

CERACLAD Exterior Siding System Installation Manual (Caulk Joint)

Updated January 2024



CERACLAD

Triple-Coated Rainscreen Siding Systems

www.ceraclad.com

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1. CERACLAD Installation Standards

PART 1- DESIGN CRITERIA

1. Description

CERACLAD is a factory-finished fiber cement siding system which utilizes a proven rain screen technology. Suitable for new construction and retrofit projects, CERACLAD Rain Screen Exterior Siding System consists of pre-finished siding panels in a variety of patterns and textures, innovative panel clips and accessories, all of which have been designed for ease of installation and are supported by a 30-year limited product warranty. The system creates an air cavity for air passage which helps prevent condensation and mold in the wall cavities by releasing moisture that permeates through the building envelope to the outside. CERACLAD Rain Screen Exterior Siding System offers a solution for moisture incursion as well as factory applied coatings that will not only be pleasing to the eye but also allow for low maintenance requirements. CERACLAD is designed and manufactured exclusively for exterior walls and soffits.

2. Codes

A. KMEW CERACLAD™ fiber cement panels meet or exceed requirements of:

ICC Evaluation Service, Inc. (ICC-ES) Report No. ESR-1627

3. Physical Data

A. Finishes:

CERACLAD coated panels are factory finished with Photocatalytic coating applied over a U-V resistant ceramic coating.

CERACLAD coated panels are factory finished with UV-resistant ceramic coating applied over an acrylic paint.

CERACLAD CREATIV™ coated panels are factory finished with a UV inhibiting clear coating applied over acrylic paint.

B. Textures:

CERACLAD panels come in a wide variety of textures. For a complete list consult our website www.ceraclad.com

C. Panel Dimensions:

Hollow Core				Solid Core			
Thickness	Length	Height	Weight	Thickness	Length	Height	Weight
18mm (nom. 5/8")	3030mm (nom. 10')	455mm (nom. 18")	25kg (55 lbs.)	16mm (nom. 5/8")	3030mm (nom. 10')	455m (nom. 18")	27kg (60 lbs.)
Actual 0.71"	Actual 119.29"	Actual 17.91"	Texture Dependent	Actual 0.63"	Actual 119.29"	Actual 17.91"	Texture Dependent

D: Composition:

CERACLAD is a fiber cement panel which is manufactured with 44.5% recycled material. This recycled content includes 8% wood pulp, 55% Fly Ash, 31% pre- and post-consumer scrap material, and 6% other recycled materials.

E: CERACLAD Rain Screen Siding System has been tested in accordance with following specifications:

ASTM C1186	Standard Specification for Flat Non-Asbestos Fiber Cement Sheets
ASTM C1185	Sampling and Testing Non-Asbestos Fiber Cement Flat Sheets, Roofing and Siding Shingles, and Clapboards
ASTM E330	Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E84	Standard Test Method for Surface Burning Characteristics of Materials
ASTM E119	Fire Tests of Building Construction and Materials
CAN/ULC S114	Standard Method of Test for Determination of Non-combustibility in Building Materials

F. Fire Resistance Characteristics:

CERACLAD panels have a Class 1 (A) Flame Spread Classification -0, Smoke Developed Classification -0 when tested in accordance with ASTM E84 as specified in the ICC ESR-1627.

CERACLAD Hollow Core and Solid Core Panels are Non-combustible when tested in accordance with CAN ULC S-114 Per testing carried out by labs Exova and Element.

G. Assembly Wind Resistance:

Please note that it remains the project engineer's responsibility to ensure CERACLAD is appropriate for a given structure.

Project-specific calculations should be made based on the applicable wind exposure, wall assembly, clip spacing and desired safety factor.

Consult ICC-ES Evaluation Report ESR 1627 for building code compliance and transverse load design values.

1.1.4 Green Statistics

CERACLAD Rain Screen Exterior Siding System has many ecologically friendly attributes that increase the sustainability of your project. CERACLAD helpful attributes can contribute to the overall performance of your building. Please see the following basic facts about the sustainable nature of CERACLAD.

- A. Recycled Content – CERACLAD panels are manufactured with 44.5% recycled material, with 30.3% Pre- Consumer and 14.2% Post-Consumer recycled materials.
- B. Disposal– CERACLAD panels are 100% clean for land fill.
- C. No VOC – Panels are factory painted in a controlled environment that reduces the overall need for paint, and properly handles the VOC in the factory. Panels delivered on site have no VOC.
- D. Reduced Maintenance – CERACLAD ceramic coating significantly reduces the energy, water, and cost of maintenance with superior ability to prevent dirt from adhering to the surface. The Ceramic coating also protects the paint from UV radiation and drastically reduces the number of paint cycles during the building's life. Ceramic panels have a 20-year limited warranty against color fade.
- E. Durability – Fiber cement CERACLAD panels are resistant to rot, insects, heat, cold and flame spread. Panels have a 30-year limited warranty and an expected life of 100 years when properly maintained.
- F. Building Health – CERACLAD system creates an air cavity for air passage which helps prevent condensation and mold in the wall cavities by releasing moisture that permeates through the building envelope to the outside. CERACLAD Rain Screen Exterior Siding System offers a solution for moisture incursion as well as factory applied coatings that will not only be pleasing to the eye but also allow for low maintenance requirements.

PART 2 – INSTALLATION

1. General Requirements

- A. General: Install products in accordance with the latest installation guidelines of the manufacturer and all applicable building codes and other laws, rules, regulations and ordinances.
- B. Review all manufacturer installation and maintenance instructions and other applicable documents.
- C. CERACLAD is designed and manufactured exclusively for exterior walls and soffits. Do not use CERACLAD for any purpose other than application to outer walls and soffits.
- D. Do not install CERACLAD on walls with a radius.
- E. Staggering vertical sealant joints is not acceptable; sealant joints must run continuous with no running bond configuration.
- F. Panels installed horizontally may not be stacked continuously without a break on walls greater than 20' in height.
- G. Panels installed vertically cannot be stacked, each course must use a through wall flashing and starter bar.
- H. Seal panel field cut edges (except cut edges at caulk joints) with the KMEW specified cut edge sealer. See Pg. 21 for more details.
- I. Combinations of Structures, Sheathing Material, and Installation Methods:

Structure	Sheathing material	Installation method
Wood	◆ Plywood/OSB (min. 1/2")	Horizontal installation
		Vertical installation
Steel	◆ Glass Mat Gypsum (5/8" or 16mm)	Horizontal installation
		Vertical installation
Continuous Insulation w/ Hat Channel furring	◆ Glass Mat Gypsum (5/8" or 16mm)	Horizontal installation
		Vertical installation

Caution:

- Carry out necessary reinforcement work when required due to the regional conditions, windspeed, building height, or other factors.
~ KMEW assumes no responsibility for any problems resulting from failure to carry out the necessary reinforcement work. ~
- CERACLAD cannot be directly installed onto a concrete substrate.

1.2.2 Wall Requirements

- A. Proper substrate shall be provided to the installer. The wall shall be sufficient to withstand normal construction and live loads.
- B. Defects in the wall must be reported and documented to the specifier, general contractor and owner for assessment. The installer shall not proceed unless defects are corrected.
- C. Substrate flatness/plane shall be within 1/16" every 32".
- D. CERACLAD panels cannot be installed directly to stucco, brick, CMU, tile or similar substrates. Wood battens or metal Z-girts can be used to provide a suitable substrate for attachment.
- E. CERACLAD is designed and manufactured exclusively for exterior walls and soffits. Do not use CERACLAD for any purpose other than application to outer walls and soffits. Staggering vertical sealant joints is not acceptable; sealant joints must run continuously with no running bond configuration.
- F. Do not install CERACLAD where the backside could be exposed to rain.
- G. The CERACLAD ventilation structure requires "inlets", which take in outdoor air, "air cavities", through which the air circulates, and "outlets", which release the air outside.
- H. Install windows so that the frame projects out to allow a caulking joint between the window frame and CERACLAD panel.
- I. The window should project at least 1 1/4" (30mm) from the substrate,

1.2.3 Attachment Requirements

- A. Plywood/OSB sheathing must be nom. 1/2" thick or greater.
- B. Clips attached directly to wood stud framing or to steel stud framing through plywood require only one screw per clip.
- C. Clips attached directly to only steel stud framing or sub-framing require two screws per clip.
- D. Clips attached only to plywood sheathing require two screws per clip.

