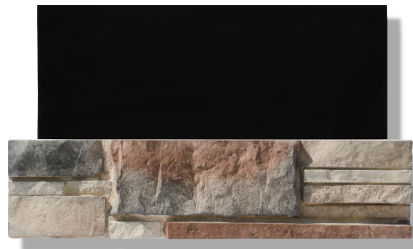




# SILVERMINE

## PRODUCT & INSTALLATION MANUAL



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## 1) WHY CHOOSE SILVERMINE

- 1) **WATER PROTECTION:** Silvermine's products are the only panelized stone product that meets both international and US building codes when installed directly over housewrap<sup>a</sup>. This is because of the patented<sup>b</sup> flashing system (See Figure 1) which serves as the secondary WRB<sup>c</sup>. Other products allow water between their panels and rely on drainage planes and barriers to protect the building. Despite their design, when attached, their panels provide areas for mold & mildew to form, insects to nest, and increase the risk of freeze/thaw issues, none of which are good in the long-term. For further explanation watch Silvermine's water impact video comparing Silvermine to other panelized systems ([https://www.youtube.com/watch?time\\_continue=3&v=Kg-sM-o5Ts&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=3&v=Kg-sM-o5Ts&feature=emb_logo)).
- 2) **EASIEST TO INSTALL PROPERLY:** - Silvermine's installation does not require a separate set of WRBs for drainage planes and eases the installation compared to the complex water drainage systems (drainage planes, drainage gaps, channels, etc.) required by other manufacturers which, when installed improperly, can cause significant damage.
- Silvermine's patented shingling system eliminates the need for a second layer of WRB other than housewrap. This alone reduces construction costs associated with both labor and materials.
  - The shingling system also acts as the attachment system when installed using Silvermine's approved fasteners. When modifying panels to fit in small spaces, Silvermine's flashing can be cut by simply scoring with a utility knife. Other panelized stone systems recommend using a grinder to cut the fastening system, a much more difficult process.
  - Silvermine's corners are shipped in 18 and 24 inch lengths. These are pre-cut and eliminate a cutting step. Many competitors' products are uniform length and require cutting to achieve proper panel spacing. This allows them to claim greater square footage coverage on the box but requires a cut which increase the labor required to install their systems and generates increased amounts of product scrap.
  - Silvermine does not require special drainage planes or have grooves in the panels. Silvermine's panels can be installed right over the house wrap and just rest on the prior course, making installation easier.
  - Silvermine's panels are an easy size to handle (6" X 24", only 13.5 lbs. per panel) versus larger, heavier panels of many competitors.
- 3) **SUPERIOR ESTHETICS:**
- Silvermine uses superior quality materials to make precise masters and molds. This allows for an extremely high rendition of the original stone details on our panels, extremely precise edges and Silvermine's approach to pouring prevents overpours, eliminating the need to scrape the edges. Great looking products that fit tightly together out of the box.
  - Silvermine has over 50 unique master panels. Many of Silvermine's competitors create a stone panel and flip it over to generate two "unique" panels. NO TWO of Silvermine's 50+ flat panel masters are the same regardless of orientation. Most panelized stone manufacturers have fewer than 10 truly unique panels when this flip count is removed - just ask them.
  - Silvermine takes the extra step to add pigment to the concrete mixture which colors the entire stone with one of three base colors. Paint is then applied into the molds prior to pouring in the colored concrete which giving the panels the unique looks and variation you expect by enhancing the stone patterns with color variations.
  - Silvermine's super clean panel edges minimize the appearance of seams and make installation easier.

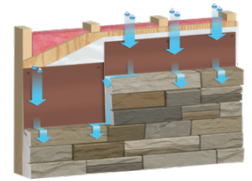


Figure 1

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<sup>a</sup> Install housewrap per manufacturer's instructions

<sup>b</sup> Patent number 8,387,323

<sup>c</sup> Water Resistive Barrier

## 2) SYSTEM & INSTALLATION OVERVIEW

**INSTRUCTIONS**<sup>d</sup> - This manual will guide you through every element of the installation process. Carefully read all installation instructions before starting your project, paying close attention to all safety precautions. The videos at [www.SilvermineStone.com](http://www.SilvermineStone.com) are a great resource for instructions and helpful hints for installation.

**SAFETY** - The foremost responsibility you have as you complete your installation is to observe all Silvermine's safety instructions and follow safe tool operating instructions provided by tool manufacturer.<sup>e</sup>

**SILVERMINE PANELS** - Panels are 6 inches high by 24 inches wide and weigh 13.5 lbs. Aluminum flashing is imbedded into the panel during casting. (See APPENDIX B –DRAWINGS - Fig. B-1 Flat Panel)

**SILVERMINE SHINGLING SYSTEM** - The aluminum flashing works with the stone panels to prevent water from getting to the underlayment through the panel seams. By design, Silvermine's integrated panel flashing does not run all the way to the edge of the stone, creating periodic "breathe" holes in the flashing behind the panels (see Figure 1). **Installing courses of stone, sills and accessories with 4 inch minimum vertical seam offsets is critical.**

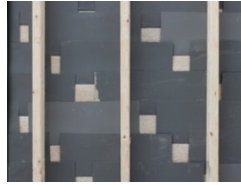


Figure 1

**LOCAL CODES** - The instructions found in this manual are specific to the Silvermine product. Care should be taken to make sure your installation complies with all local codes and requirements.

**STRUCTURE** - A successful stone installation starts with a sound, properly wrapped and flashed foundation as prescribed by local building codes. This ensures a protected substrate to which the stone flashing can be easily secured.

Silvermine's stone veneer panels should be applied over wood framing, spaced 16 inches on center, that has been sheathed with 7/16 inch OSB or 1/2 inch plywood sheathing<sup>f</sup>. Consult an architect or building engineer for wall design requirements on applications over 30 feet. Design wall framing to limit out-of-plane wall deflection to L/240. Sheath corners to meet local building code requirements and mitigate the effects of wall racking. Install roofing and interior wallboard prior to starting installation. Plumb walls to within 1/4 inch per 10 lineal feet.

**FLASHING** - Although Silvermine's patented flashing system provides 95% of the waterproofing requirements, properly flashing certain areas (around windows & doors, vertical & horizontal transitions from Silvermine Stone to other sidings, around vents, around outlet and light boxes, etc.) is critical to preventing water from getting behind Silvermine's siding and for overall water protection. **It is essential to ensure all required supplemental flashing is installed as instructed throughout this manual.** Building code requirements may vary, please check with local authorities to determine requirements for your area.

**STEP FLASHING** - Called out specifically as it is more common in roofing than in siding. As Silvermine's system is a shingling system, using step flashing on all vertical transitions and corners is critical. Step flashing is where the integrated aluminum flashing is flashed one course at a time as described in Section 12.

**STAYING LEVEL** - The key to a beautiful installation is to start and stay level. Check every piece before and after fastening, then check course for level before installing the next piece. This ensures panels fit snugly together without leaving an unsightly gap. Each course depends on the previous course being level.

**INSTALL SUMMARY** - If the structure is prepared properly with flashed corners and transitions as called for in the manual with level courses, applying Silvermine Stone is as easy as stacking and fastening it to the wall.

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<sup>d</sup> No instruction booklet can anticipate everything. We have focused on the tools and techniques necessary to complete a typical installation. If you encounter a situation not covered or have questions, please call the *Silvermine Help Line at 1-715-835-7595*.

<sup>e</sup> **PROPOSITION 65 WARNING** - This product contains Crystalline Silica. Dusts from cutting or sawing may create possible cancer hazard. Dusts of this product may cause irritation of the nose, throat, and respiratory tract. Avoid prolonged or repeated inhalation of dusts from this product. Refer to OSHA cutting standards for further information. Wash hands and face with soap and warm water immediately after handling this product

<sup>f</sup> If your building has framing more than 16" on center, consult your architect or engineer.

### 3) ESTIMATING REQUIRED SILVERMINE MATERIALS

Silvermine's estimating tool is available on the Silvermine website (<https://silverminestone.com>) and has all of the logic necessary to calculate your project material needs built into it. Enter the project measurements and the tool will calculate the number of flats (regular and starter), corners (regular and starter), sills, under opening sills, starter strips, fasteners and flashing necessary to complete your project.

APPENDIX A - STONE ESTIMATION SHEET contains all the information and measurements you will need to collect for estimating your project needs.

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### 4) TRANSPORTING, STORING & HANDLING

- Transport and store product in the original carton until ready to use.
- Use a hand dolly, cart, or forklift when moving boxed product.
- Stack no more than two cartons high. Build a good base and wrap the second layer with a plastic shrink film designed for freight shipping purposes.
- NEVER double stack pallets.
- Protect cartons from rain. Use a tarp to cover, but allow air circulation.
- Keep away from areas where product could incur damage from falling objects or other activity.
- Always wear heavy duty gloves and safety glasses. Integrated metal flashing is extremely sharp!
- Protect the face of panels from scratches.



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### 5) RECOMMENDED TOOLS & EQUIPMENT

#### Safety equipment

- |   |   |
|---|---|
| <input type="checkbox"/> Safety glasses <sup>g</sup>  | <input type="checkbox"/> Ear plugs                                |
| <input type="checkbox"/> Gloves <sup>h</sup>  | <input type="checkbox"/> Face shield when cutting panels          |
| <input type="checkbox"/> A properly fitted NIOSH approved N-95 series disposable particulate filtering face piece respirator (at minimum). <sup>i</sup> | <input type="checkbox"/> Steel toes boots                         |
|   | <input type="checkbox"/> Safety harness and hard hat as required. |

---

#### Recommended tools

- |   |  |
|---|--|
| <input type="checkbox"/> Circular saw with diamond blade <sup>j</sup>               | <input type="checkbox"/> Silvermine approved fasteners (required for Warranty Eligibility) |
| <input type="checkbox"/> Cordless drill & drivers to match fasteners <sup>k</sup> . | <input type="checkbox"/> 6' length level (for checking full course)                        |
| <input type="checkbox"/> 6' length level (for checking full courses)                | <input type="checkbox"/> Tape measure  |
| <input type="checkbox"/> 12"-16" level (for checking panels and accessories)        | <input type="checkbox"/> Chalk line  |

---

<sup>g</sup> Safety is the number one priority with any construction project. Always wear gloves when handling stone siding.

<sup>h</sup> Safety is the number one priority with any construction project. Always wear protective eye wear when cutting stone panels.

<sup>i</sup> Product contains Crystalline Silica. Dusts from cutting or sawing may create possible cancer hazard. Dusts of this product may cause irritation of the nose, throat and respiratory tract. Avoid prolonged or repeated inhalation of dusts from this product. Refer to OSHA cutting standards for further information. Wash hands and face with soap and warm water immediately after handling this product.

<sup>j</sup> A wet-saw can be used instead to help minimize airborne dust, but the spray from the saw will make the face of the panel dirty. This will need to be cleaned prior to installation.

<sup>k</sup> Square drive (S2 for Silvermine fasteners is included with fasteners). 3" driver bits minimize the potential for the drill or the chuck to damage the face of the panel while driving screws through flashing.

- Pencil/marker
- Rubber Mallet
- 5-gallon buckets (for rinsing panels)
- Soft Nylon Brush
- Extension Cord(s)
- Screw gun
- T-Bevel/Angle Finder (for peaks only)
- Utility Knife
- Masonry drill bits
  - 1/8" (for pilot hole)
  - 5/16" (for counter sink hole)
- Staple Gun (for installation of vapor barrier and flashing)
- Hammer and roofing nails for installation of flashing (if necessary)
- Tin snips
- Caulk gun

### **Other tools that may be needed**

- Ladder(s) and or scaffolding
- Electric hand grinder (with OSHA-approved guard and a diamond wheel or masonry abrasive wheel for grinding)
- Masonry Hole Saw (for penetrations)
- Impact screwdriver or Hammer drill (for installing over masonry)
- Air compressor for blowing out holes and stone dust removal

## **6) OTHER MATERIALS**

- House wrap<sup>l</sup>
- Construction Adhesive - *Liquid Nails Extreme Heavy-Duty Construction Adhesive*<sup>m</sup> - Application Temp: 22–120° F -6–49° C)
- 10" Aluminum Coil (for flashing)
- SAF<sup>n</sup> - *GCP Vycor Pro 9 in. Self-adhered Flashing Tape* (Apply:  $\geq 25^{\circ}\text{F}$ , Service:  $-40^{\circ}$  -  $176^{\circ}\text{F}$ )  
- *3M All Weather 9 in Flashing Tape*<sup>k</sup> (Apply:  $0^{\circ}$  -  $176^{\circ}\text{F}$ , Service:  $-40^{\circ}$  -  $240^{\circ}\text{F}$ )
- Drip Cap/Head Flashing (for almost all horizontal transitions)
- Composite Shims
- Exterior Grade Sanded Caulk (color matched)
- Waterproof Exterior Sealant - *Dap 18275 DYNAFLEX 920 Premium Elastomeric Interior and Exterior Sealant*

## **7) PREPARING FOR INSTALLATION:**

### **Exterior Application**

- Remove old siding material (for renovations). If removing siding prior to installing Silvermine, remove any old fasteners that may create uneven conditions on the wall. Some applications require the removal of the frieze board and/or soffit to allow for proper installation.
- Studs must be 16" or less on center<sup>o</sup>. Locate and mark the studs on the house wrap.

<sup>l</sup> A second layer of WRB is NOT needed - CHECK LOCAL BUILDING CODES as codes may state one is required regardless.

<sup>m</sup>Recommended for all weather conditions

<sup>n</sup> Self-adhered flashing

<sup>o</sup> If your building has framing more than 16", consult your architect or engineer.

- Walls must be sheathed with either 7/16" OSB or 1/2" plywood that is in good condition and properly fastened as per manufacturer's instructions and building codes.
- Wall framing must be designed to limit out-of-plane wall deflection to a minimum of L/240.
- Structure must be able to handle stone panel weight of 15 lbs./sq ft exclusive of any other external loading (i.e., wind or seismic load).
- Wall must be plumb and flat within 1/4" over 10' in any direction - Using a string along the wall, measure the deflection of the wall (from lower point of the wall to the string).
- Corners must be square.
- Per building code requirements and to protect the structure from vapor transmission a house wrap must be installed as per the manufacturer's instructions, prior to installation of Silvermine products.
- Buildings must be properly sheathed with house wrap and openings flashed per local building codes.
- A second layer of WRB is NOT necessary as Silvermine meets international building codes<sup>P</sup> without a second layer of WRB if it is installed per Silvermine installation instructions.

### **Interior Applications**


- Install minimum 7/16 inch or greater OSB or plywood substrate to wood studs, following the manufacturer's instructions. If there are any questions as to the structural integrity of the sheathing or framing, contact a qualified contractor or building inspector.
- House wrap and flashing are not required.
- Panels can be installed in contact with level floor, or baseboard trim. No clearance is necessary.

