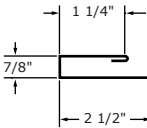
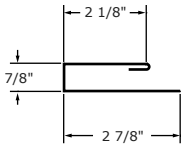
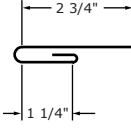
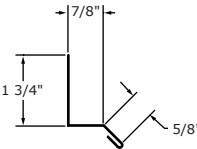
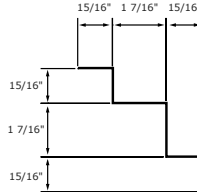
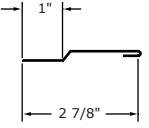
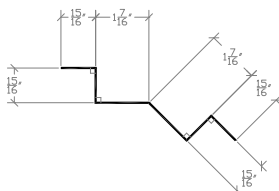
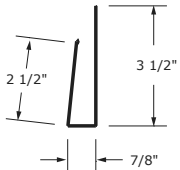
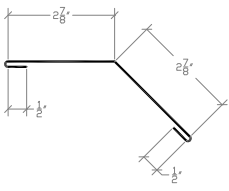
### Maintenance

- Inspect siding and flashings annually.
- Remove debris to ensure panels are moisture free.
- Tighten loose fasteners and repair joints that may need new sealant.
- If needed, wash panel surface with a mild detergent, water, and soft cloth.
- Re-painting panels should not be required for the life of the building. If a new color for panels or trim is required, please inquire with ASC Building Products for more information.

### Electrical Grounding (if required)

- All siding and flashings shall be grounded by attaching a No. 8 hot-dipped galvanized wire to an electrical ground rod with a connector approved by Underwriter's Laboratories.

### TriLap Siding Standard Parts

<p>SS21</p> 	<p>Starter Strip 26 gauge-Bare              page 8, 11, 12, 16, 17</p>	<p>B23</p> 	<p>Drip Flashing, painted              page 14</p>
<p>B21</p> 	<p>Base Flashing, painted              page 8, 11</p>	<p>WA21</p> 	<p>Wall Angle, painted              page 9, 11, 17, 20</p>
<p>OC21</p> 	<p>Outside Corner Flashing,              painted, page 20</p>	<p>C22</p> 	<p>C-Metal, painted              page 12, 14</p>
<p>C21</p> 	<p>C-Metal Flashing, painted              page 14, 23</p>	<p>F22</p> 	<p>Window Finish, painted              page 21</p>
<p>B22</p> 	<p>Drip Flashing, painted              page 14</p>	<p>OC25</p> 	<p>Outside Corner Bracket, bare              26 gauge              page 20</p>
<p>F21</p> 	<p>Finish Flashing, painted              page 22</p>	<p>OC26</p> 	<p>Outside Corner              Bracket 45°</p>
<p>US21</p> 	<p>Undersill Flashing, painted              page 13</p>	<p>OC27</p> 	<p>Outside Corner 45°</p>