- E. Pre-drill panels before using any nails or screws. Use a drill bit that is 1mm smaller than the fastener.
- F. Consult applicable technical data sheet for correct fastener type and placement to withstand specified design wind loads.
- G. Clips should be within 3" of any panel end for horizontal installations. For vertical installations, install bottom clips as close as possible to the starter bar, no more than 3" above the starter bar.
- H. Do not directly fasten any item to the panels. Provide blocking behind panel cavity and fasten objects through the panels and into the blocking and building framing. Panels are not structural sheathing.
- I. Panels must be installed a minimum of 6" above finished grade.
- J. Panels must be installed a minimum of 2" above concrete and decks.

1. Acceptable Sealants:

Ceraclad does not supply, warranty, or approve the sealant used with metal joiner bars at panel joints and abutments.

The sealant selected shall comply with the following performance specification:

- Single component, low-modulus silicone
- ASTM Specification C 920, Type S, Grade NS, class50, or class100/50, Use NT, M, G, A and O

For the application of sealant in the panel joint :

- Apply low adhesive painter's tape to both sides of the joint prior to application/tooling for a clean caulk line.
- Remove tape before sealant cures.
- If excess sealant adheres to the panel, remove completely with a putty knife or cloth before the sealant cures.

Install the sealant in accordance with the manufacture's instructions.

It is recommended to perform a field pull test according to the sealant manufacturer's instructions to ensure a proper adhesive bond.

2. Acceptable Outside Corner Alternatives to CERACLAD Pre-Formed Corners

Acceptable Alternatives for outside corners are listed below. CERACLAD does not allow mitering of the panels to construct a mitered outside corner. When using material listed below in lieu of CERACLAD preformed corners a couple basic rules apply.

1. No open joints, all joints must be closed with sealant or covered with materials listed below.
2. When using an alternative material to cover the panel ends; the panel coverage must exceed $\frac{3}{8}$ ".
 - A. Brake metal outside corner
 - B. Metal reveal type trims
 - C. Wood/Fiber cement trim

3. Window Jambs and Sills

The standard method of installation at the window jambs and sills is to seal the window to the panel end with an approved sealant. If windows do not project at least 1-1/4" from the substrate, finish the window sill with a flashing instead of a sealant joint.

The window head shall always be finished with a head flashing.

When using material listed below in lieu of a sealant joint follow the following basic rules:

1. No open joints, all joints must be closed with sealant or covered with materials listed below.
2. When using an alternative material to cover the panel ends; the panel coverage must exceed $\frac{3}{8}$ ".
 - A. Metal
 - B. Wood/Fiber Cement Trim

1.2.4. Handling and Carrying:

- A. Carry panels by holding them on edge.
- B. Protect panels and accessories from weather.
- C. Place pallets on a flat even hard surface
- D. Do not place panels directly on the ground.
- E. Do not stack more than two pallets.
- F. Do not stack a pallet with more panels on top of pallet with less panels.

1.2.5 Cutting Panels:

- A. Cut panels from the backside.
- B. Cut panel width must be greater than 2 1/2".
- C. Clean cut panels by blowing dust away with compressed air or with a clean dry cloth.
- D. Siding panels contain silica. When drilling, cutting, or abrading siding panels during installation or handling, observe the following precautions: a) work outdoors when feasible or in a well ventilated area when indoors, b) wear a dust mask or use a respirator, c) warn other workers and building occupants in the area, and/or, d) advise building occupants to close windows in the immediate area of work.
- E. Use a panel saw or circular saw with a vacuum attachment to cut CERACLAD panels. **Use of a wet saw to cut product is not permitted.**

2. General Precautions

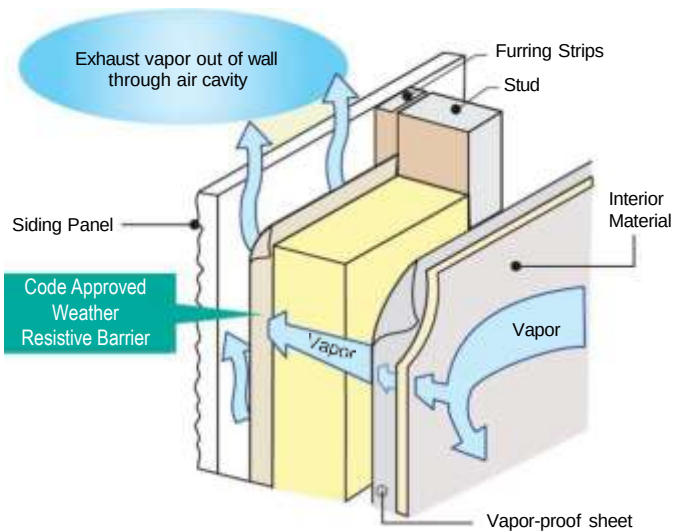
2. General Precautions

2.1. Design Precautions

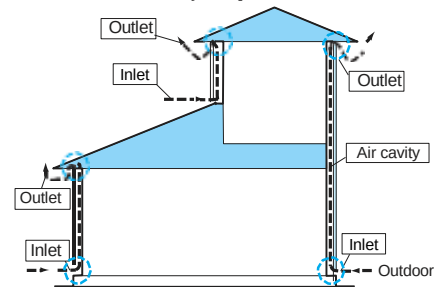
(1) Guidelines For Designing a Rain Screen System

- The CERACLAD ventilation structure requires "inlets", which take in outdoor air, "air cavities", which the air circulates, and "outlets", which release the air outside.

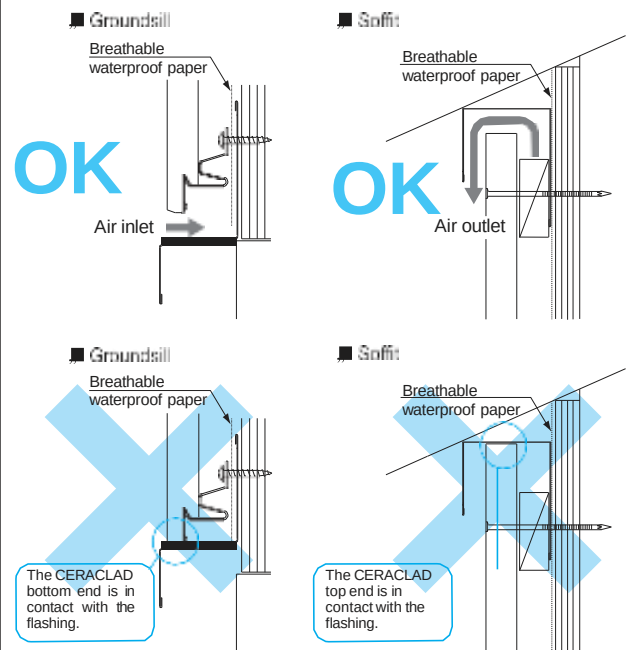
- Avoid blocking inlets, air cavities, and outlets when installing CERACLAD.
- A code approved weather resistive barrier must be used behind the CERACLAD rain screen system.



[Key points of the rain screen system]



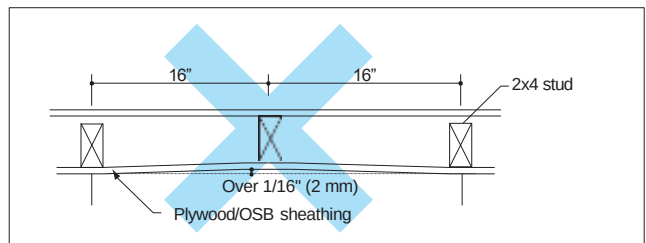
[Details of the rain screen system]



(2) Substrate Flatness

- The maximum acceptable unevenness of the structural members, including pillars and beams, and the sheathing boards is 1/16" (2 mm) every 32".