**WARNING: DO NOT INSTALL SILVERMINE DIRECTLY TO DRYWALL.**

## **8) FASTENING**

### **Fastening Unmodified<sup>Q</sup> Panels (Flats, corners, and pillars) using the Integrated Flashing**

- Each piece should be *fastened* as instructed below.
- GLUING - apply a 3/8 inch thick, quarter sized dollops of construction adhesive (every 6 to 8 inches) to the aluminum flashing each panel will cover. Glue should be ~2 inches above the bottom of the panel.
  - Glue all panels in high wind load areas
  - Glue all initial course panels
- FASTENER SPECIFICATIONS - For aluminum flashing, use only fasteners that meet the specifications below and drive them 90° to face of structure (See Figure 2)
 

<ul style="list-style-type: none"> <li>○ Head Types: <b>Pancake Head, Modified Truss Wafer Head, Washer Head</b></li> <li>○ Size: <b>#10x1-1/2" or longer</b></li> <li>○ Head size: <b>12mm or larger</b></li> </ul>		<ul style="list-style-type: none"> <li>○ Material: <b>Quality Multiple-Coated Steel or stainless steel</b></li> <li>○ Threads/Inch: 12 or less, <b>fully threaded</b></li> <li>○ Head : shaft angle: <b>90° shaft.</b></li> </ul>
--	---	---
- Using any fasteners that do not meet Silvermine's specifications or driving any fastener at an angle can damage the flashing and result in water damage and/or reduced performance in wind conditions.

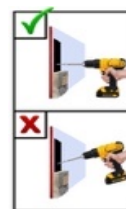


Figure 2


<sup>P</sup> ICC-ESR

<sup>Q</sup> "Unmodified panels still have the integrated flashing in place"

- Install fasteners at least 1 inch above the top edge of the panel to avoid water penetration. Drive fastener flush to the flashing/substrate layer. DO NOT overdrive fasteners as this can damage flashing.
- Each panel should have at least 1 fastener driven into a stud. Panels longer than 16 inches should have at least 3 fasteners and panels less than 16 inches should have at least 2 fasteners. In the rare cases where no fasteners can be driven into a stud, supplemental gluing as described above to aluminum flashing fastened to at least one stud is required. Additionally, apply a ¼ inch thick dashed line of adhesive along the top of the stone(s) the piece will be set on, leaving 2 inch spaces between “dashes” to allow water to escape.

### Fastening Modified Panels

- “Modified panels” are Silvermine panels where the integrated flashing has been removed.
- Modified panels *above four feet* **must** be “face-fastened” together with the use of construction adhesive. This ensures good contact between the panel and the bonding surface while construction adhesive is curing.
- As a rule, one fastener every 10 inches (horizontal length) of a modified panel will be enough to supplement the adhesive.
- Install face-fasteners as follows:
  - DO NOT USE A HAMMER DRILL for either drilling pilot & counter sink holes or driving face fasteners as the force may crack the panels.
  - Drill a pilot holes through the stone panel using a 1/8 inch masonry bit.
  - Drill countersinking holes 1/2 inch in the same locations using a 5/16 inch masonry bit, making sure to leave a minimum of 1/2 inch of stone behind the head of the screw.
  - Apply a 3/8 inch thick, quarter sized dollops of construction adhesive (every 6 to 8 inches) to the aluminum flashing the panel will cover 2 to 4 inches above the top edge of the panel beneath.
  - Apply a 1/4 inch thick dashed line of adhesive along the horizontal and vertical edges of the panels that will adjoin the modified piece leaving 2 inches between “dashes” to allow water to escape.
  - Install modified panel and press into adhesive to assure complete contact.
  - Drive screw(s) through the pre-drilled panel and into the substrate. Do not over-drive the screw as you will crack the panel. Use only enough torque to pull the panel into the adhesive and to maintain contact while adhesive cures.
  - Use a matching color exterior grade sanded caulk to cover the screw head and fill the counter sink hole.
- **Caution: Fasteners may crack a panel if installed in the simulated mortar joints.** It is best to select a thicker area of the panel to drill out the holes for the face fastening screws. Holes from drilling are easier to conceal in darker areas of the stone.
- **Note: Adhesive cannot be expected to hold if bonded directly to the house wrap or to SAF.** The adhesive needs a material to which it can achieve a strong bond and make a sound mechanical connection to sheathing/framing such as non-painted<sup>s</sup>, clean metal flashing or metal lath fastened securely to substrate and studs.
- Fastener Specifications (for face fastening):
 

	○ Head Types: <b>Bugle</b>	○ Material: <b>Stainless steel</b>
	○ Size: <b>#8, &gt;=2 1/2” long</b>	○ Threads/Inch: <b>15 or less</b>

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<sup>s</sup> Silvermine’s integrated flashing is designed and coated specifically for these applications. If purchasing flashing, use unpainted/uncoated flashing.



## **Fastening Sills**

- Apply a 3/8 inch thick, quarter sized dollops of construction adhesive (every 6 to 8 inches) to the aluminum flashing the sill will cover 1-2 inches above the top edge of the panel beneath.
- Apply a 1/4 inch thick dashed line of adhesive along the horizontal and vertical edge of the panels that will abut of the modified piece leaving 2 inches between “dashes” to allow water to escape.
- A minimum of 4 fasteners no less than 1 inch above the panel with at least 2 penetrating a stud per sill.
- Fastener specifications - same as Fastening Unmodified Panels.

## **Maintaining flashing integrity**

- Silvermine’s integrated flashing serves as the drainage plane and maintaining the integrity of this is critical to the long-term water proofing. IF you pierce the integrated, initial, or supplemental flashing and then decide to remove the fastener to change out a panel or move a fastener, YOU MUST seal the original hole with SAF.
- There must be NO UNSEALED FLASHING HOLES.

---

## **9) CUTTING<sup>t</sup>**

### **Safety First**

- Silvermine Stone is a concrete based product. Concrete products contain crystalline silica and when cut the silica dust may become airborne. Care should be taken to wear proper personal protective equipment, such as properly fitted NIOSH approved N-95 series disposable particulate filtering face piece respirator when mechanically altering this product (e.g., sawing, cutting, drilling, etc.) in addition to safety glasses and ear plugs.
- Always follow safe tool operation instructions provided by tool manufacturer.
- Use of a full-face shield is recommended and required with some cutting tools.<sup>u</sup>
- Concrete dust can cause skin and eye irritation, to help minimize this risk, wear a long-sleeved shirt, long pants, gloves, and safety glasses with side shields when cutting and installing material.
- Wash hands and face with soap and warm water after working with concrete based products.



### **Plan Your Cuts**

- Avoid cutting panels to a width less than 18 inches. This will help ensure at least one fastener can penetrate a stud. See Section 8 for fastening panels less than 18 inches in length.
- When selecting stones to cut, keep in mind where the cut will be facing and what the cut end will butt against. Consider how the seam will look from all directions. Avoid corners, focal points, and facing high traffic sightlines for the cut end. It is recommended to choose a panel where the cut edge thickness will be about the same as or less than the thickness of the adjacent panel/material.

### **Cutting Panels, Corners and Sills**

#### **Straight and angle cuts**

- **Warning: Do not cut more than one panel at a time.**

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<sup>t</sup> Contains Crystalline Silica. Dusts from cutting or sawing may create possible cancer hazard. Dusts of this product may cause irritation of the nose, throat and respiratory tract. Avoid prolonged or repeated inhalation of dusts from this product. Refer to OSHA cutting standards for further information. Wash hands and face with soap and warm water immediately after handling this product.

<sup>u</sup> Consult specific tool manufacturer for details.

- Use a continuous rim diamond saw blade circular saw rather than a segmented blade for cutting Silvermine. Segmented blades can cause cracking and chipping of panels.
- Mark the stone panel where it will be cut.
- Place panel face up on the saw table.
- Using circular saw to cut panels, the blade should pass through the panel slowly, to avoid cracking.
- Dust from cutting will leave a chalky appearance if not removed.
- If using a wet saw, change the recirculating water in the wet saw frequently to help keep the panels clean. Clean cut edges of panels by dipping or rinsing them in a 5-gallon bucket of clean water after cutting.
- Tips for cutting sills:
  - For shorter openings where only two sills are required, center field cut the sills so both pieces are equal length.
  - For longer openings where three or more sill pieces are required, field cut where sill pieces join so the cut ends are not visible. Plan your cut lengths to optimize aesthetics (personal taste).
  - Make cuts and install sills so field cuts adjoin and factory finish is at either end.

### **Electric Hand Grinder - for trimming and notching around obstructions**

A hand grinder with OSHA approved guard and a diamond wheel or masonry abrasive wheel for grinding may be required to complete certain cuts

### **Cutting Holes**

Use a drill with a masonry bit or a masonry hole saw or a grinder with a masonry blade to cut holes.

### **Cutting the Integrated Metal Flashing**

Use a utility knife to score and break the metal flashing. Tin snips can also be used.

## **10) INSTALLING INITIAL COURSES:**

An initial course of stone panels is any course without a course of stone panels below it (e.g., the bottom of a wall or above a door or window). See - - [Fig. B-2 Initial Course Over Foundation Wall Base](#) and [Fig. B-3 Initial Course Over Water Table Trim](#) for detailed initial course guidelines in addition to below.

### **Using A Leveling Board**

- A water table trim board or other level material below the initial course will allow you to skip this step.
- Determine the starting point for the installation. The bottom of the initial course must be a minimum of 4" above bare ground and 2" above paved surfaces when installing an exterior application.
- Once this point has been determined, snap a level line for leveling board. The line represents the top back edge of the board. Note: It is helpful to continue marking level lines at 2-foot intervals. This allows visual confirmation courses are remaining level.
- Ensure board is level and fasten sufficiently to hold panels as the initial course is completed.
- Once the initial course is installed, REMOVE THE LEVELING BOARD.

Note: if installing above an existing **level** trim board (e.g., skirt board/water table trim board), no leveling board is necessary as this will act as the leveling board.

Note: if using a leveling board or trim board is not possible, snap a leveling line for the initial flashing. After the initial flashing is installed, snap a second leveling line for use in installing the initial course of stone. Initial course stones must be held in position while fastened. Check work frequently to ensure level is maintained.

## **Initial Flashing (CRITICAL)**

- Each initial course will require flashing which must be a minimum of 8 inches tall. This the first layer of “shingling” and needs to extend at least 2 inches above the initial course of stone (thus the need for 8 inch-wide uncoated aluminum coil flashing).
- A drip cap/head flashing is required for most horizontal transitions. An effective drip cap for this application is a properly fastened 26-gauge metal (minimum) cap with a back leg at least 4 inches tall. The lower edge of the drip cap should lap  $\frac{1}{4}$  inch over trim (if applicable) and should have an outward bend. This outward bend in the drip cap ensures water drips off the edge of the metal rather than being drawn behind it.
- Properly fasten the drip cap/head flashing (in accordance with local building codes) above the leveling board/water table.
- Leave expansion gaps required by material manufacturers (e.g., a PVC water table may require at least a  $\frac{3}{8}$  inch gap to allow for expansion, consult manufacturer’s installation guides for correct gaps)
- Install initial flashing by securely fasten flashing with Silvermine approved fasteners applied 2 inches from top and bottom of flashing at each stud. This is to secure initial flashing as a base to secure the initial course with construction adhesive. Avoid placing fasteners where the vertical seams of the initial course will be placed.
- Initial flashing joints should overlap a minimum of 6 inches.
- If the initial flashing meets a vertical transition (like a door), either:
  - Cut flashing to fit snugly against the vertical edge. Apply a bedding sealant bead where the vertical edge is fastened to the sheathing using recommended sealant. Bed top edge of aluminum flashing into sealant and fasten securely with approved fasteners.
  - OR -
  - Use an 8” x 6” piece of recommended SAF to seal the aluminum flashing to the transition material to keep water from wicking behind it.

## **Installing the Initial Course**

- For the initial course, fasten flats and corners as per Section 8.
- Select an outside corner, a vertical transition, or an inside corner, in that order, to begin your initial course and work across the face of the wall, keeping level as you go.
- Position first flat on the leveling board/water table or align with the snapped level line and firmly butt against the corner or transition material. If there is an outside corner, ALWAYS start at the corner installing flat panels. If there are outside corners on either end of a wall, start at each outside corner and work your way to the middle.
- Using a short level, ensure the panel is level and aligned with the adjacent corner or trim. Use a level on **every** panel and accessory to ensure the panels stay level from panel to panel and course-to-course.
- Fasten the panel to the wall using Silvermine Stone approved screws (see Section 8).
- Continue installing panels using the instructions above for guidance until you have completed the initial course or worked your way to an inside corner.
- Complete the initial course as you would any other course - See Section 11.

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## **11) SUBSEQUENT COURSES (WORKING YOUR WAY UP THE WALL)**

Remember, install outside corners on the course you are working before installing panels.

Alternate left and right corner pairs as you work your way up the wall. This helps prevent the alignment of vertical seams and maintain the necessary 6 inch offset (See Figure 3).

### **Stair Stepping**

Corners and flats can be built up in a stair step fashion once the initial course of stone has been installed (See Figure 4). This technique improves efficiency, reduces installation time, and helps hide cut edges in inconspicuous areas.

Set a starting edge from which you will work right or left from.

- In the case of an outside corner, install the full outside corner (both sides), up to 8 courses at a time following the directions for installing outside corners. Never install a corner or panel unless there is a stone or transition below it.
- In the case of trim, the trim will set the edge. Step flash the edge<sup>v</sup> as you install the flat panels. Cut between 4 and 7 inches off the first flat panel on alternating courses to establish good seam offsets. Cut the stone, per the cutting instructions. If trim is not thick enough to cover the edge of the stone, you may want to grind down the panel edge to meet the trim edge or install a vertical drip edge to provide a finished look. Ideally, the trim should be equal to or thicker than the panel edge.

### **Completing courses**

When completing courses, cutting factory edges is unavoidable. However, avoiding cut edges in high visibility areas and near focal points is not difficult. Care should be taken to plan accordingly.

The following addresses three common installation scenarios and how to make unsightly cut edges less visible, if not invisible:

- ❖ If installing on a wall with two outside corners, pick a corner and work across to the other corner. Consider sight lines as you will likely have a cut edge to complete each course. You can cut the corners or the panels before the corners.
- ❖ If installing on a wall with one outside corner and one inside corner, start at the outside corner and work toward the inside corner. All cut edges should be close to and directed toward an inside corner.
- ❖ If installing on a wall between vertical trim where the trim will hide all cut edges; start at one end, and work toward the other end. If the trim is thinner than the thickest stones on the panels, work from the trim in a stair step manor toward the desired location of the cut stone(s)..

Continue working up the wall as previously instructed, ensuring all panels are properly installed.

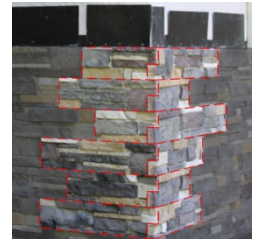


Figure 3

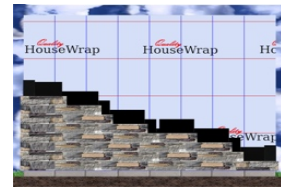


Figure 4

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## **12) SUPPLEMENTAL FLASHING & TRANSITIONS**

Refer to - for this section.