- Do not install CERACLAD on sheathing with an unevenness of over 2 mm.
~ Otherwise, this may result in appearance defects, cracks, or breakage of the panels. ~



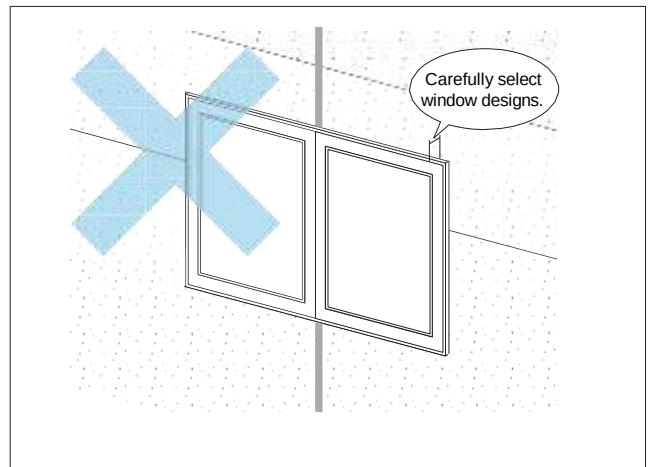
2. General Precautions

2.1. Design Precautions

(3) Window Installation

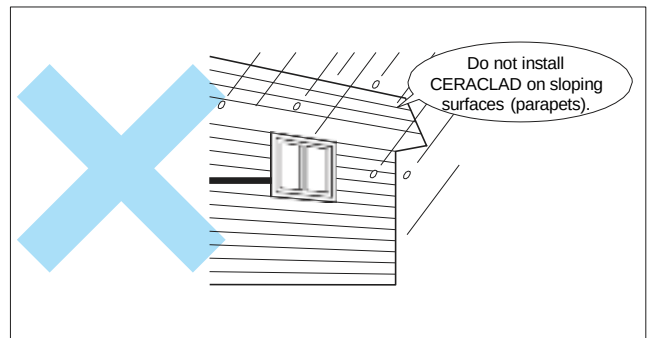
- Install windows so that the frame projects out to allow a caulking joint between the window frame and CERACLAD panel.
 - * The window should project at least 1-1/4" (30mm) from the substrate.

- **If using a sealant joint window detail, window frames must project at least 1-1/4" from the substrate.**
 - ~ If the window frame is recessed, extra flashing is required around the window~



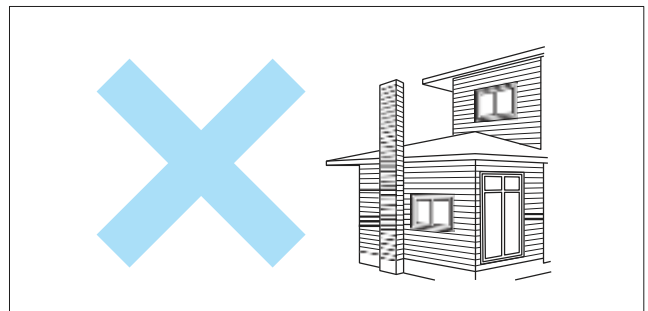
(4) Sloping Parapets

- **Do not install CERACLAD on sloping parapets.**
- **Do not install CERACLAD on horizontal surfaces.**
 - ~ CERACLAD is not a roofing material and should be installed only on straight exterior walls. ~



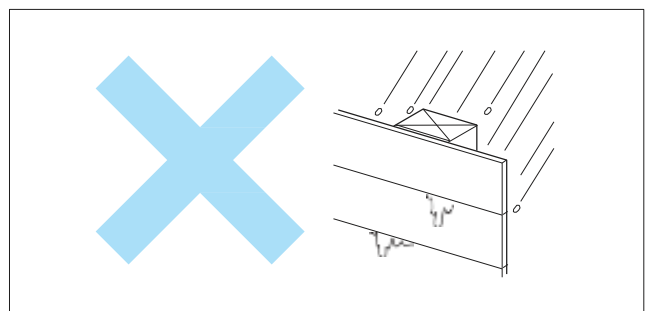
(5) Installation on Chimneys

- **Do not install CERACLAD on chimneys.**
 - ~ Otherwise, CERACLAD could be damaged by moisture and heat generated by the chimney. ~



(6) Installation on Fences

- **Do not install CERACLAD in locations exposed to rain from behind.**
 - ~ Otherwise, water can be absorbed and cause the panel to deform. ~



2. General Precautions

2.2. Installation Precautions

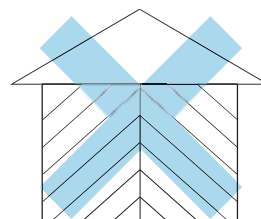
(1) CERACLAD Layout guidelines

- **Do not stagger CERACLAD sealant joints.**
~ Sealant joints must run in a continuous line, otherwise the joints may fail. ~
- **Do not diagonally install CERACLAD panels.**
~ Diagonal installation as shown in the figure may cause rain penetration because rain can flow along the shiplap joints. ~

Do not stagger sealant joints.

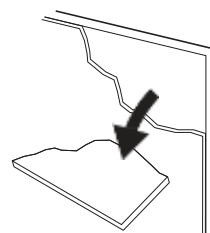


Do not install panels diagonally



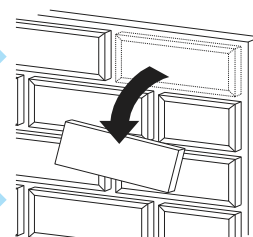
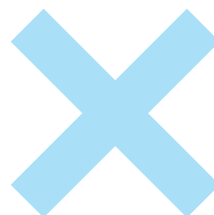
(2) Installation Directly Onto Stucco

- **Do not install CERACLAD directly onto stucco-finished walls.**
~ Furring is required to secure the panels when installing over stucco. ~



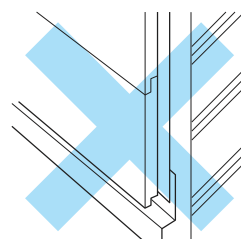
(3) Installation Directly on to Brick Walls

- **Do not install CERACLAD directly on brick walls.**
~ Otherwise, the brick tiles may be removed, causing CERACLAD to fall. ~



(4) Installation Directly onto Concrete

- **Do not fasten panels directly onto concrete walls. Furring is required.**
~ This could cause damage to the panels or cause the panels to fall. ~

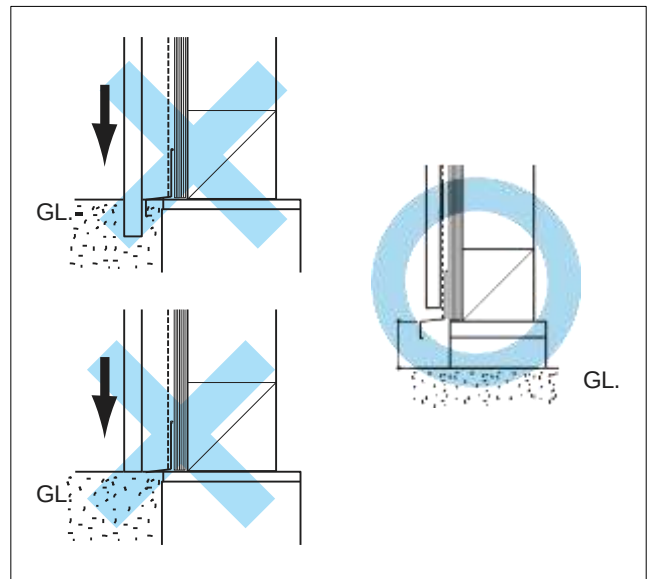


2. General Precautions

2.2. Installation Precautions

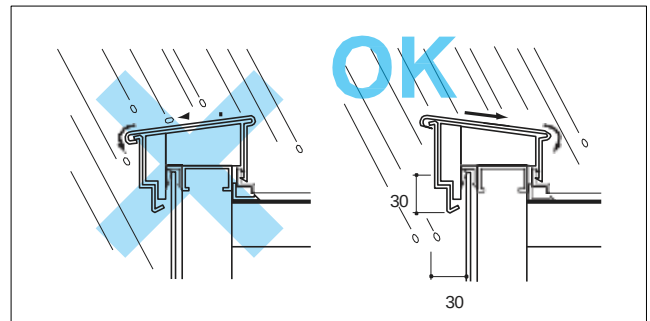
(5) Panels at Grade Level

- **Do not bury CERACLAD panel ends into the ground or allow them to come into contact with the ground surface.**
 - ~ Otherwise, panels in contact with the ground may absorb water and deteriorate. ~
- * Allow for a clearance of 6" (150 mm) or more between the plywood/OSB sheathing and the ground surface.