### **Step Flashing Defined**

Silvermine's patented integrated flashing system is designed to form a shingle-like pattern, much like that of a shingled roof. In the case of roofs, continuous flashing against a sidewall is one way to install a roof, but it's not the correct way. It may seem as if a single piece of flashing would offer more protection than many pieces of step flashing, but it doesn't work that way. Once even a small section of single flashing or shingling is pierced, a leak will occur. Each additional rain adds water, and before you know it, you've got rotted wood. In the long run step flashing will do a better job of preventing water leaks as step flashing redirects water back onto the shingle. Even if one piece of step flashing fails, the flashing and shingle below will start the process over again.

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<sup>v</sup> See "Flashing - Vertical Edges" section

Step flashing is the process of applying a shingle, then flashing the edge/transition, applying the next course of shingles above it, then flashing the edge/transition and repeating the process. There are many articles on step flashing roofs. The concept for Silvermine is the same with respect to all vertical (e.g., across courses) transitions.

### Flashing & Installing Outside Corners

Use Fig. B-4 Outside Corner w/ Step Flashing in conjunction with these instructions.

If there is an outside corner, ALWAYS start at the corner of the course you are working before installing flat panels.

- Apply construction adhesive to the initial flashing<sup>w</sup>.
- Align two pieces of a matched corner pair on leveling board for the starting corner.
- Adjust the pieces to fit snugly against the corner without gaps in the offset overlaps where the two pieces fit together. (Sometimes the corners of the wall are not perfectly square. Use composite shims, if needed, to compensate for slight variations of the wall.
- Press pieces in place, ensure corner panels contact the adhesive, that the corner panels are square and level in both directions and pieces then fasten corner panels to wall<sup>x</sup>.
- Cut and adhere a piece of SAF **over** the integrated corner flashing, covering the exposed corner. **DO NOT SCREW** through this. ***FAILURE TO DO THIS FOR EACH AND EVERY COURSE WILL EXPOSE THE BUILDING TO WATER AND COULD LEAD TO DAMAGE.***
- For each subsequent course continue this process of installing a course and then flashing.

### Flashing & Installing Inside Corners

- Use Fig. B-5 Inside Corner w/ Step Flashing in conjunction with these instructions.
- Measure from last installed flat panels to the inside corner on both sides.
- Miter two flat panels slightly less than 45° to the required lengths to fabricate the inside corner.
- Dry fit the mitered pieces and trim/grind mitered edges until you are happy with the fit. It may be helpful to bevel the sharp angles of the miter from the back of the panels where the mitered edges mate to allow the mitered edges of the face of the panels to fit tightly together, and the corner to be square.
- Apply construction adhesive to the underlying flashing as per Section 8.
- Position the mitered flats on the leveling board/water table.
- Adjust the pieces to fit snugly against the corner making the tightest joint possible
- Hold pieces in place, ensure they are square and level in both directions, and fasten following the instructions (see Section 8).
- Glue a 6" x 6" x 8+" piece of aluminum flashing (not included, can be ordered separately from Silvermine, or purchased from a hardware store or lumberyard) or place a piece of SAF 8+ inches high by sufficient width to seal the exposed housewrap **over** integrated corner flashing, covering the exposed inside corner. **DO NOT SCREW** - The corner pieces of the next course and the adhesive will hold this piece of flashing in place over the initial corner without the need to fasten in place. ***FAILURE TO DO THIS FOR EACH AND EVERY COURSE WILL EXPOSE THE BUILDING TO WATER AND COULD LEAD TO DAMAGE.***

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<sup>w</sup> See Section 12

<sup>x</sup> see Section 8 for details

## Flashing Vertical Transitions

Vertical transitions occur anywhere Silvermine Stone products meet another material's vertical edge. These edges must be flashed one course at a time. Use Fig. B-6 Vertical Transition w/ Step Flashing in conjunction with these instructions.

When the vertical transition interrupts the initial course as doors often do, the seam where the initial flashing adjoins the joint between the sheathing and the vertical transition material **must** be sealed. See Section 12 for instructions.

When the vertical transition occurs mid-wall, like a window, the flashing from the flats installed directly under the corners of the opening should be cut to fit tightly around the bottom and vertical edge of the opening. This seam must be sealed following the same methods referred to above and explained in Section 12.

From here, doors and windows are flashed identically. The difference between the vertical edge of an opening and the edge of a vertical cladding transition is the cladding transition typically terminates at the eave.

**CRITICAL:** Each time the last panel in the course is installed against the edge of the transition material, the vertical edge of the panel's flashing, the joint of the vertical edge, and the sheathing **must** be sealed one course at a time.

- When a cut panel is used and the cut edge will butt the transition material, the panel's flashing should adjoin tightly to the junction of the vertical edge and the sheathing. This joint must be sealed following the same techniques used to vertically terminate initial flashing. See Section 12 for details.
- When a factory edge is used, the flashing offset that creates the breathe holes must be flashed over to the vertical transition. These will require supplemental flashing.
  - Use an 8" x 6" piece SAF to seal vertical edge of the panel's flashing, exposed house wrap, and the seam of the transition material where it mates with the wrapped substrate.
  - Repeat this process for each course abutting the vertical edge as you work your way up the wall. This is called step flashing and if done properly, will seal the edge of Silvermine's integrated flashing system. *Doing this is critically necessary for waterproofing.*

## Flashing Horizontal Cladding Transitions with Stone below

Use Fig. B-7 Panels Below Siding & Fig. B-8 Panels Below Trim in conjunction with these instructions.

- Install drip cap flashing over the integrated flashing of the final course of panels or sills after they have been fastened securely to the structure.
- Apply a strip of recommended 6 inch SAF over the length of the vertical leg of the drip cap.
- Install the upper cladding as per the manufacturer's installation instructions.
- **Warning: Failure to properly flash horizontal cladding transitions will void warranty and allow water to flow behind the cladding, which could lead to damage of the foundation and structure.**

## Flashing Horizontal Cladding Transitions with Sills below

Use Fig. B-9 Sills Below Siding in conjunction with these instructions.

- When used as a Wainscoting Cap, the 36" sill piece is installed directly on top of the last course of stone veneer panels.
- Install sill **before** installing cladding material above. This will ensure the integrated flashing lays behind the cladding material above.
- Apply an 8+ inch strip of approved SAF over the sill's integrated flashing, covering all gaps and housewrap.
- The sill is now prepared to be mated with transition cladding. Follow installation instructions from the cladding's manufacturer.

- Note: If this is a remodel, and the existing cladding alone is an adequate substrate for stone veneer application, prep entire wall for cladding (check local building code), apply stone as wainscoting, properly flash, and install new cladding above.
- **Warning: Failure to properly flash between the cladding and the sill/stone below will void warranty and may result in foundation and structural damage.**

#### Under Openings (Trim removable, Sills or Panels Below)

Use Fig. B-10 Panels/Sills Below Openings w/ Removable Trim in conjunction with these instructions.

- Remove the trim board
- Cut the bottom of the panels (or in the case of a sill, the bottom of the panels below the sills) so the cut panel or the cut panel plus the sill will fit with room for the trim board and an expansion gap.
- Trim the integrated flashing of the last panel/sill so it adjoins the window/frame.
- Dry fit with the trim board.
- Apply a bead of bedding sealant where the bottom of the opening meets the sheathing.
- Bed the top edge of integrated flashing into sealant and fasten panels/sills as per fastening instructions.
- If installing panels, install a drip edge.
- Apply SAF over integrated flashing (and drip edge if installed) from edge of opening before replacing trim.
- Seal edges of trim and replace trim.
- If no drip edge, fill 3/8<sup>th</sup> inch gap with backer rod and sealant.
- In cases where there is a frieze trim board that yet to be installed under the eave, install the stone to the eave as above and use the frieze trim board in place of the face fastened stone. Be sure to leave a 3/16" gap between the top of the stone course and soffit to allow for expansion and prevent stone from crushing soffit. On new construction gap should be larger to allow for settling, at least 1/4" to as much as 3/8".

#### Sills Under Windows w/out Removable Trim

- Use Fig. B-11 Sills Below Window w/out Removable Trim in conjunction with these instructions.
- CAUTION: TEMPORARY PRESSURE OR SUPPORT MAY BE REQUIRED TO MAINTAIN FULL ADHESIVE CONTACT UNTIL SUFFICIENTLY CURED<sup>y</sup>.
- NOTE: Windows must be installed and flashed as per building code. See NHAB TechNotes - <https://www.nahb.org/-/media/NAHB/advocacy/docs/top-priorities/codes/technotes/tn05-window-and-door-flashing-201705.pdf> for flashing details.
- Prepare the components:
  - Cut supplemental unpainted aluminum flashing to fit snugly against the bottom edge of the opening, covering visible breathe holes.
  - Bend the sill flashing back on itself so the flashing folds down and is flush with the back of sill.
  - Trim the top of a modified panel to fit in the gap between the last full panel and the sill (this will hold the sill in place when fit).
  - Dry fit all parts to ensure tight fit, leaving a 3/8<sup>th</sup> inch gap between sill and opening.
- Apply a bead of bedding sealant where the bottom of the opening meets the sheathing.

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<sup>y</sup> Refer to adhesive manufacturer installation instructions for temperature and cure time recommendations. Recommended construction adhesive requires 48 hours or longer (temperature and humidity dependent).

- Bed the top edge of supplemental unpainted aluminum flashing into sealant and fasten securely with Silvermine's approved application screws.
- Leave 3/8" gap between sill and window frame.
- Apply 3/8 inch thick, quarter sized dollops of construction adhesive (every 6 to 8 inches) to the aluminum flashing behind the sill.
- Position sill and fasten integrated flashing to wall under sill – you may have to tilt sill up to install fasteners through integrated aluminum flashing.
- Apply 3/8 inch thick, quarter sized dollops of construction adhesive (every 6 to 8 inches) to the aluminum flashing behind the modified panel, to the top of the panel below the modified panel, and to the sill where the modified panel will contact the sill.
- Position modified panel below sill and press stone into place, ensuring good contact with adhesive. If modified panel is secure and contacting adhesive on all 3 sides, there is no need to face fasten the modified panel. If not, face fasten the modified panel.
- Fill 3/8" gap between sill and window frame with backer rod and sealant.

### Panels Under Windows w/out Removable Trim

Use Fig. B-11b Sills Below Window w/out Removable Trim in conjunction with these instructions.

- CAUTION: TEMPORARY PRESSURE OR SUPPORT MAY BE REQUIRED TO MAINTAIN FULL ADHESIVE CONTACT UNTIL SUFFICIENTLY CURED<sup>z</sup>.
- NOTE: Windows must be installed and flashed as per building code. See NHAB TechNotes - <https://www.nahb.org/-/media/NAHB/advocacy/docs/top-priorities/codes/technotes/tn05-window-and-door-flashing-201705.pdf> for flashing details.
- Trim flashing on second to last course under window so flashing adjoins against the bottom edge of window.
- Apply a bead of sealant to edge of the window.
- Install unpainted aluminum supplemental flashing, covering all exposed areas and bedding the top edge into the sealant and securely fastening flashing to wall - this will be the base for the adhesive that holds the modified panel in place.
- Trim flashing off the panel(s) that will mount directly beneath the opening (e.g., modify the panel).
- Cut drip cap so it fits over modified panel (see diagram).
- Cut panel lengthwise so there is just enough room for panel to fit in space with room for backer rod.
- Dry fit all parts, leaving a 3/16<sup>th</sup> inch gap between panel and bottom of window (gap to attach drip edge and for the backer rod).
- Apply a 3/8 inch thick, quarter sized dollops of construction adhesive (every 6 to 8 inches) to the aluminum flashing the modified panel will cover.
- Apply a 1/4 inch thick dashed line of adhesive along the top of the stone(s) the modified panel(s) will be set on, leaving space between "dashes" to allow water to escape.
- Press panel into place ensuring good contact with adhesive (face fasten panel if over 4 feet high).
- Apply sealant in gap and press drip cap into sealant. Fasten drip cap with screws. Fill gap with backer rod and sealant.

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<sup>z</sup> Refer to adhesive manufacturer installation instructions for temperature and cure time recommendations. Recommended construction adhesive requires 48 hours or longer (temperature and humidity dependent).



### Under Fixed Trim Situations (trim not removable, tight eaves, frieze boards, etc.)

Use Fig. B-12 Panels Under Fixed Trim in conjunction with these instructions.

- Silvermine ***does not*** guarantee water proofing when installing panels or sills in these situations as keeping water from behind the Silvermine paneling is entirely dependent upon how the trim has been installed and waterproofed. Check with trim installer or otherwise satisfy yourself prior to moving forward. Following is Silvermine's best recommendation in these situations.
- Trim flashing on second to last course under opening so flashing adjoins against the bottom edge of opening.
- Apply a bead of sealant to edge of the opening.
- Install unpainted aluminum supplemental flashing, covering all exposed areas and bedding the top edge into the sealant and securely fastening flashing to wall - this will be the base for the adhesive that holds the modified panel in place.
- Trim flashing off the panel(s) that will mount directly beneath the opening (e.g., modify the panel).
- Cut drip edge so it fits over modified panel (see diagram).
- Cut panel lengthwise so there is just enough room for panel to fit in space with room for backer rod.
- Dry fit all parts.
- Leave 3/16<sup>th</sup> inch gap between panel and bottom of opening (to attach drip edge and for the backer rod).
- Apply a 3/8 inch thick, quarter sized dollops of construction adhesive (every 6 to 8 inches) to the aluminum flashing the modified panel will cover.
- Apply a 1/4 inch thick dashed line of adhesive along the top of the stone(s) the modified panel(s) will be set on, leaving space between "dashes" to allow water to escape.
- Press panel into place ensuring good contact with adhesive (face fasten panel if over 4 feet high).
- Fill gap with backer rod and sealant.
- In cases where there is a frieze trim board already installed under the eave, install the stone as instructed in this section for under openings.
- A tight eave is defined as an eave where there is no soffit that can be removed and the Silvermine stone panels must be modified to butt against the eave. Install the stone as instructed in this section for under openings. Note: On new construction gap should be larger to allow for settling, at least 1/4 inch to as much as 3/8".

### Over Trimmed Openings

Use Fig. B-13 Initial Course Above Trimmed Openings in conjunction with these instructions.

- Install drip cap over opening.
- Once your courses on either side of the opening reach the point just below the opening and are step flashed on the vertical transition, apply SAF above the opening.
- For the course that intersects with the opening, the bottom of the course will, in all probability, not align perfectly with the top of the opening. In this case, cut a notch to fit over the transition (see drawing).
- Trim the bottom of the next panels to maintain a level course above the transition, repeating the notching scenario on the other side of the opening (do not forget to manage the flashing).
- Continue the course, maintaining level.

### Flashing Soffit Terminations

Use Fig. B-14 Panels Below Soffit in conjunction with these instructions.

- Remove soffit.
- Complete panel course as normal up to just below where the soffit will be replaced.
- Cut bottom of last course of panel so the panel will fit below where the soffit will go, allowing for the soffit manufacturer's required expansion gap.
- Trim the integrated flashing from the last (and possibly second to last) panels so at least 2 inches of existing housewrap is exposed.
- Apply SAF over flashing from last course of panels, ensuring that SAF fully overlaps last course and runs to eave and covers the exposed 2 inches of housewrap.
- Replace the soffit, making sure it is properly flashed and tied in.