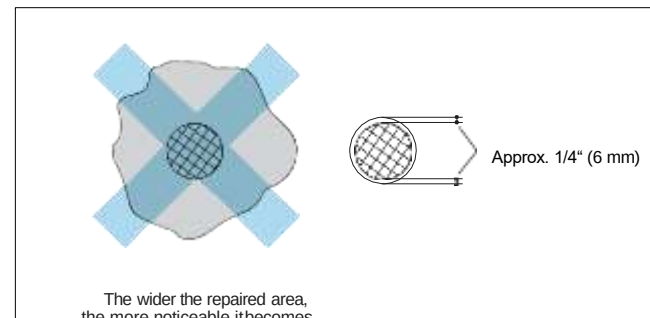
(6) Headboards/Copings

- **Do not use CERACLAD as parapet caps.**
- **Design the slope of copings so that rainwater will not run down the CERACLAD panel surfaces.**
 - ~ Copings or headboards should direct water away from the CERACLAD panels. ~



(7) Touch-Up Paint Application

- **Do not apply an excessive amount of Repair Paint to nail heads.**
 - ~ Otherwise, the repaired areas may become noticeable with age. ~



(8) Using Caulking for Touch-up repairing

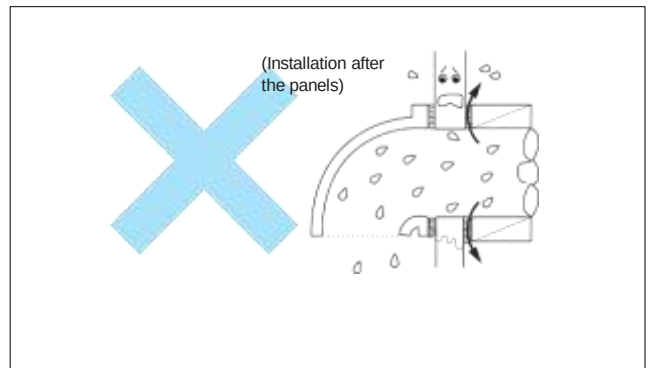
- **Do not use caulking for Touch-up or any repairs.**
 - ~ Caulking used for Touch-up or repair will fade over time. ~

2. General Precautions

2.2. Installation Precautions

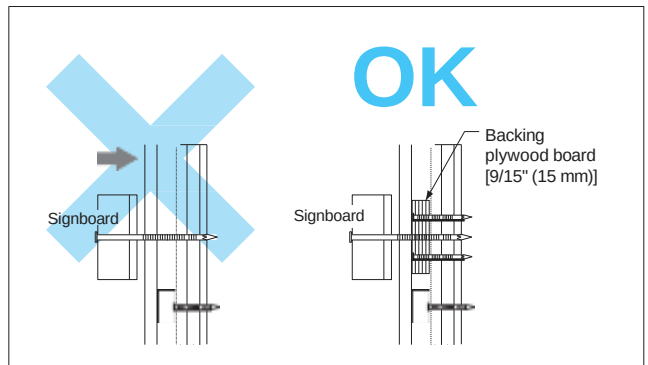
(9) Installing Vents or Other Penetrations

- **Install vents and other penetrations prior to panel installation or otherwise seal them from the air cavity.**
 - ~ The rain screen's air cavity must be kept separate from the building's ventilation system. ~



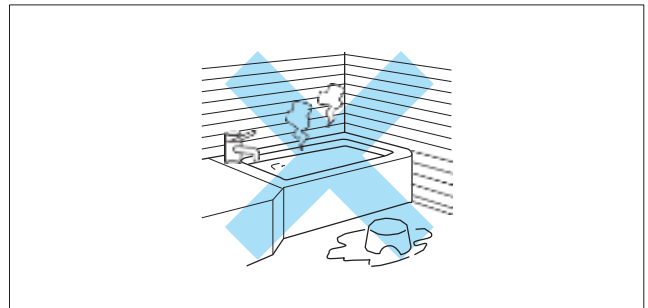
(10) Installation of Signs or Other Objects

- **Do not fasten signs or other objects directly to CERACLAD panels.**
 - ~ Objects must be secured into the building substrate, with furring used to fill the air cavity. ~



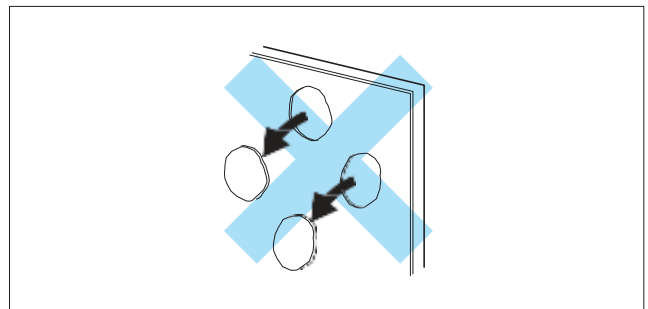
(11) Very High Humidity Locations

- **Do not install panels in areas constantly exposed to water or steam.**
 - ~The panels may warp or deteriorate under these conditions. ~



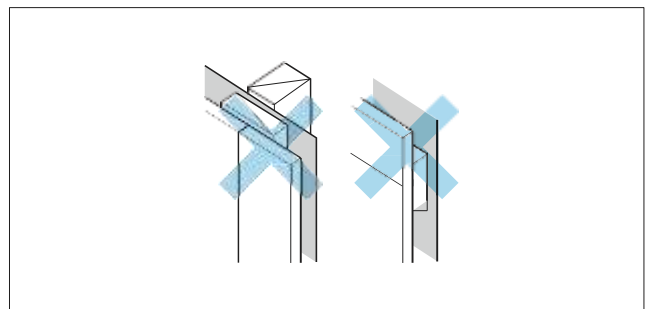
(12) Panel Painting/Coating

- **On-site coating is not recommended for ceramic products, which are pre-finished.**
 - ~Usage of recoating materials not recommended for the product may result in peeling or damage to the finish. ~



(13) Panel Butt Joints

- **Do not join the panels with a simple butt joint.**
 - ~Butt joints may cause water intrusion. All panel joints must be ship lapped or sealed with an approved sealant. ~



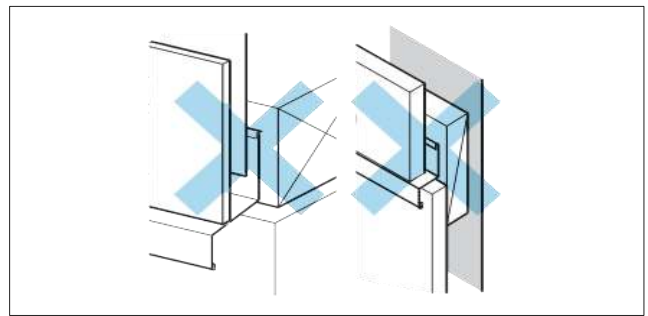
2. General Precautions

2.2. Installation Precautions

(14) Air Gaps At Flashing Details

- An air gap must be present between the panels and any through wall flashing or sill flashing.

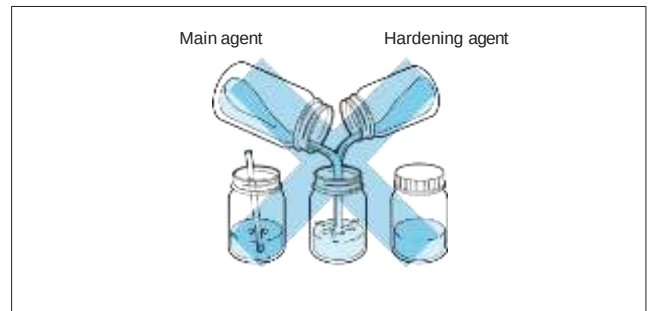
~A lack of a gap between the flashing and the panels can lead to water intrusion and deterioration of the panels.



(15) Mixing Touch Up Paint Agents

- Do not mix touch up paint components in quantities smaller than indicated.

~Incremental mixing could cause color mismatching or improper performance. ~



(16) Cleaning Panel Dust

- Do not use water when cleaning dust off of the panels.

~Panel dust may harden and stain the panel if it becomes wet.

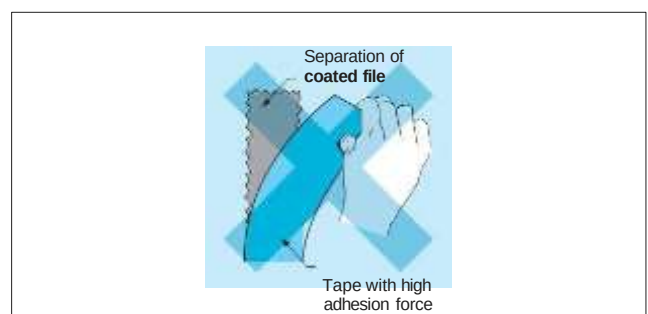
~Remove dust with compressed air or a dry and clean rag or brush.



(17) Using Tape for Caulking or Painting

- Use only painter's tape on the surface of the panels.

~Tape not safe for painting may damage the panel's protective coating when removed. ~



2. General Precautions

2.3. Health and safety

1. Warning about silica dust

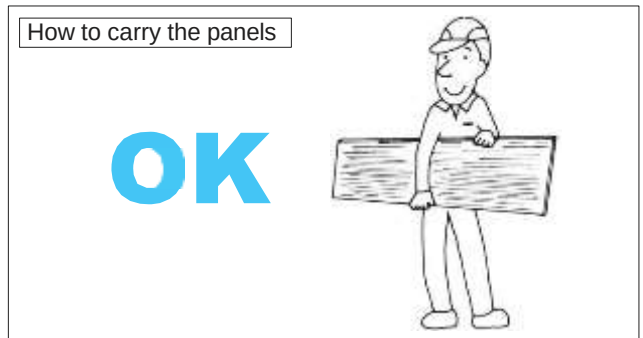
WARNING: AVOID BREATHING SILICA DUST

Cladding panels contain silica. Inhalation of respirable silica dust can cause silicosis a potentially disabling lung disease. When drilling, cutting, or abrading cladding panels during installation or handling, (1) Work outdoors where feasible, otherwise use mechanical ventilation, (2) Wear a dust mask or, if dust may exceed **PEL**, use **NIOSH/MSHA** approved respirator, (3) Warn others in area. For further information, refer to material safety data sheet or consult employer.

FAILURE TO ADHERE TO WARNINGS, MSDS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY.

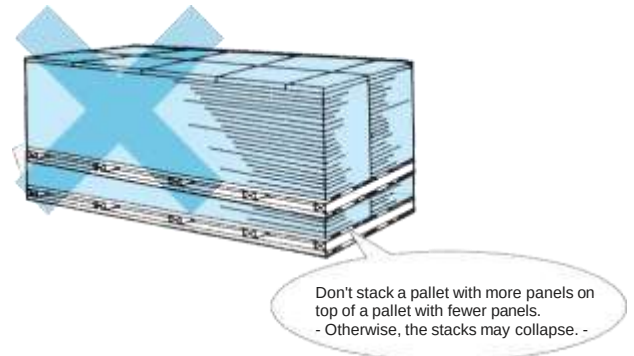
2. Handling and carrying

- One pallet weight approx. two tons.
- Carry the panels by holding their lengthwise edges under your arm.
- Take extra care to avoid hitting anything with the panels or dropping them, or the edges may be damaged.
- Don't touch the panels with dirty hands.



<Transportation by vehicle>

- When transporting the panels by vehicle, stack them flat.
- When loading panels onto a pallet, strap the panels down and use blocks to protect the panel edges.
- When loading/unloading panels, take extra care to avoid damaging them.
- When hoisting panels, put plates between the panels and ropes to avoid damaging the panels.
- Don't stack the pallet with more panels on top of the pallet with fewer panels.

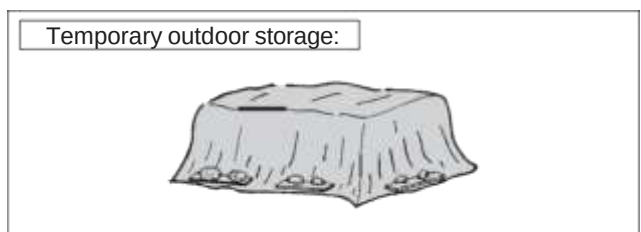
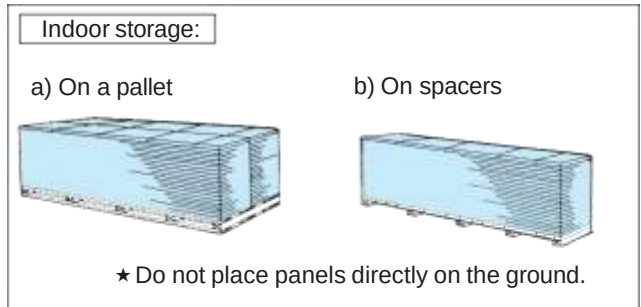


2. General Precautions

2.3. Health and safety

3. Storage and Handling

- Indoor storage (as shown) recommended. Due to the difficulty of controlling conditions, outdoor storage on a short-term / temporary basis only, and only with additional precautions to limit panel exposure to the elements.
- When storing panels at the jobsite for an extended period of time, store indoors with the following additional precautions: Cover with a tarp, and store flat in the manufacturer's original packaging in a secure, dry, temperature-stable environment away from the elements, and away from potential physical damage. Particular care needed to avoid humidity and moisture when storing panels with uncoated faces.
- Manufacturer cannot be responsible for panel failure or damage due to improper storage.
- Store the panels flat and under cover. Keep the panels dry and off the ground prior to installation to avoid moisture conditions that could affect the quality of the work.
- The panels are not to be stacked more than two pallets high. Pallets should be loaded and unloaded with a forklift or sling. Taking care not to drop the pallet.
- Keep the panels clean when handling on site and take care not to damage the edges.
- When necessary to stand panels on edge prior to installation, take care to avoid contact with rough and abrasive surfaces that could damage the factory-applied coating or sealer.
- Panels should be carried mid span and on edge for ease of handling and to avoid breakage.