### Flashing & Installing Light and Electrical Boxes

Use Fig. B-15 Electrical & Light Box Installation in conjunction with these instructions.

- Identify electrical outlet connection location and verify power has been disconnected<sup>aa</sup>.
- Prepare electrical box - install electrical box extension (available at hardware stores) to existing electrical box keeping box level and plumb. If a telescoping electrical box extension is being used, fasten it using 1-1/2" screws. (fasteners should penetrate framing a minimum of 1"). The extension box flange should be set equal to the thickness of the Silvermine Accessory Box (Outlet or Light which ever applies).
- Accessory Boxes come with 2 pieces of integrated flashing to allow for directional installation. Remove the flashing on the edge that will be vertical, leaving the flashing on the edge that will be the top. Place Accessory Box over electrical box and trace around outline of stone onto housewrap marker.
- Install panels until course of stone panels is such that a full panel (stone portion) can no longer fit below where Accessory box will be installed. The aluminum will overlap your outline of the Accessory Box. Cut a hole in the flashing with tin snips so electrical box will fit through the aluminum flashing.
- Using SAF, flash around outlet box 12 inches on either side of and 8 inches above electrical box.
- Install the next course until the panel reaches the edge of the Accessory Box. Cut the panel edge to adjoin the Accessory Box.
- Cut a piece of stone with the flashing attached so it fits below the Accessory Box outline and install. The width of the stone will be the width of the accessory box.
- Place the Accessory Box in position but do not fasten.
- Install the next stone in the course.
- Remove Accessory Box and apply SAF the across the aluminum of the two stones on either side of the Accessory Box.
- Install the Accessory Box.
  - Apply a 1/4 inch thick dashed line of adhesive along the top of the stone(s) the Accessory Box will be set on and along the edge of the stones to the left and right of the Accessory Box, leaving 2" spaces between "dashes" to allow water to escape.
  - Fasten the Accessory Box's integrated flashing with two Silvermine approved application screws correctly driven into framing at least one inch above the top of the box and press into adhesive to assure complete contact.
  - Maintain pressure against Accessory Box to ensure proper initial bond. It may be necessary to insert a wedge or shim between electrical box extension and Accessory Box or Silvermine Stone panels, to hold

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<sup>aa</sup> Failure to turn off electrical power may result in death.

the Accessory Box plumb during curing. TEMPORARY PRESSURE OR SUPPORT MAY BE REQUIRED TO MAINTAIN FULL ADHESIVE CONTACT UNTIL CURED<sup>bb</sup>.

- Continue to finish the course.
- Install the next stone course. When the Accessory Box is reached, cut a notch in the bottom corner of the panels so the panel fits around the Accessory Box. Dry fit both panels to ensure proper fit. Apply a 1/4 inch thick dashed line of adhesive along the top of the Accessory Box prior to installing the notched panels, leaving 2” spaces between “dashes” to allow water to escape.
- Finish wall.

### Flashing & Installing Vents

Use Fig. B-16 Vent Installation in conjunction with these instructions.

- These instructions assume a vent with integrated flashing.
- Install panels up to the point where the integrated flashing on the panels overlaps the vent hole. Using tin snips, trim the flashing around the hole.
- Position and install vent, with the vent flashing overlapping the integrated stone flashing.
- Using SAF, seal the vertical and top edges of the vent flashing to the house wrap/integrated flashing.
- Install the next course of panels. Trim the top edge of the stone so it fits around vent. Position stone so there is sufficient integrated flashing remaining to secure the stone. Do this for both sides of vent & dry fit.
- Apply 3/8 inch thick, quarter sized dollops of construction adhesive (every 6 to 8 inches) to the aluminum flashing the partially modified panel will cover.
- Apply a ¼ inch thick dashed line of adhesive along the top of the panels below the notched, partially modified panel prior to installing the notched panels. Leave 2” spaces between “dashes” for water to escape.
- Step flash the panels on either side of the vent opening (See Flashing Vertical Transitions section).
- Install the next stone course. When the vent is reached, cut a notch in the bottom corner of the panels so the panel fits around the vent. Dry fit both panels to ensure proper fit. Apply 3/8 inch thick, quarter sized dollops of construction adhesive to the aluminum above the vent. Install panels. Continue up wall.

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## 13) CARE & MAINTENANCE

Proper care and maintenance will ensure your investment looks as good in 20 years as did the day it was installed.

### Regular Cleaning

- Use soap and water with a nylon bristle brush to remove dirt.
- DO NOT POWERWASH - Power washing can remove the coloring from the stone.
- DO NOT CLEAN WITH HARSH CHEMICALS OR ACID PRODUCTS.

### Avoid Salt and De-Icing Chemicals

Silvermine products are not warranted against damage caused by salt or de-icing chemicals. Do not use these products on the Silvermine product or in adjacent areas as these substances may splash onto the product. ALL concrete and masonry materials are susceptible to damage from these chemicals.

### Avoid Unnecessary Water Contact

Do not allow sprinkler system spray or run off water contact the finished wall. Consider adding a gutter extension to avoid splashing water on Silvermine panels. Failure to do this may cause efflorescence.

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<sup>bb</sup> Refer to adhesive manufacturer installation instructions for temperature and cure time recommendations

## **Efflorescence**

Efflorescence, a white powdery deposit, can occur on the stone surface. It is caused by water soluble salts migrating through the panel.

Rarely, efflorescence may occur on Silvermine Stone products. Scrub dry stone thoroughly with a medium bristle (NOT WIRE) brush and rinse with clean water. For more stubborn deposits, use a solution of 1-part white vinegar to 5-parts water and scrub stone with a medium bristle brush. Rinse thoroughly with clean water.

## **Water Repellent Treatment/Sealers**

Sealers are not necessary on Silvermine Stone products. However, some customers use sealers to help prevent staining in applications prone to smoke, soot, dirt, etc. If you choose to use a sealer, make sure it is a Silane, Siloxane, or Silane-Siloxane blend breathable sealer. Understand applying a sealer may darken the color of the stone. A sealer may also slow the natural movement of moisture out of the stone and increase the possibility of efflorescence and/or spalling. For information regarding performance or application of sealers, contact the manufacturer of the sealer directly.

## **Replacing Damaged Panels**

Remove the damaged stone. If possible, remove the stone material without removing its integrated flashing, and do not damage the integrated flashing of the panel(s) immediately below the one you are removing. Using a masonry saw or grinder with a diamond blade and proper personal protective equipment, remove the bulk of the material and finish by carefully chipping away the balance with a hammer and chisel.

Cut a piece of flashing to fit, tuck under the flashing left from the removed stone, and securely fasten in place.

Trim replacement panel to fit and follow face fastening instructions in Section 8.

## **14) DEALING WITH COMPLIMENTS**

Silvermine recommends the following approaches to dealing with the many compliments you will encounter following completion of your installation:

- Be gracious - Don't gloat that your property looks so great.
- Take credit for doing it yourself if you did - you did and it looks great, so pat yourself on the back.
- Ask for landscaping advice - it's nice to be inclusive.
- Tell them it is Silvermine (thanks for the word of mouth advertising).
- Send photos of your project (before and after) to [Photos@silverminestone.com](mailto:Photos@silverminestone.com) to have them posted on Silvermine's website. Then you can tell people your project is posted on Silvermine's website! And you will be entered into our periodic project drawings for a chance to win \$\$.

## APPENDIX A - STONE ESTIMATION SHEET

### Rectangular dimensions (walls)

<u>Wall #</u>	Height		Length		Sill on top?
	Feet	Inches	Feet	Inches	
1					
2					
3					
4					

### Large Openings, e.g., windows, doors, garage doors (areas not covered by stone)

<u>Opening #</u>	Height		Length		Opening on ground (e.g., door)?
	Feet	Inches	Feet	Inches	
1					
2					
3					
4					
5					
6					

### CORNERS calculation

	Height		Sill on top?
	Feet	Inches	
1			
2			
3			
4			
5			
6			

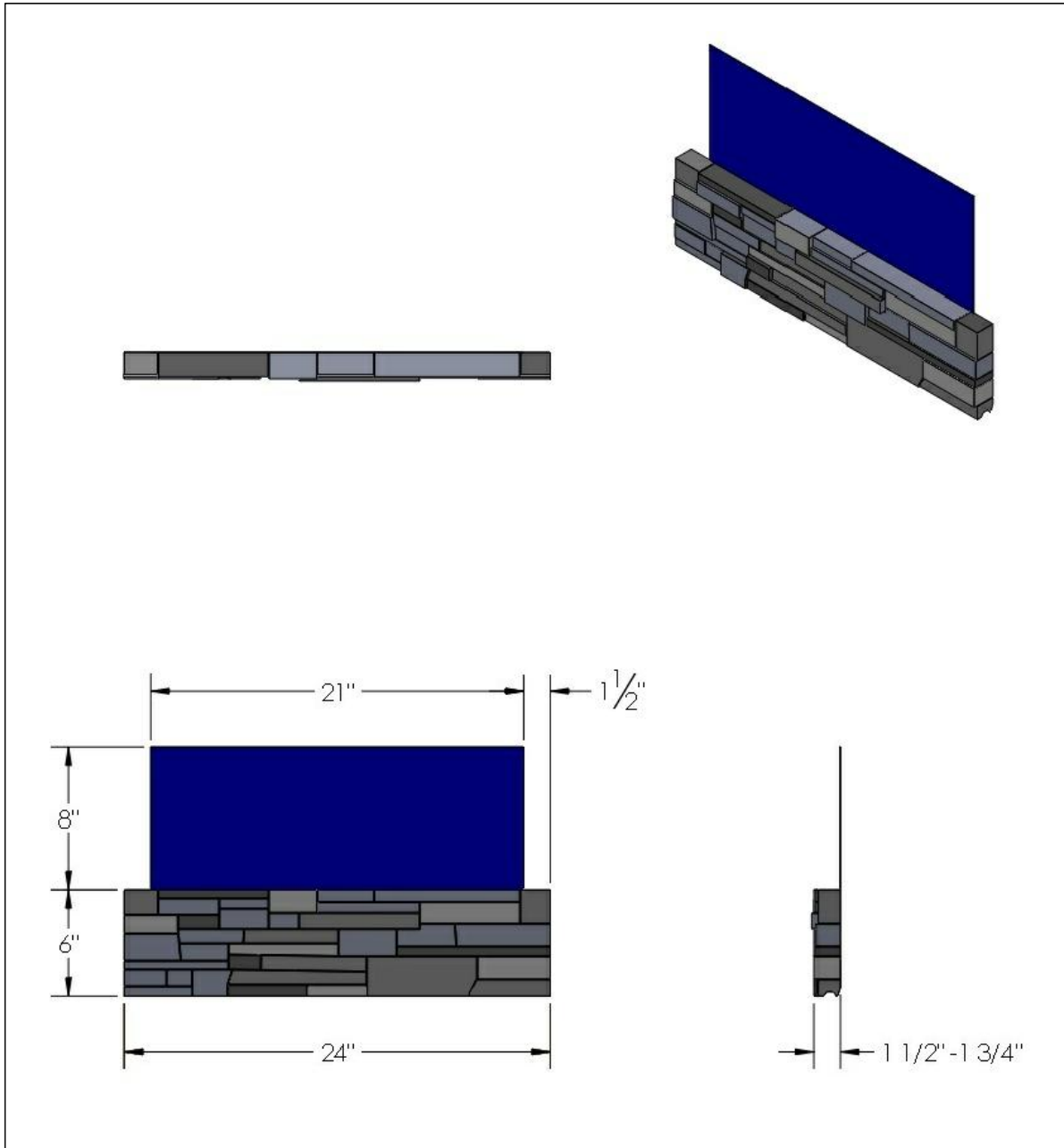
### Peak (non-rectangular) calculations


	Sq Feet
1	
2	

Buffer %

# APPENDIX B – DRAWINGS

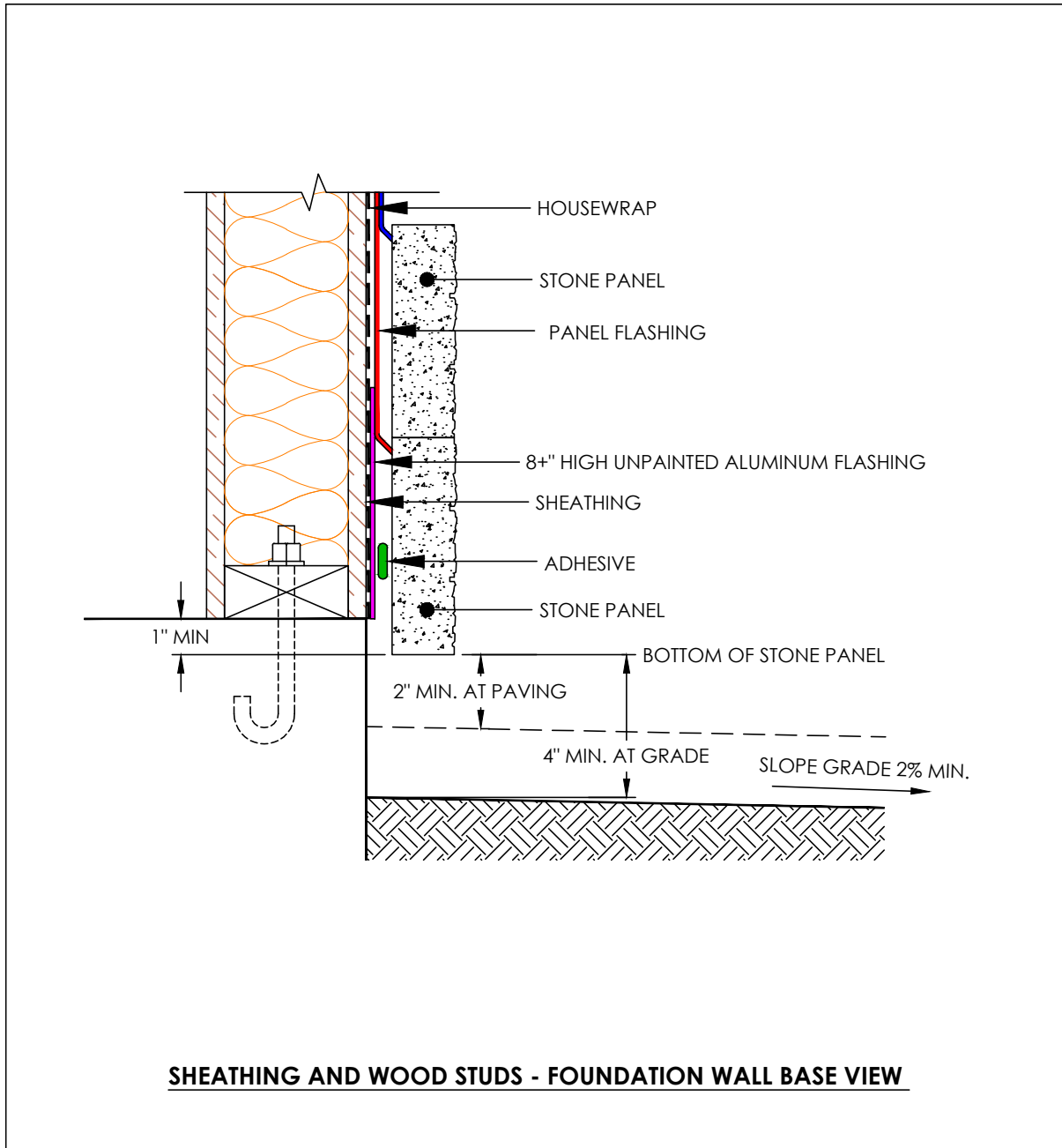
## Fig. B-1 Flat Panel




 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:			NAME	DATE	SILVERMINE STONE COMPANY		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16"			DRAWN	S.G.	11/12/20	TITLE:  <h2 style="text-align: center;">Flat Panel</h2>	
				CHECKED				
				ENG APPR.				
				MFG APPR.				
MATERIAL			COMMENTS:			SIZE	DWG. NO.	REV
CONCRETE / ALUMINUM						<b>A</b>	Fig. B-1	
FINISH								
DRAWING NOT TO SCALE						SCALE:	WEIGHT:	SHEET 1 OF 1

## APPENDIX B - INSTALLATION DRAWINGS

**Fig. B-2 Initial Course Over Foundation Wall Base**

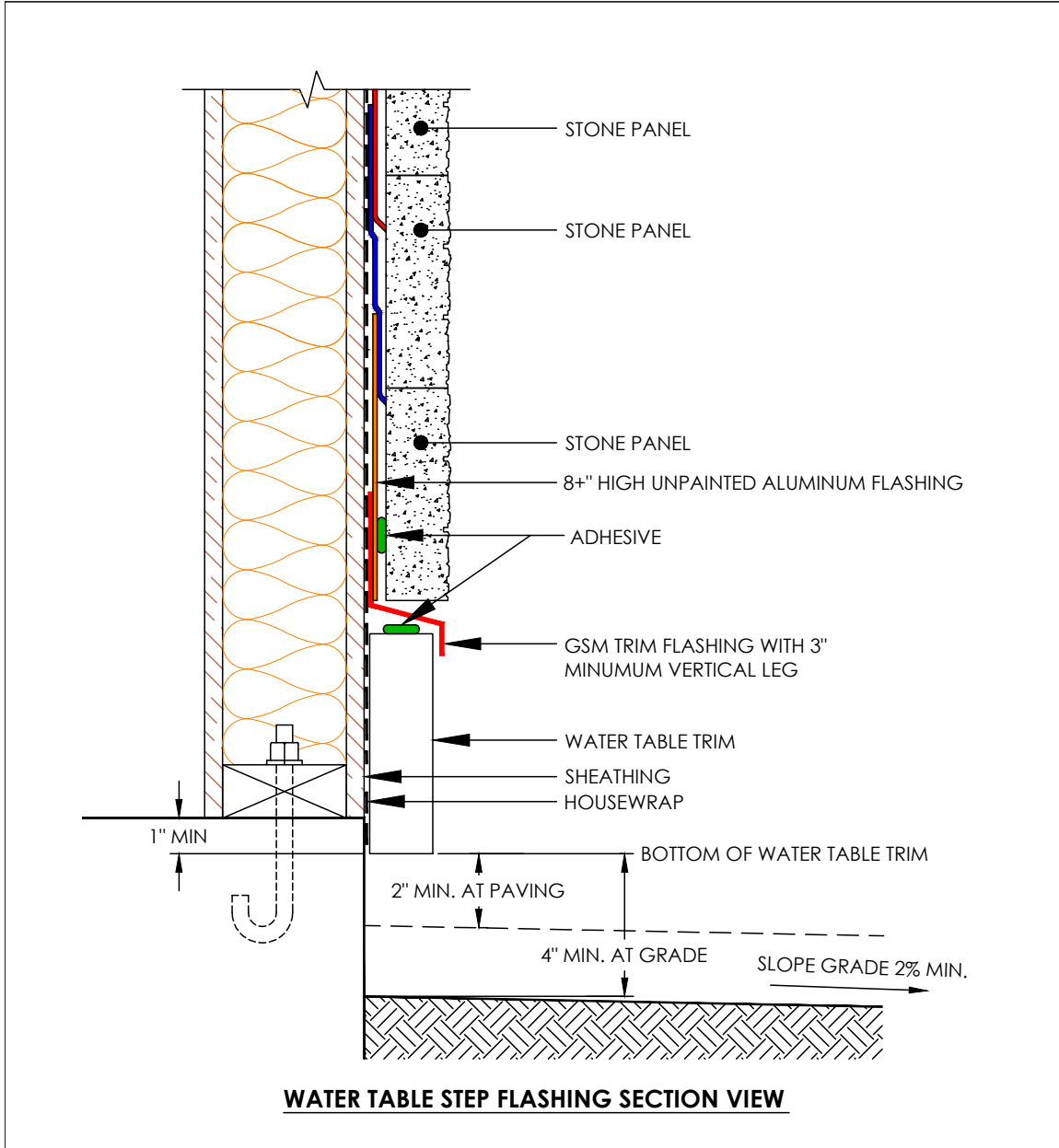


**SHEATHING AND WOOD STUDS - FOUNDATION WALL BASE VIEW**

 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	SILVERMINE STONE COMPANY  TITLE: <h3 style="margin: 0;">Initial Course Over Foundation Wall Base</h3>	
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"		DRAWN	S.G.		
			CHECKED			
			ENG APPR.			
			MFG APPR.			
MATERIAL		COMMENTS:		SIZE	DWG. NO.	REV
CONCRETE / ALUMINUM				<b>A</b>	Fig. B-2	
FINISH				SCALE:	WEIGHT:	SHEET 1 OF 1
DRAWING NOT TO SCALE						

## APPENDIX B - INSTALLATION DRAWINGS

### Fig. B-3 Initial Course Over Water Table Trim

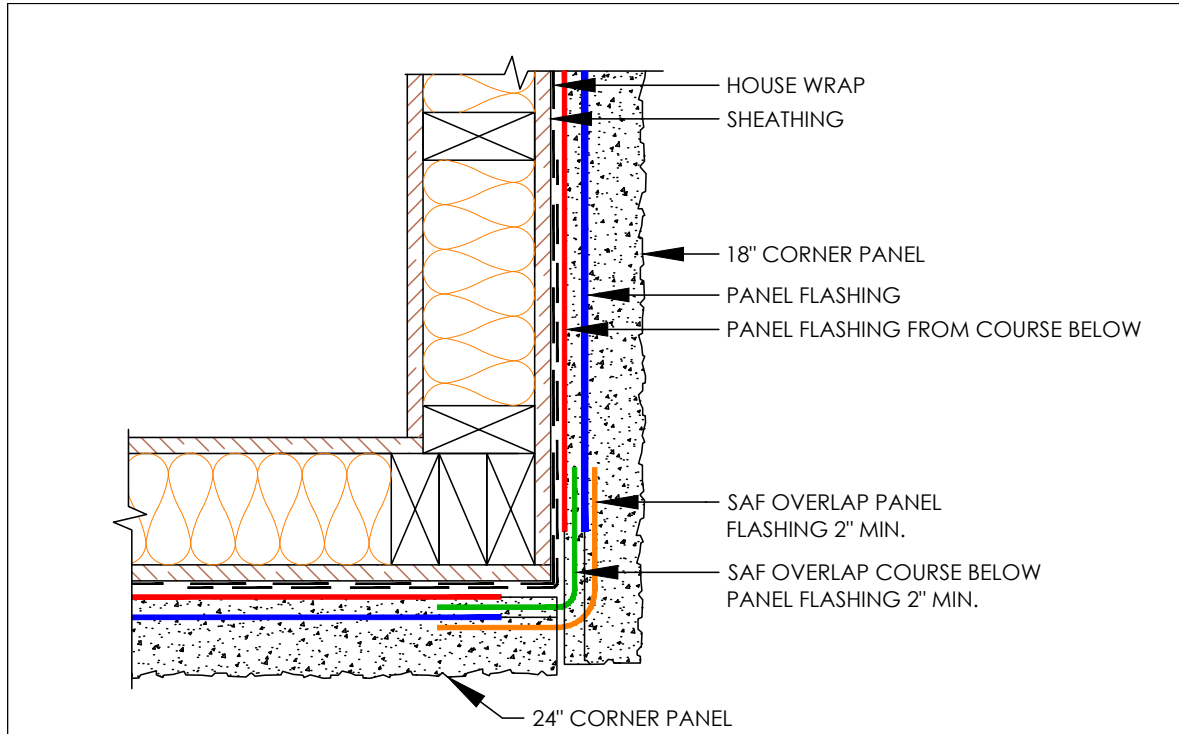


<p><b>SILVERMINE®</b></p> <p>SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM</p>	UNLESS OTHERWISE SPECIFIED:	NAME	DATE	SILVERMINE STONE COMPANY		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"	DRAWN	S.G.	11/12/20	TITLE:  <h3 style="margin: 0;">Initial Course Over Water Table Trim</h3>	
	MATERIAL CONCRETE / ALUMINUM	CHECKED				
	FINISH	ENG APPR.				
	DRAWING NOT TO SCALE	MFG APPR.				
	Q.A.			SIZE	DWG. NO.	REV
	COMMENTS:			<b>A</b>	Fig. B-3	
				SCALE:	WEIGHT:	SHEET 1 OF 1

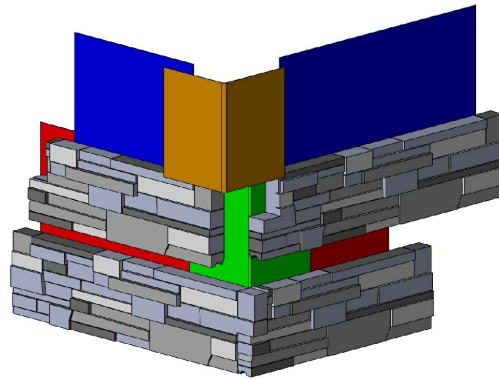


## APPENDIX B - INSTALLATION DRAWINGS


**Fig. B-4 Outside Corner w/ Step Flashing**



**SHEATHING AND WOOD STUDS OUTSIDE CORNER PLAN VIEW**

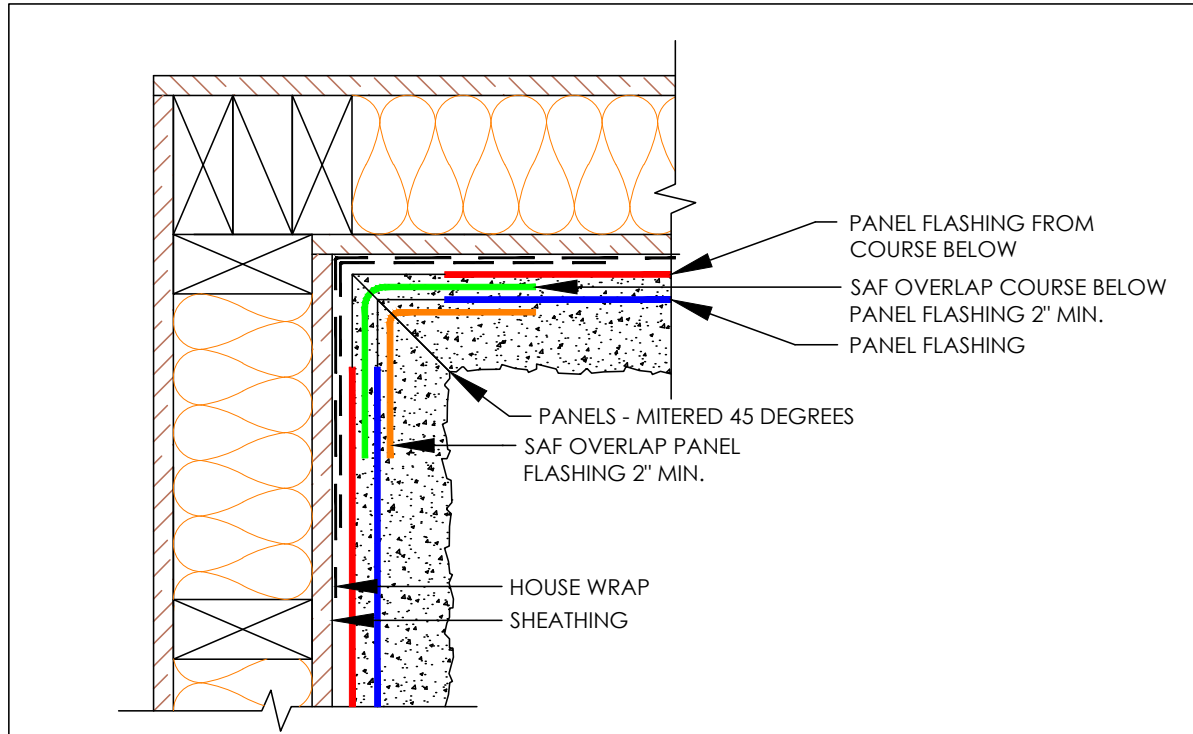


**SHEATHING AND WOOD STUDS OUTSIDE CORNER EXPLODED VIEW**

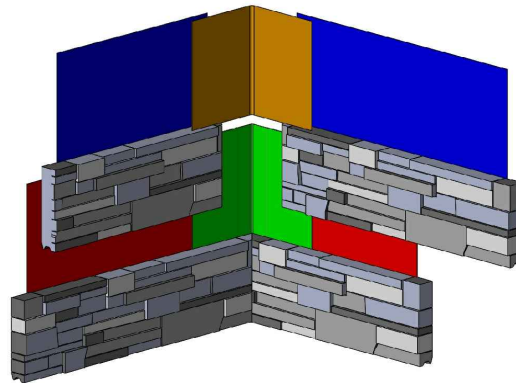
 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:	NAME	DATE	SILVERMINE STONE COMPANY		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"	DRAWN	S.G.	11/12/20	TITLE:  <b>Outside Corner w/ Step Flashing</b>	
	MATERIAL	CHECKED				
	CONCRETE / ALUMINUM	ENG APPR.				
FINISH	MFG APPR.					
DRAWING NOT TO SCALE	Q.A.			SIZE	DWG. NO.	REV
	COMMENTS:			A	Fig. B-4	
		SCALE:	WEIGHT:	SHEET 1 OF 1		