4. Health precautions

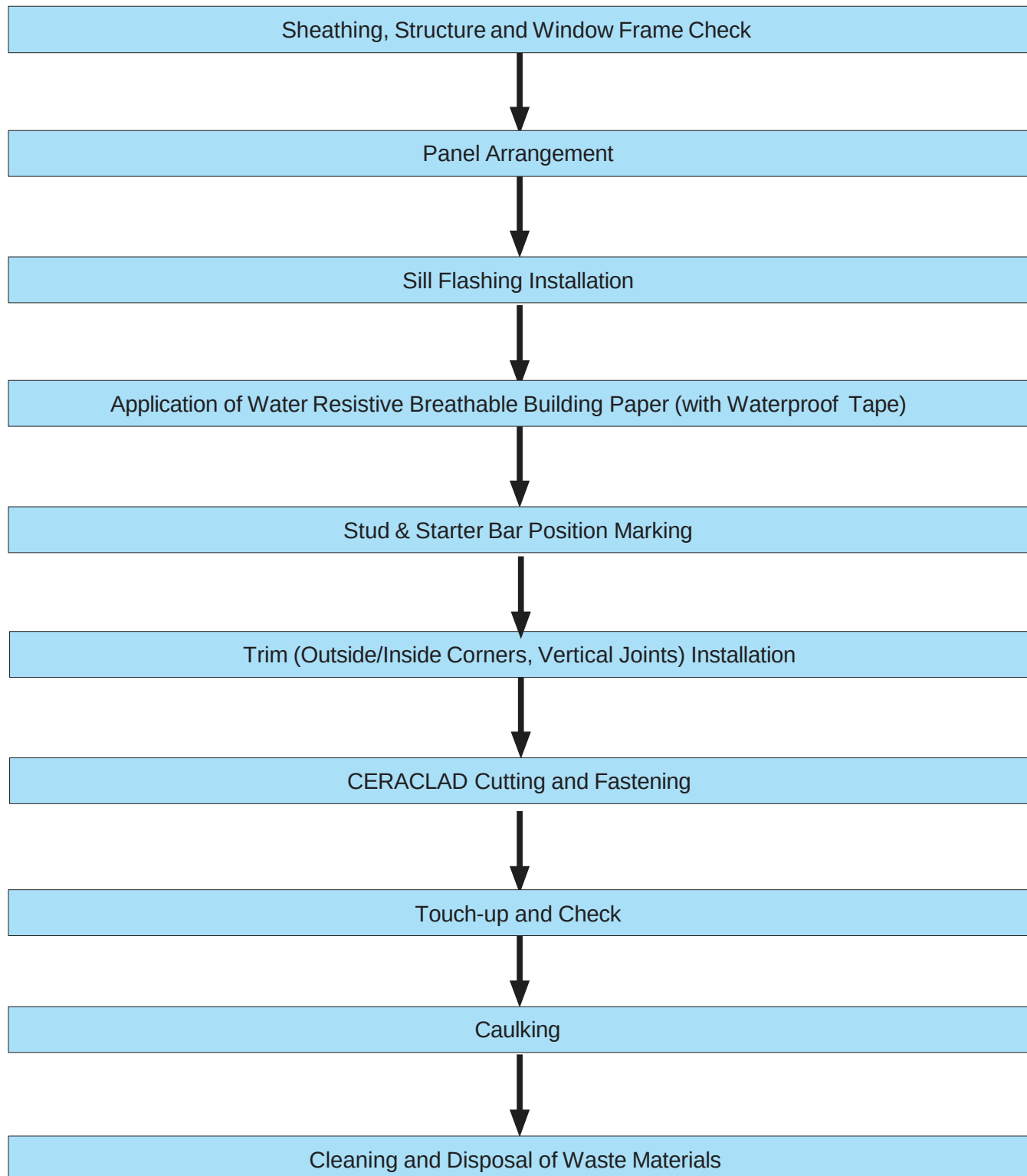
- 1) When cutting the panels, prolonged inhalation of a large amount of dust may be harmful to your health. Please use the follow precautions:
 - Use a vacuum saw with built in dust collection. Do not use a wet saw to cut panels.
 - Wear a dustproof mask and dustproof glasses.
 - Work in a well-ventilated location.
 - Make sure to wash your hands.
- 2) When using a solvent-based material, such as repair paint, waterproof sealer, caulking, and caulking primer, wear an appropriate mask and protective gloves, and work in a well-ventilated location.



3. General Installation Instruction

3. General Installation Instruction

1. Installation Order for Wood/Steel Structure with 15mm Clips



3. General Installation Instruction

2. Panel Arrangement

<1> Horizontal Application

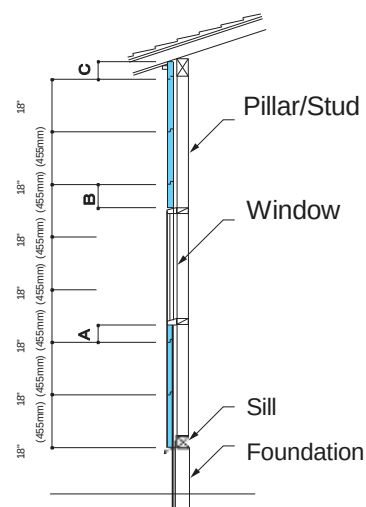
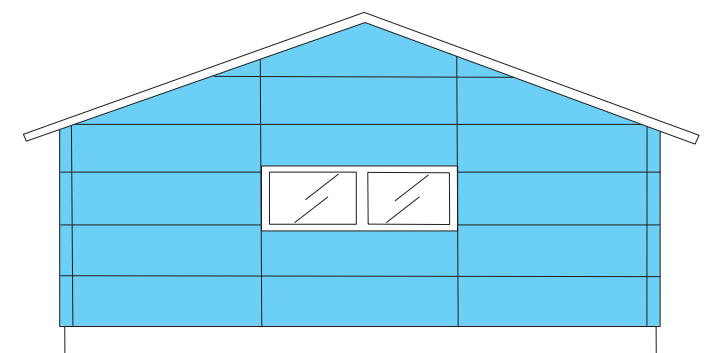
- When laying out the panels, take into consideration the appearance of the building, the length of provided accessories and how to minimize material waste.
- Layout sealant joints in advance to create an aesthetically pleasing finish.

⚠ **Include the inside dimension of the pre-formed outside corners in consideration of panel arrangement.**

- Vertical joints should be aligned with studs.
- Include the sealant joint width (3/8") for each vertical joint.

⚠ **Pay attention to window locations and eave soffit height to provide more than 2 ½ inches for the panels above and below window frames (A, B, figure below right) and panels below the soffit (C). Avoid installing panels that are less than 2 ½ inches wide in these locations.**

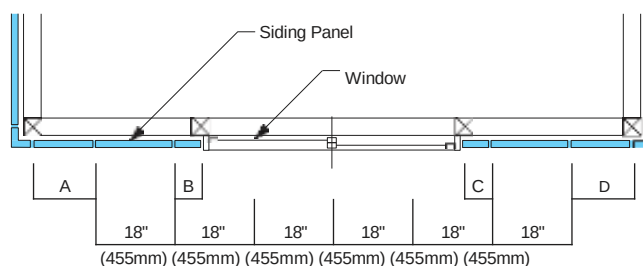
Example of arrangement from center of the building



<2> Vertical Application

⚠ **Include the inside dimension of the pre-formed outside corners in consideration of panel arrangement.**

- The furthest left and right panels should be at least as wide as the side of the outside corners.
- Two methods for avoiding narrow panel pieces are included in this manual: "Centering the Joint" or "Centering the Panel". Refer to the next page for these methods.
- Arrange the panels from the center of the building wall. Make sure the panels along both window frame sides (B and C) are at least 2-1/2 inches wide.



3. General Installation Instruction

2. Panel Arrangement

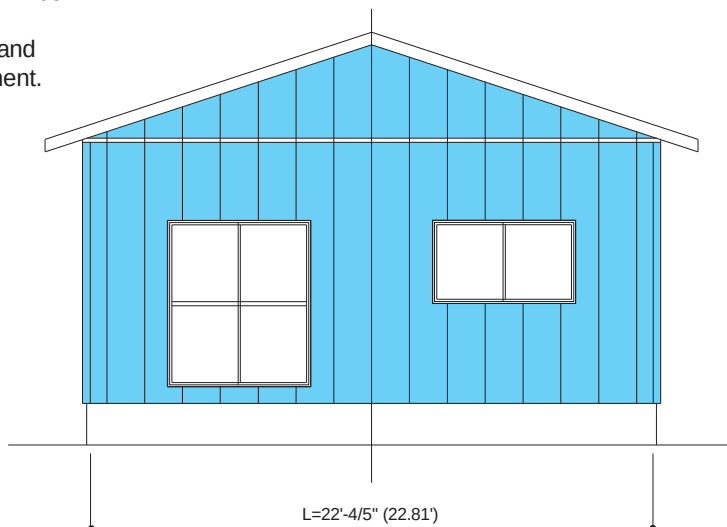
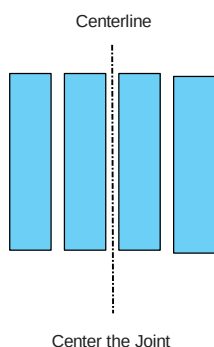
<2> Vertical Application.

Center the Joint

The building wall centerline matches a vertical joint.

(Example) The building wall length is 22'-4/5".
Then convert it to feet, resulting in 22.81'
 $22.81' / 2 \div 1.49'$ (panel width) = 7.65

When the number after the decimal point is 0.5 and above, then choose "**Center the Joint**" arrangement.