## APPENDIX B - INSTALLATION DRAWINGS


### Fig. B-5 Inside Corner w/ Step Flashing



**SHEATHING AND WOOD STUDS INSIDE CORNER PLAN VIEW**

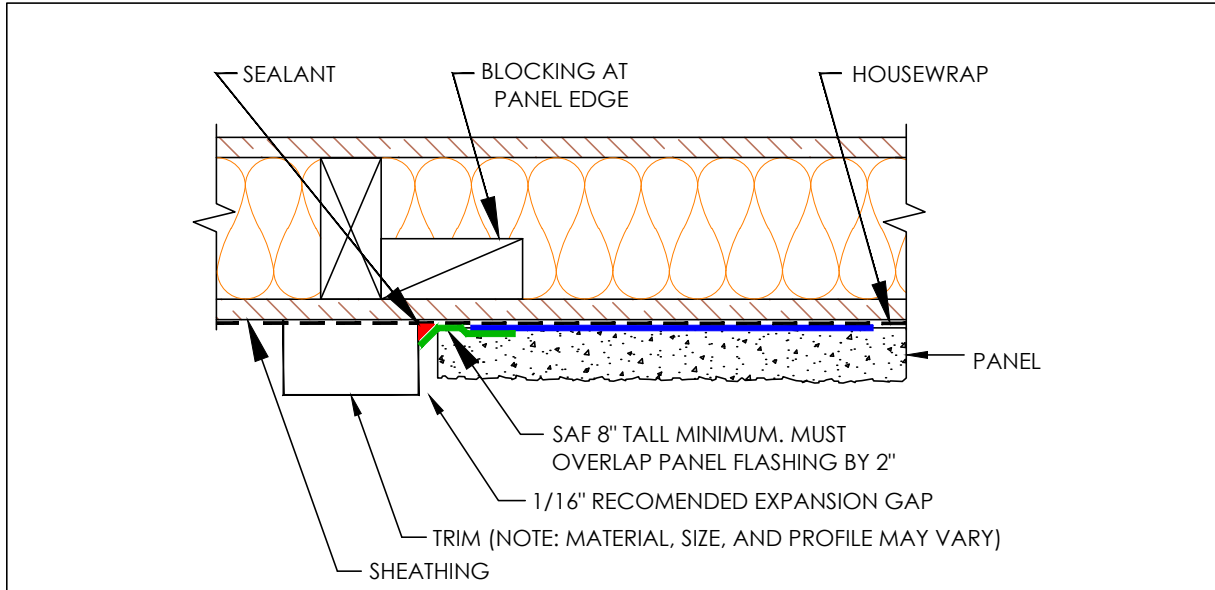


**SHEATHING AND WOOD STUDS INSIDE CORNER EXPLODED VIEW**

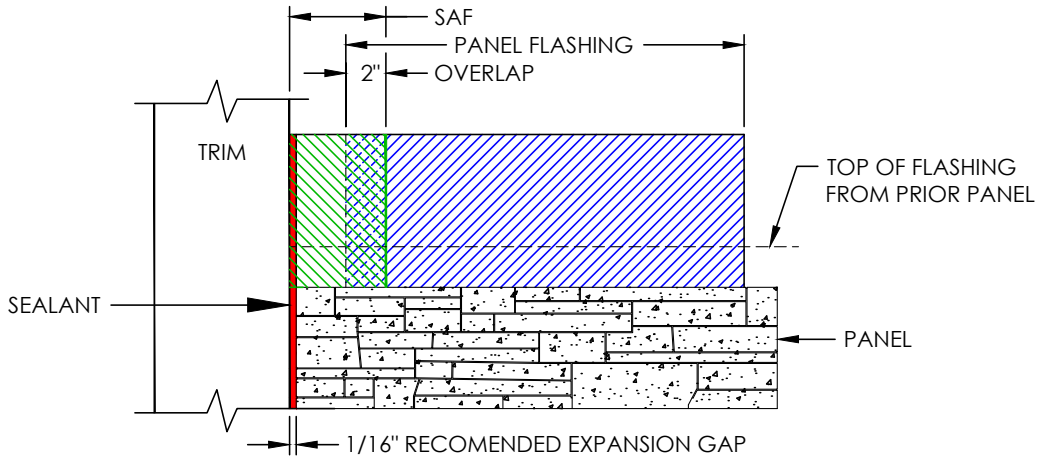
 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:			NAME	DATE	SILVERMINE STONE COMPANY  TITLE:  <h2 style="text-align: center;">Inside Corner w/ Step Flashing</h2>				
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"			S.G.	11/12/20					
	MATERIAL CONCRETE / ALUMINUM FINISH			DRAWN		CHECKED				
				COMMENTS:		ENG APPR.				
DRAWING NOT TO SCALE			MFG APPR.		Q.A.		SIZE	DWG. NO.	REV	
			A		Fig. B-5		SCALE:		WEIGHT:	SHEET 1 OF 1

# APPENDIX B - INSTALLATION DRAWINGS


## Fig. B-6 Vertical Transition w/ Step Flashing



### PANEL WITH FACTORY EDGE PLAN VIEW

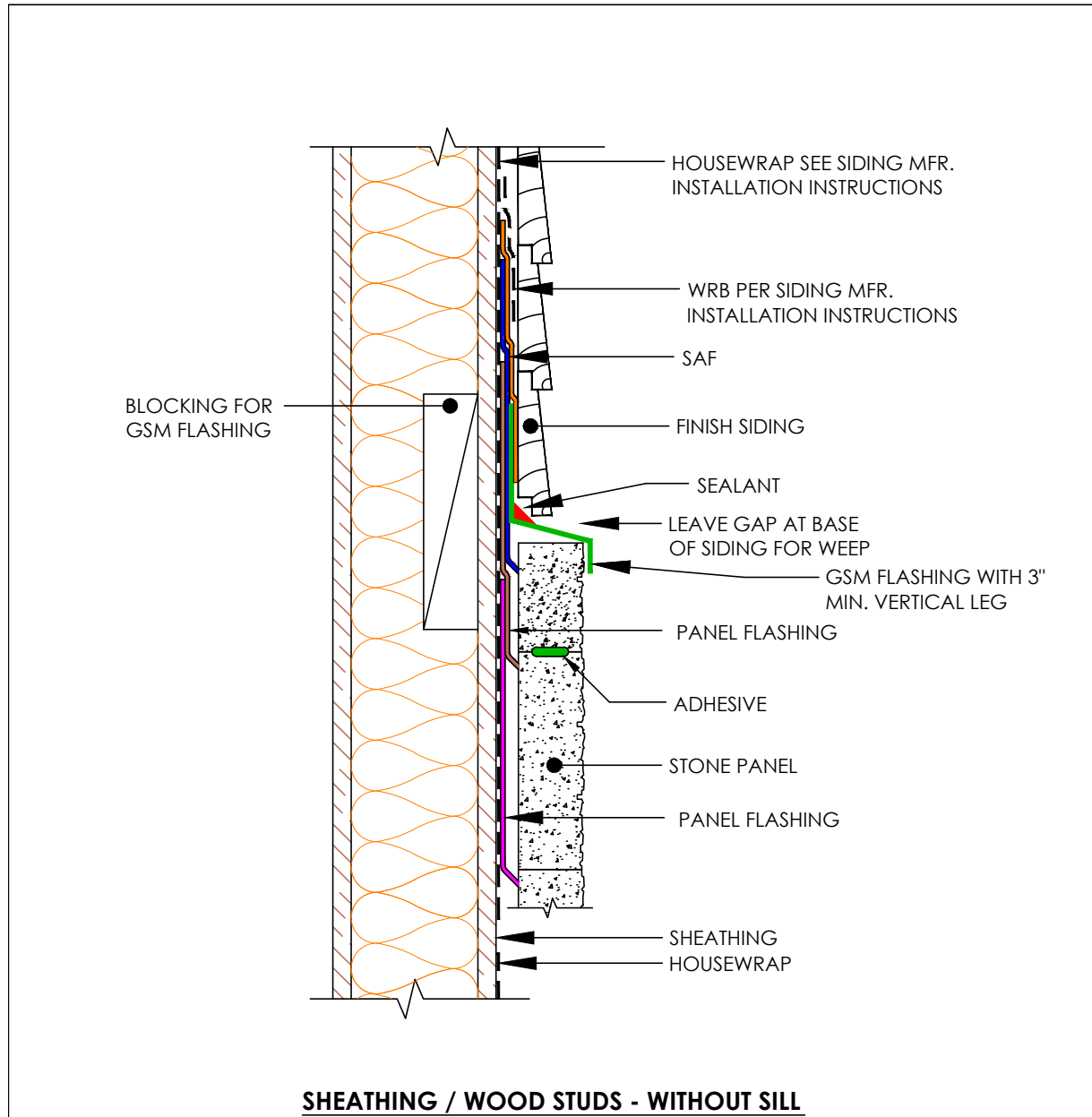



### PANEL WITH FACTORY EDGE ELEVATION VIEW

 <b>SILVERMINE</b> <sup>®</sup>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	SILVERMINE STONE COMPANY				
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16"	DRAWN	S.G.	11/12/20	TITLE:  <h2 style="margin: 0;">Vertical Transition w/ Step Flashing</h2>				
	MATERIAL CONCRETE / ALUMINUM FINISH	CHECKED					SIZE	DWG. NO.	REV
	DRAWING NOT TO SCALE	ENG APPR.					<b>A</b>	Fig. B-6	
		MFG APPR.					SCALE:	WEIGHT:	SHEET 1 OF 1
	Q.A.								
	COMMENTS:								

# APPENDIX B - INSTALLATION DRAWINGS

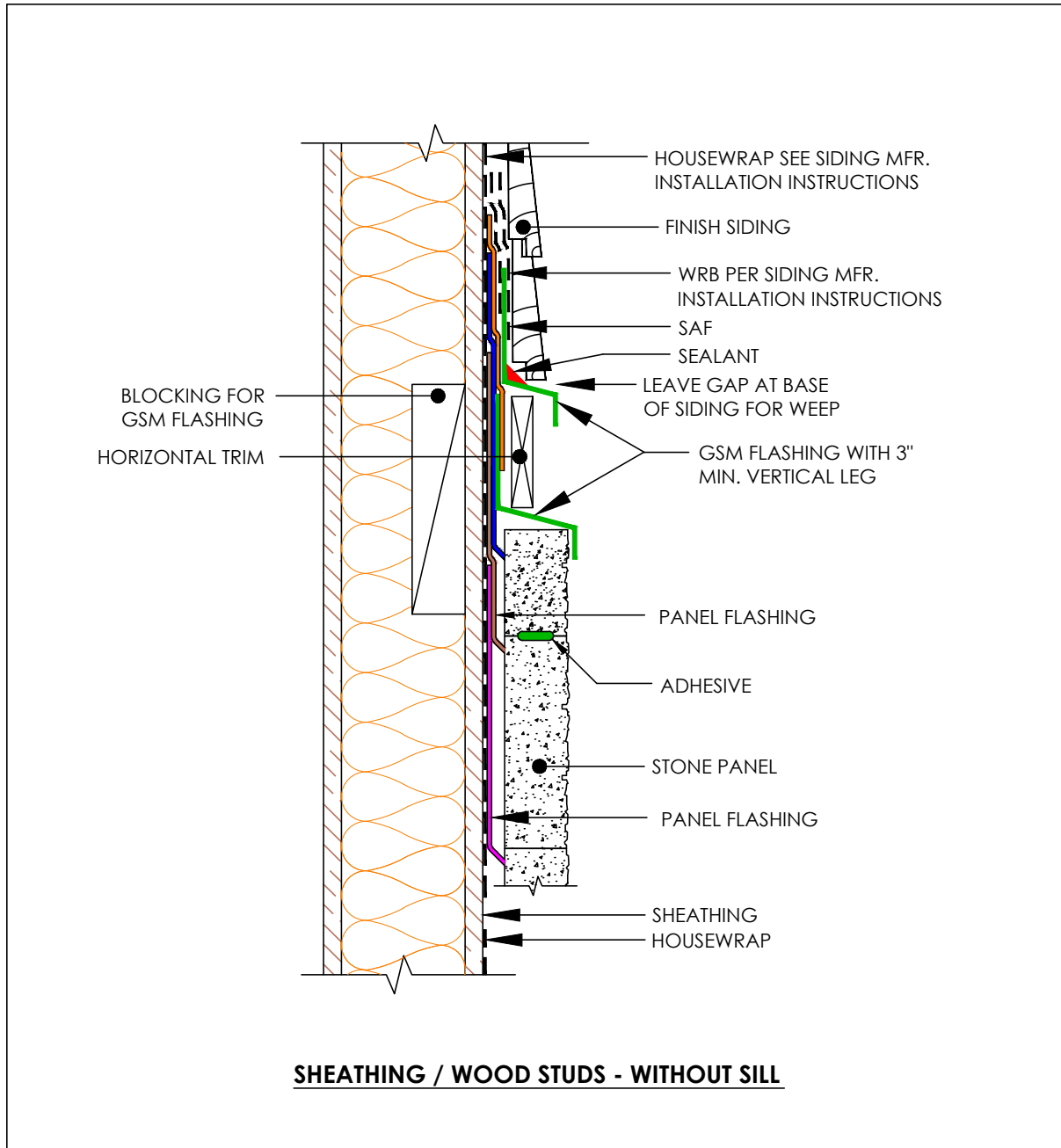
## Fig. B-7 Panels Below Siding




 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	SILVERMINE STONE COMPANY		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"	DRAWN	S.G.	11/12/20	TITLE:  <h2 style="margin: 0;">Panels Below Siding</h2>		
		CHECKED					
		ENG APPR.					
		MFG APPR.					
	Q.A.						
	COMMENTS:				SIZE	DWG. NO.	REV
MATERIAL CONCRETE / ALUMINUM FINISH					<b>A</b>	Fig. B-7	
DRAWING NOT TO SCALE					SCALE:	WEIGHT:	SHEET 1 OF 1

## APPENDIX B - INSTALLATION DRAWINGS

**Fig. B-8 Panels Below Trim**

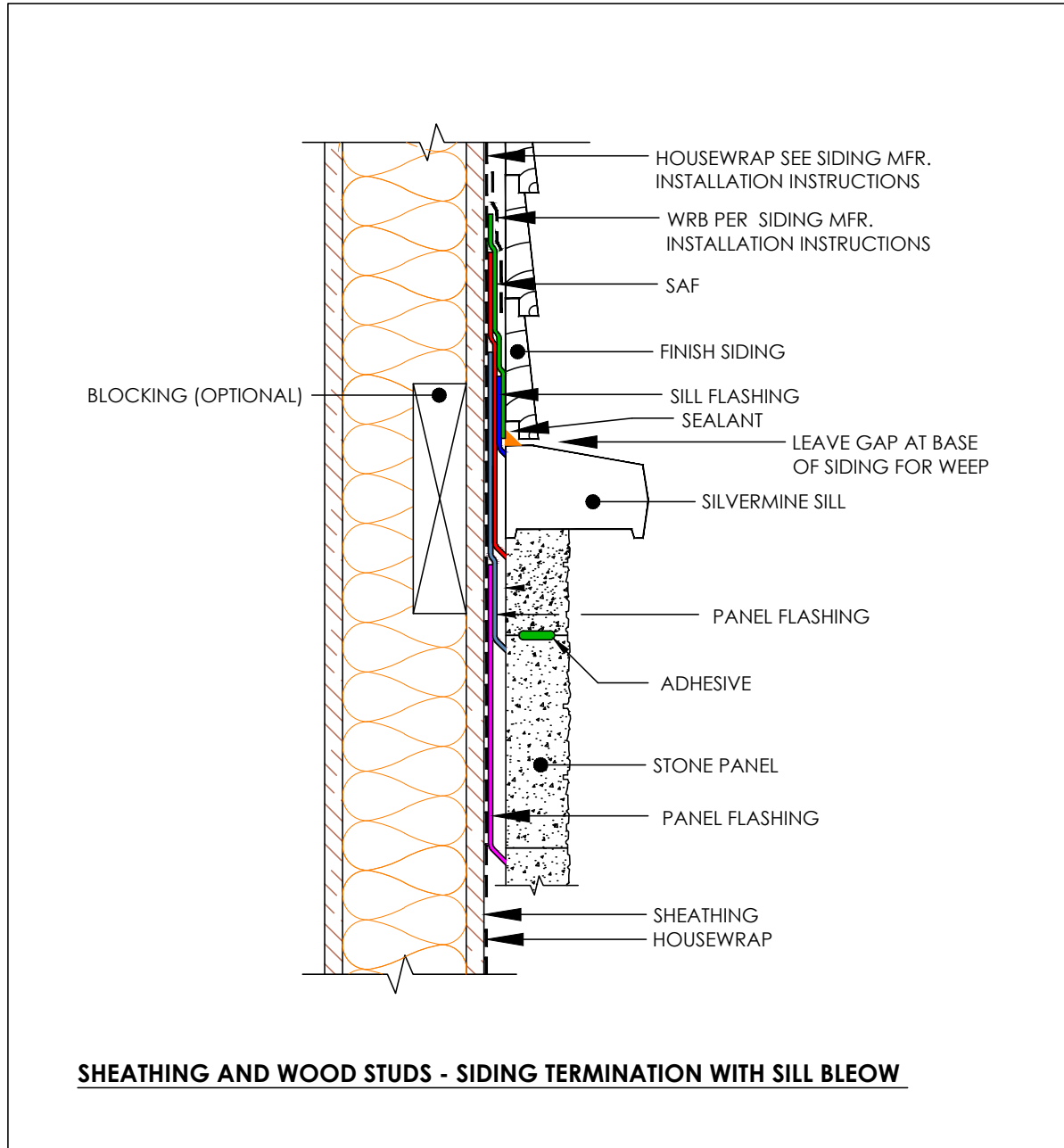



**SHEATHING / WOOD STUDS - WITHOUT SILL**

 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	SILVERMINE STONE COMPANY			
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"		DRAWN	S.G.	11/12/20	TITLE:  <h3 style="margin: 0;">Panels Below Trim</h3>		
			CHECKED					
			ENG APPR.					
			MFG APPR.					
MATERIAL CONCRETE / ALUMINUM FINISH		Q.A.		COMMENTS:		SIZE	DWG. NO.	REV
DRAWING NOT TO SCALE						<b>A</b>	Fig. B-8	
						SCALE:	WEIGHT:	SHEET 1 OF 1

## APPENDIX B - INSTALLATION DRAWINGS

### Fig. B-9 Sills Below Siding

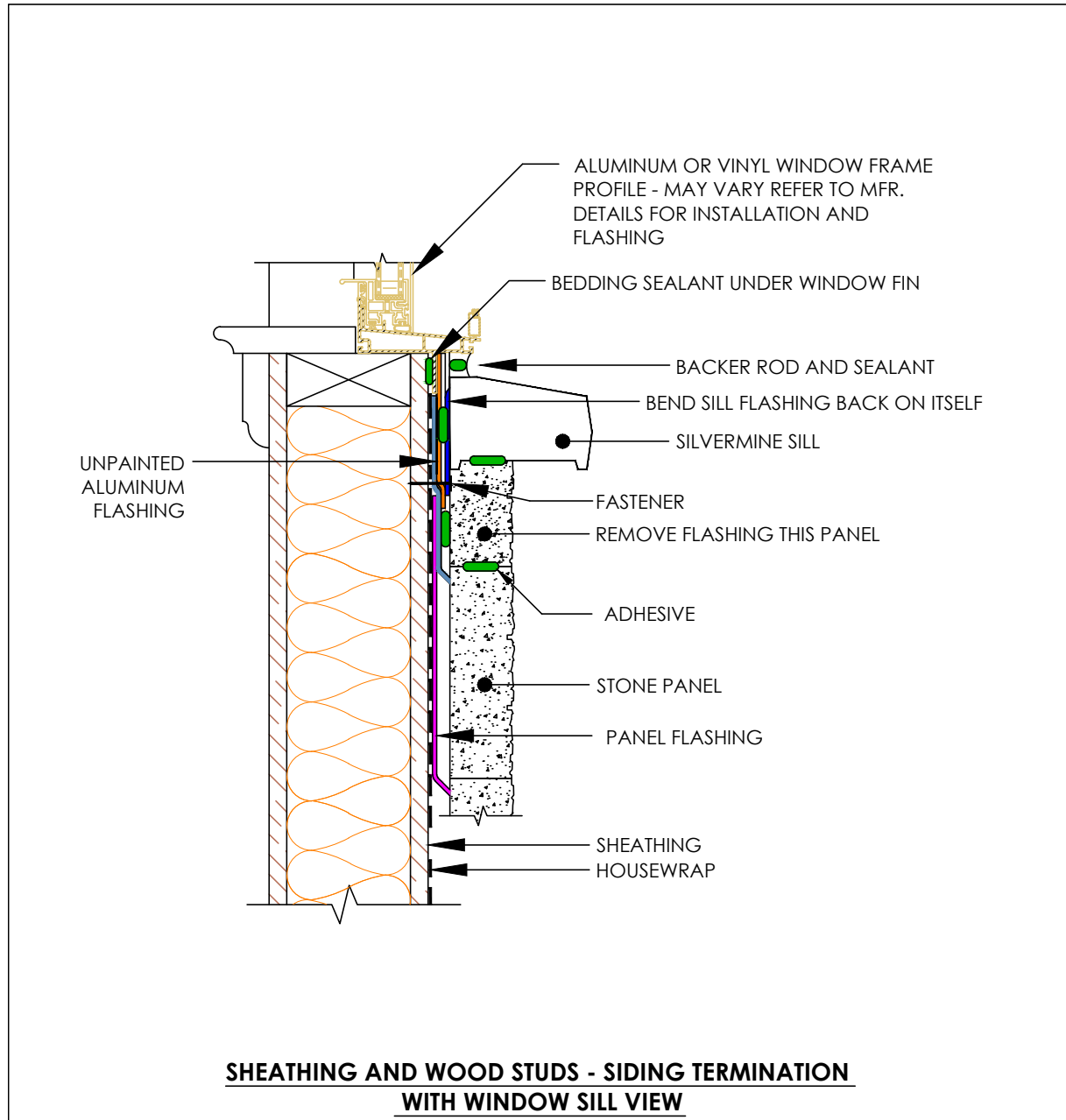


 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	SILVERMINE STONE COMPANY		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"		DRAWN	S.G.	11/12/20	TITLE:  <b>Sills Below Siding</b>	
			CHECKED				
			ENG APPR.				
			MFG APPR.				
Q.A.					SIZE	DWG. NO.	REV
COMMENTS:				<b>A</b>		Fig. B-9	
MATERIAL CONCRETE / ALUMINUM				SCALE:		WEIGHT:	SHEET 1 OF 1
FINISH							
DRAWING NOT TO SCALE							




## APPENDIX B - INSTALLATION DRAWINGS

**Fig. B-11 Sills Below Window w/out Removable Trim**



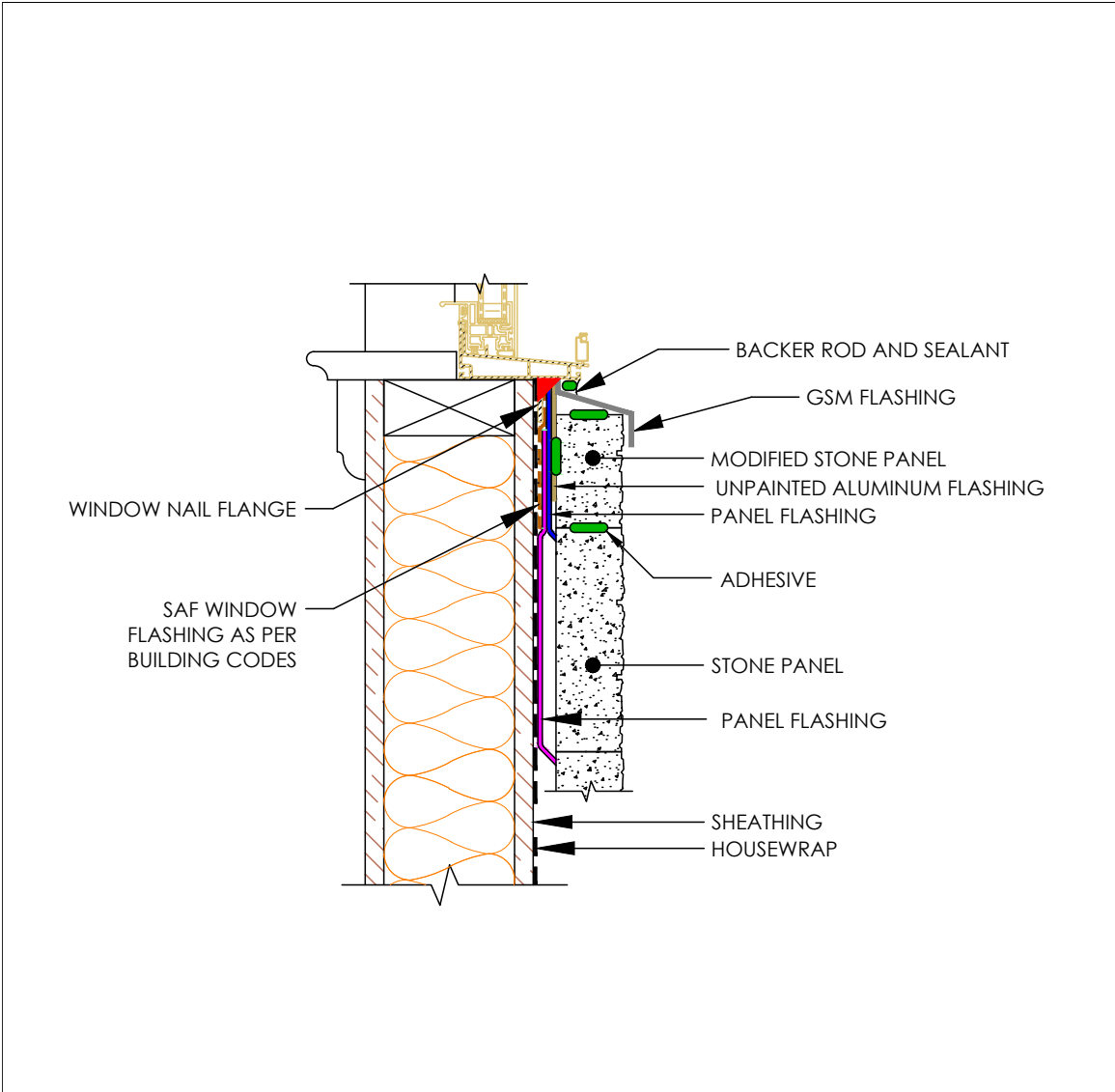
**SHEATHING AND WOOD STUDS - SIDING TERMINATION**  
**WITH WINDOW SILL VIEW**

 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:	DRAWN	NAME	DATE	SILVERMINE STONE COMPANY  <b>TITLE:</b> Sills Below Window w/out w/out Removable Trim
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"	CHECKED	S.G.	11/12/20	
	MATERIAL CONCRETE / ALUMINUM FINISH	ENG APPR.			
	DRAWING NOT TO SCALE	MFG APPR.			
		Q.A.			
	COMMENTS:				SIZE DWG. NO. REV <b>A</b> Fig. B-11
		SCALE:	WEIGHT:	SHEET 1 OF 1	




## APPENDIX B - INSTALLATION DRAWINGS

**Fig. B-11b Sills Below Window w/out Removable Trim**

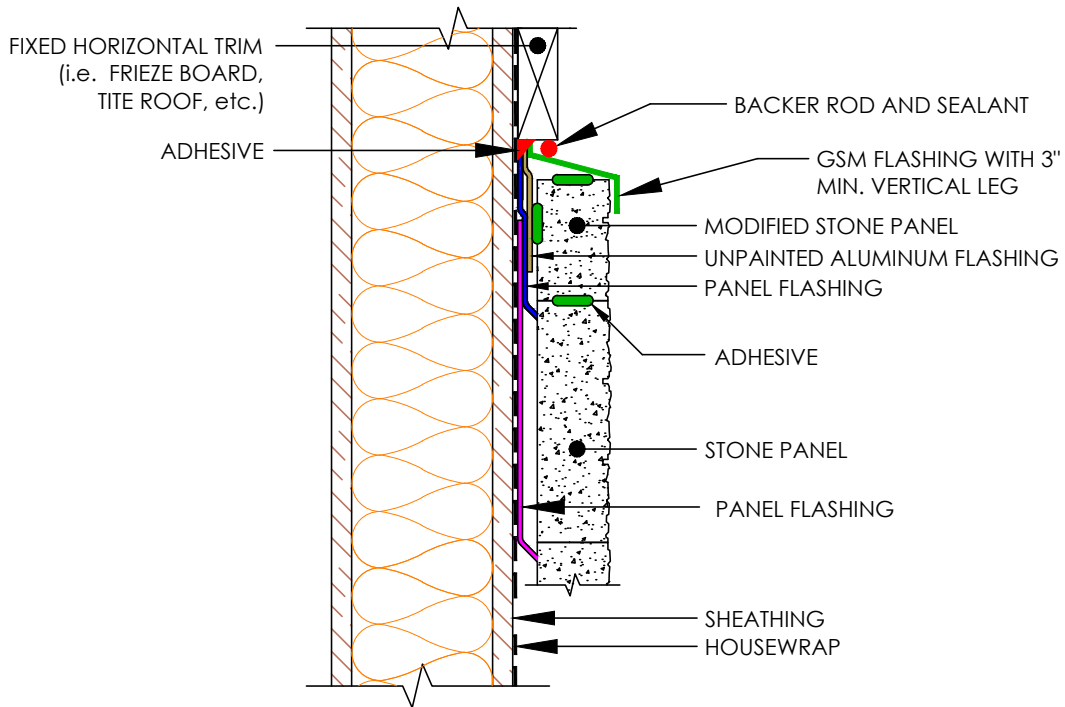


**SHEATHING AND WOOD STUDS - SIDING TERMINATION  
WITH BELTERRA WINDOW SILL VIEW**

 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	SILVERMINE STONE COMPANY		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"	DRAWN	S.G.	11/12/20	TITLE:  <b>Panels Under Fixed Trim</b>		
		CHECKED					
		ENG APPR.					
		MFG APPR.					
Q.A.				SIZE	DWG. NO.	REV	
MATERIAL CONCRETE / ALUMINUM FINISH	BELTERRA			A	Fig. B-11b		
DRAWING NOT TO SCALE	SCALE:		WEIGHT:	SHEET 1 OF 1			