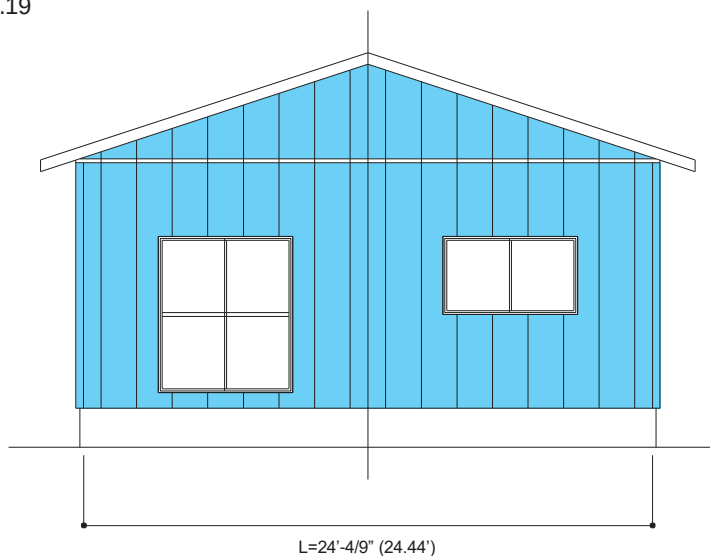
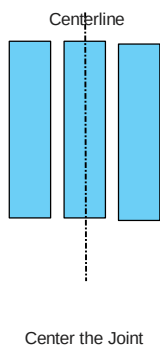


Center the Panel

The building wall centerline matches a vertical joint.

(Example) The building wall length is 24'-4/9".
Then convert it to feet, resulting in 24.44'.
 $24.44' / 2 \div 1.49'$ (panel width) = 8.19

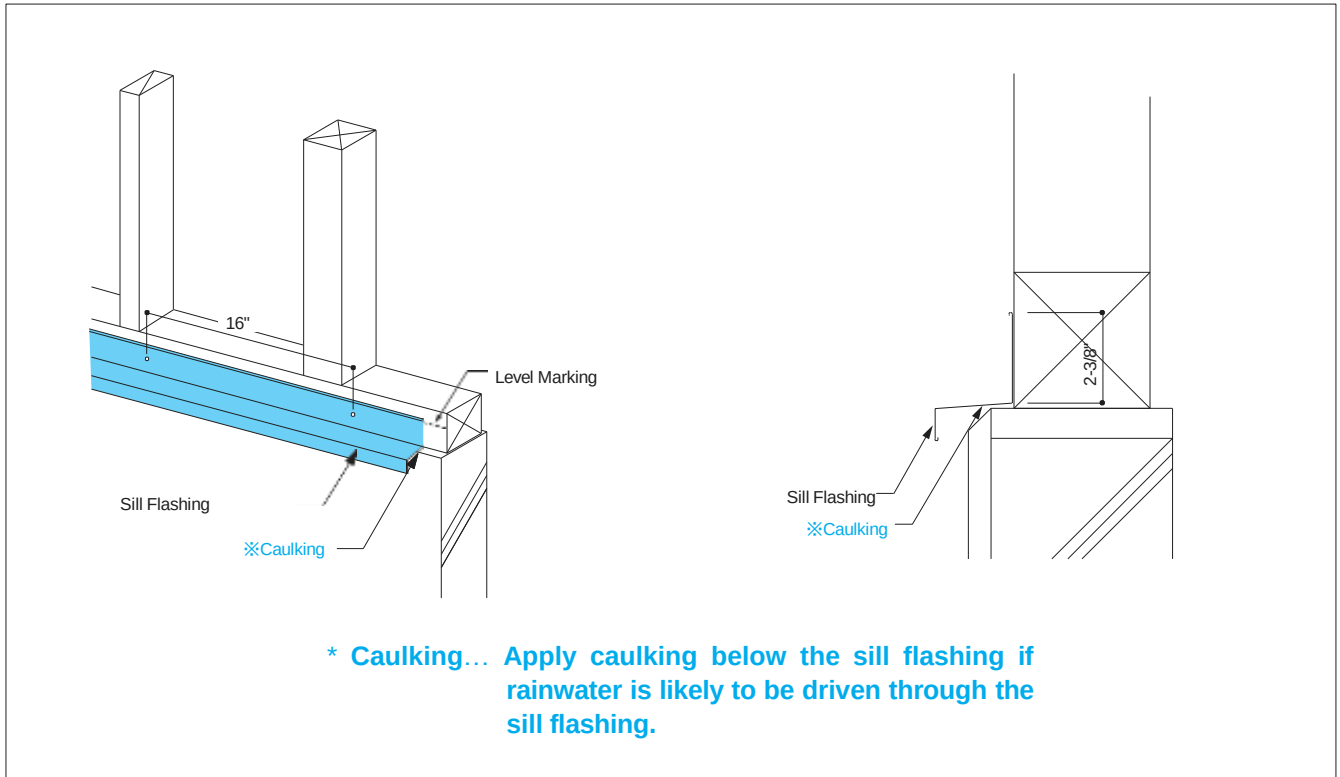
When the number after the decimal point is below 0.5, then choose "**Center the Panel**" arrangement.



3. General Installation Instruction

3. Installation of Sill Flashing

- Install sill flashings along the sills with a leveling tool.
- Sill flashings should be fixed with ring nails for wood structures and with pan-head screws for steel structures at 16" on center.



- Install sill flashings along the sills with a leveling tool.
- Sill flashings should be fixed with ring nails for wood structures and with pan-head screws for steel structures at 16" on center.

3. General Installation Instruction

4. Cutting CERACLAD

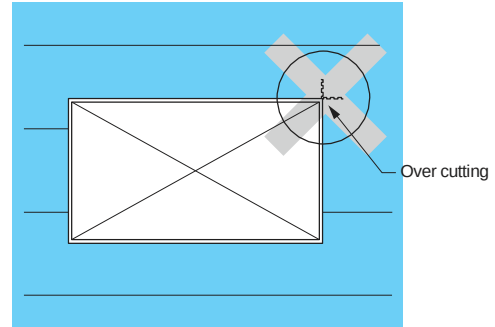
⚠ Be careful when handling small pieces of siding as they can be fragile.

<1> Cutting Panels

Use a dust collecting vacuum saw and dust-proof mats when cutting CERACLAD.

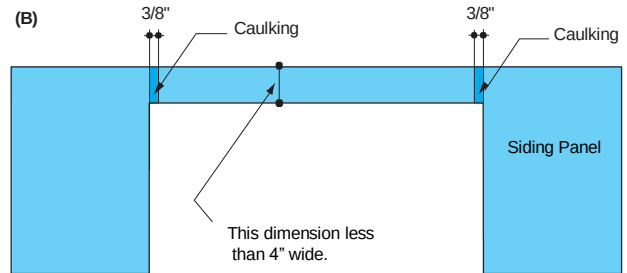
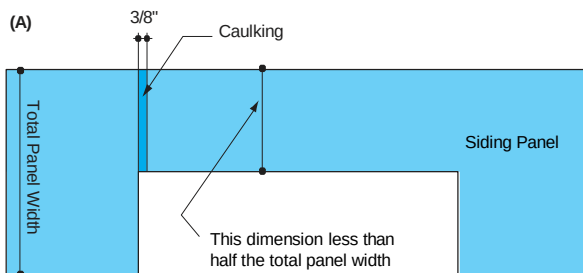


Over cutting may cause cracks on the panel surfaces or rain leakages.



⚠ Do not use water when cleaning dust off of the panels. Use compressed air or a clean dry cloth.

⚠ If small pieces are installed above or below a wide opening, it is recommended to follow example B and completely separate the smaller section.



Example A: If the cut piece above or below an opening is less than half the total width of the panel but greater than 4" wide, separate the panel into 2 pieces and fill the gap with caulk (approx. 3/8" wide) at one edge of the opening.

Example B: If the cut piece above or below an opening is less than 4" in width, separate the panel into 3 pieces and fill the gaps between each piece with caulk (approx. 3/8" wide).

Note: Minimum panel dimension is 2-1/2". Avoid cutting panels smaller than this width.

<2> Treatment of Cut Edges

- Apply KMEW specified waterproof sealer to the following panel edges

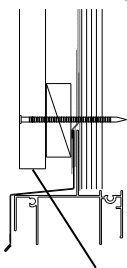


- Soak the brush with the sealer and brush back and forth from edge to edge of the application surface to ensure that the wet color is firmly applied to the panel edge surface.

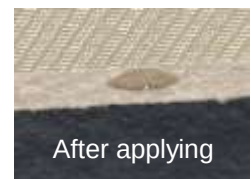
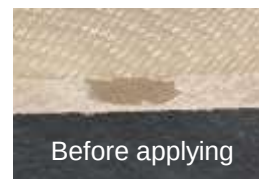
⚠ Ensure that the sealer does not extend beyond the panel edge.