## APPENDIX B - INSTALLATION DRAWINGS

### Fig. B-12 Panels Under Fixed Trim



### SHEATHING AND WOOD STUDS - SIDING TERMINATION WITH BELTERRA WINDOW SILL VIEW

**SILVERMINE**<sup>®</sup>

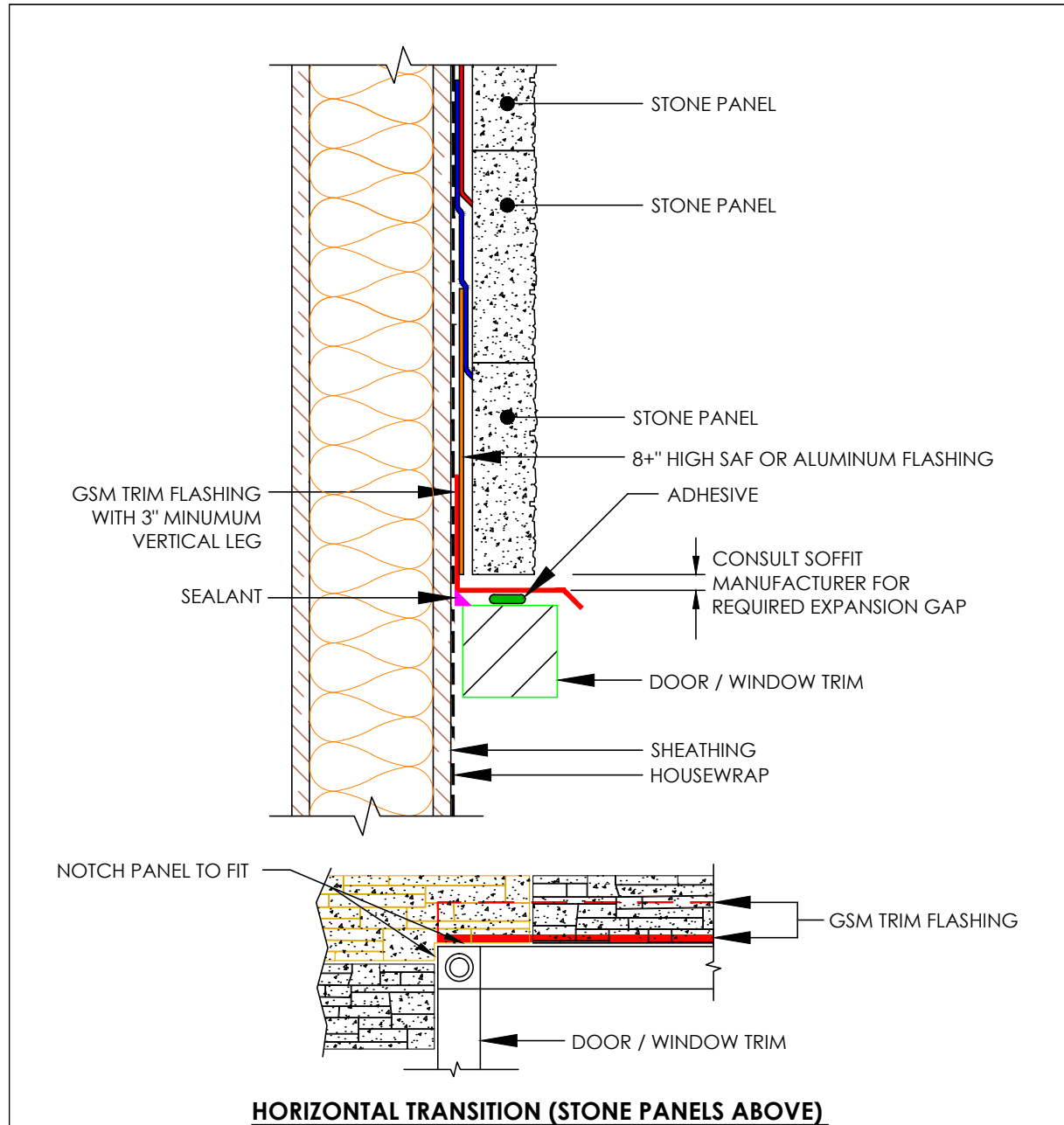
SILVERMINE STONE COMPANY  
2728 Davey St.  
Eau Claire WI 54703  
715-835-7595  
WWW.SILVERMINESTONE.COM


UNLESS OTHERWISE SPECIFIED:	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"	DRAWN S.G.	11/12/20
	CHECKED	
	ENG APPR.	
	MFG APPR.	
	Q.A.	
MATERIAL CONCRETE / ALUMINUM FINISH	COMMENTS: <b>BELTERRA</b>	
DRAWING NOT TO SCALE		

SILVERMINE STONE COMPANY		
TITLE: Panels Under Fixed Trim		
SIZE <b>A</b>	DWG. NO. Fig. B-12	REV
SCALE:	WEIGHT:	SHEET 1 OF 1

## APPENDIX B - INSTALLATION DRAWINGS

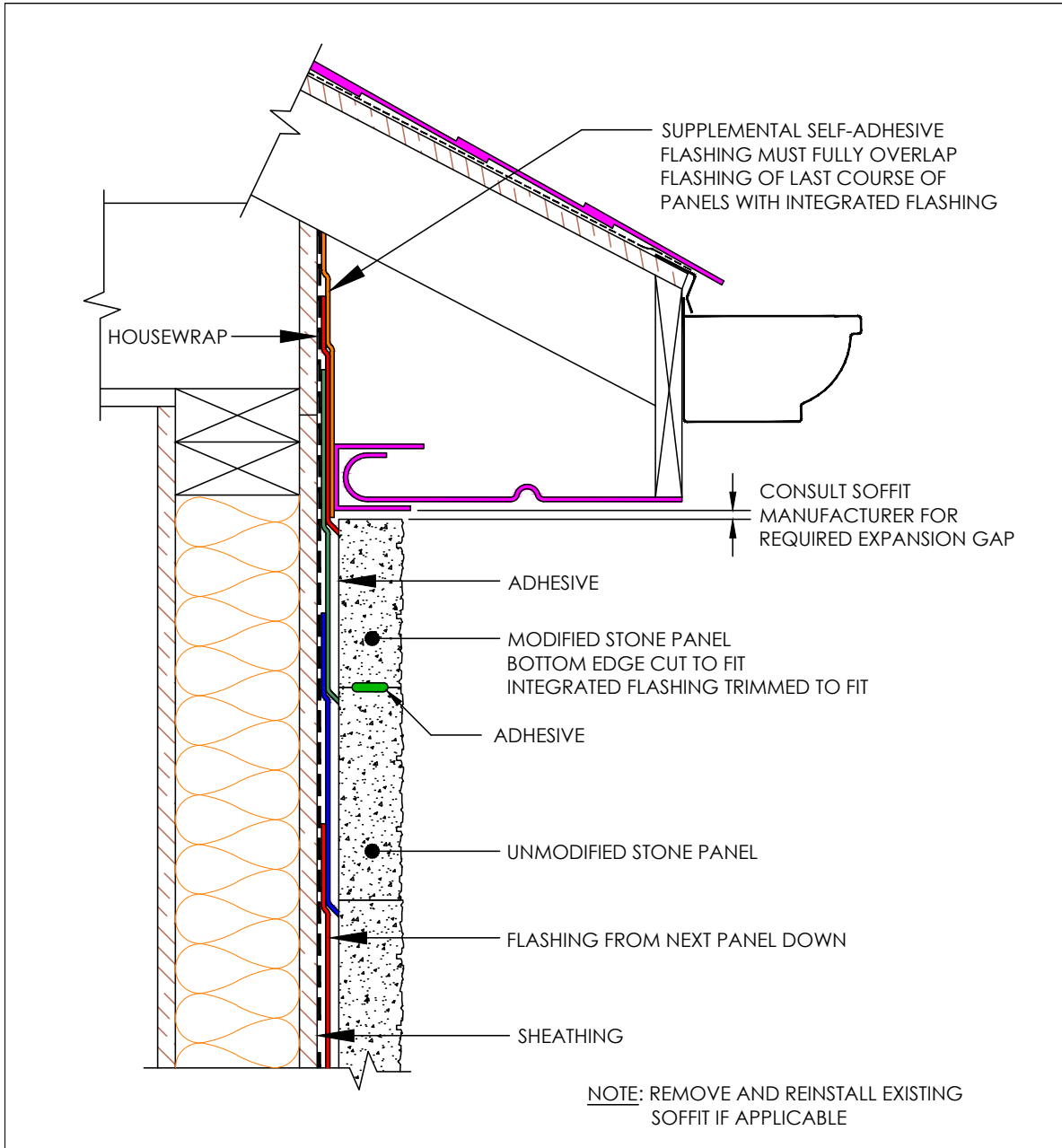
### Fig. B-13 Initial Course Above Trimmed Openings



 <b>SILVERMINE®</b>  SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	SILVERMINE STONE COMPANY			
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"		DRAWN	S.G.	11/12/20	TITLE:		
	MATERIAL CONCRETE / ALUMINUM FINISH		CHECKED			Initial Course Above Trimmed Openings		
			ENG APPR.			SIZE	DWG. NO.	REV
			MFG APPR.			<b>A</b>	Fig. B-13	
DRAWING NOT TO SCALE		Q.A.			SCALE:      WEIGHT:      SHEET 1 OF 1			
		COMMENTS:						

# APPENDIX B - INSTALATION DRAWINGS

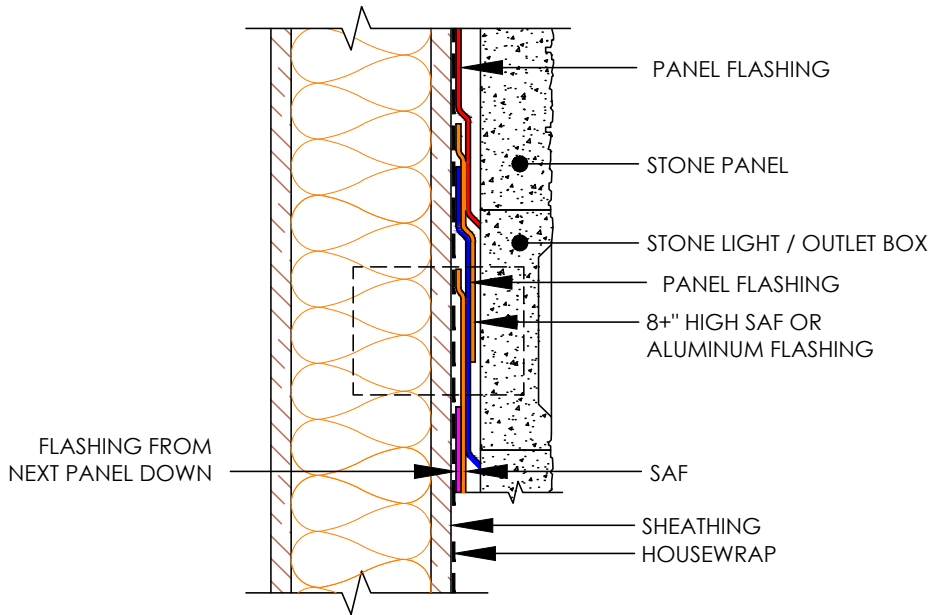
## Fig. B-14 Panels Below Soffit




<p><b>SILVERMINE</b><sup>®</sup></p> <p>SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM</p>	UNLESS OTHERWISE SPECIFIED:	NAME	DATE	SILVERMINE STONE COMPANY		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16"	DRAWN	S.G.	11/12/20	TITLE:  <h2 style="margin: 0;">Panels Below Soffit</h2>	
	MATERIAL	CHECKED				
	CONCRETE / ALUMINUM	ENG APPR.				
	FINISH	MFG APPR.				
DRAWING NOT TO SCALE	Q.A.			SIZE	DWG. NO.	REV
	COMMENTS:			<b>A</b>	Fig. B-14	
				SCALE:	WEIGHT:	SHEET 1 OF 1

**APPENDIX B - INSTALATION DRAWINGS**

**Fig. B-15 Electrical & Light Box Installation**

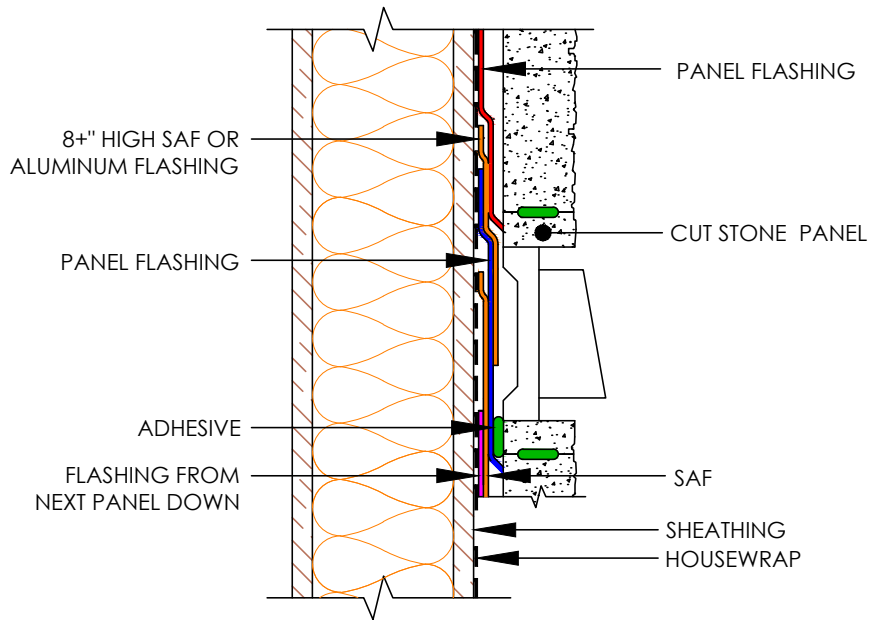


**ELECTRICAL / LIGHT BOX ACCESSORY VIEW**

 <p><b>SILVERMINE</b><sup>®</sup></p> <p>SILVERMINE STONE COMPANY 2728 Davey St. Eau Claire WI 54703 715-835-7595 WWW.SILVERMINESTONE.COM</p>	UNLESS OTHERWISE SPECIFIED:		NAME	DATE	SILVERMINE STONE COMPANY		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"	DRAWN	S.G.	11/12/20	TITLE: Electrical & Light Box Installation		
		CHECKED					
		ENG APPR.					
		MFG APPR.					
		Q.A.			SIZE	DWG. NO.	REV
MATERIAL CONCRETE / ALUMINUM FINISH	COMMENTS:			<b>A</b>	Fig. B-15		
DRAWING NOT TO SCALE				SCALE:	WEIGHT:	SHEET 1 OF 1	

**APPENDIX B - INSTALATION DRAWINGS**

**Fig. B-16 Vent Installation**



**SHEATHING AND WOOD STUDS - FOUNDATION WALL BASE  
WITH STARTER STRIP VIEW**

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UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/8"	NAME	S.G.	DATE	11/12/20
	DRAWN			
	CHECKED			
	ENG APPR.			
	MFG APPR.			
MATERIAL CONCRETE / ALUMINUM FINISH	COMMENTS:			
DRAWING NOT TO SCALE				

SILVERMINE STONE COMPANY		
TITLE:  Vent Installation		
SIZE <b>A</b>	DWG. NO. Fig. B-16	REV
SCALE:	WEIGHT:	SHEET 1 OF 1