Waterproof sealer application required

Exposed cut edges



Exposed cut edge



The sealer is applied to make the panel edge surface water-repellent.



Do not apply waterproof sealer to panel edges where caulking is to be applied. It may cause the caulking to peel off.

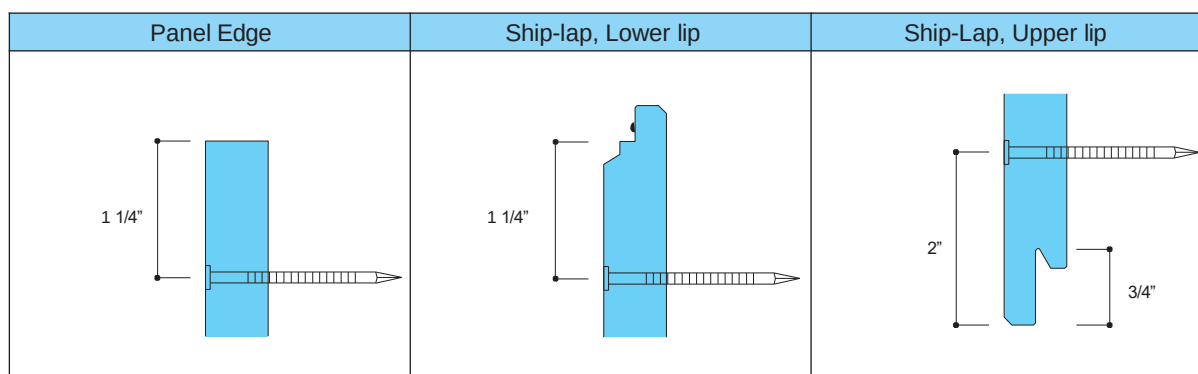
3. General Installation Instruction

5. How to fix nails or screws

- Install spacer blocks or pressure treated furring behind panels that are fixed with nails or screws through the panel.
- Predrill pilot holes before driving face screws or nails through the panel. Use a bit that is 1 mm smaller than the fastener.

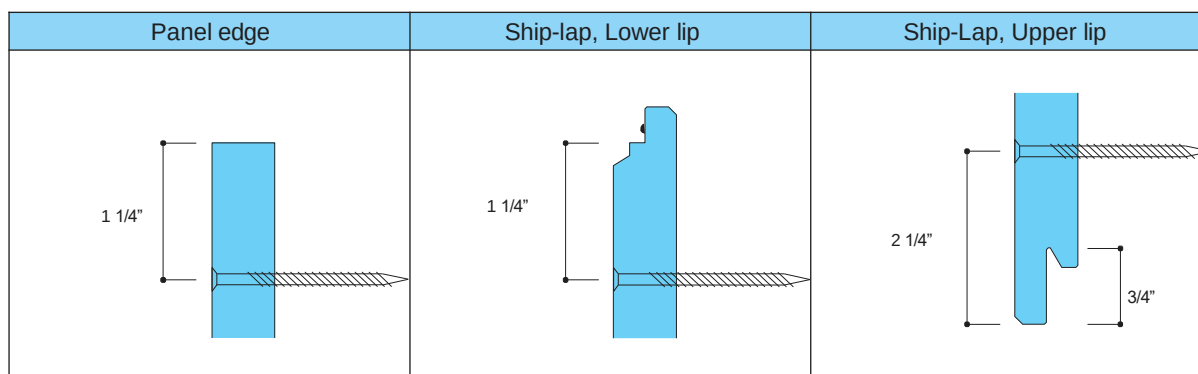
<1> Wood Structure

- The minimum distance should be 1-1/4 inches from the thick portion of the panel (not including the shiplap edges).
- Keep the minimum distance from the edge of siding, drill pilot holes (nail diameter - 1mm) and fix the siding panels with ring nails.
- Apply the touch-up paint on the nail heads.



<2> Steel Structure

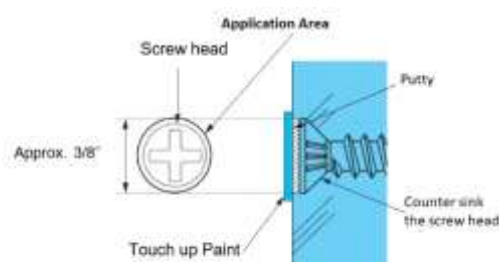
- Keep the minimum distance from the edge of siding, drill pilot holes (screw diameter - 1mm) and fix the siding panels with stainless steel screws.
- The minimum distance should be 1-1/4 inches from the thick portion of the panel except for shiplap lips.



- Screw heads can be treated with one of the following methods:

1. Drive the screw just below the siding panel surface, apply repair putty to it, and apply touch-up paint after the putty has hardened sufficiently.
2. Apply touch-up paint on the screw heads. This method is only applicable for CERACLAD system screws, which are alloy coated stainless steel. Touch up paint will not properly adhere to bare stainless steel. Therefore, all locally purchased stainless steel screws must be finished using the method described in section 1 above.

EX. Applying touch-up paint after applying putty



3. General Installation Instruction

6. Application of Touch-up Paint



Please read before proceeding

- Paint should be finished within the same day of mixing the paint ingredients. If the application cannot be completed within the same day, be sure to finish painting within 24 hours of applying the primer.
- Failure to follow the procedures below can result in poor color matching and may cause repaired portions to discolor over time. Please note that we assume no responsibility for such a case.
- Use no caulking materials in touch up repairing. Caulking used for touch-up will fade over time.
- Although the solid paint base may appear hard, it will work properly after vigorous mixing with the liquid hardener.
- Please refer to the material identification key to identify the ingredients.

Material Identification Key.



Blue Label:
Paint Base

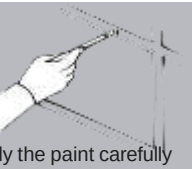
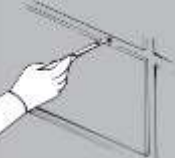
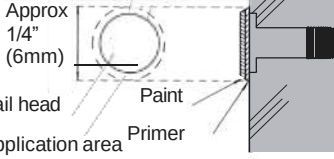


Red Label:
Primer



Green Label:
Hardener

- Follow these directions when applying touch-up paint.

1) Preparation	• Ensure that the siding surface is completely dry. Avoid painting when it is rainy and wet or the temperature is 40°F or less. • Clean dirty painting portions.  Be sure to finish application within a day, if possible, as both the primer and the paint have a working life.	Touch up Paint Kit    Paint Base Primer Hardener Brushes 
2) Mixing of touch-up paint	• Pour the entire bottle of hardener into the base paint bottle. Shake the bottle well. • The mixed paint is susceptible to air humidity; be sure to close the lid tightly after mixing and agitation. • The mixed paint should be used after 30 minutes and within 8 hours of mixing.  • For best results mix the entire quantities of the two bottles. Incremental mixing may result in poor performance. • Leave the mixed paint alone for 30 minutes after mixing to stabilize the color tone. • Apply the mixed paint within 24 hours after applying the primer.	  Paint Base Hardener  Put all of the hardener into the paint base bottle.  Shake the bottle well until paint color becomes even.
3) Primer application	• Avoid dripping during application. In case of dripping, remove it immediately with a clean cloth. • The primer is susceptible to air humidity; be sure to close the lid tightly after use.  • For best results, apply sparingly.	Brush  Primer  Apply the paint carefully to prevent dripping.
4) Drying	• Allow 30 minutes for the primer to dry.	
5) Application of touch-up paint	• The mixed paint should be used after 30 minutes and within 8 hours of mixing. • Use the included brushes to apply the paint without dripping. • Apply the paint over portions applied with the primer. • Apply the paint within 24 hours after applying the primer.  • For best results, use the paint sparingly and cover only the nail head. • Prime all locations before painting.	  Approx 1/4" (6mm) Nail head Paint Primer Application area
6) Inspection	• Check for uncoated sections. Paint as needed.	

4. Wood Frame - Plywood Sheathing - Horizontal Application

<1> Siding Panel Installation Accessories

<2> Installation Overview

<3> Starter Bar Installation

<4> Install Panel Clips

<5> Installation of Vertical Joint

<6> Through Wall Flashing

<7> Install Outside Corner (Preformed)

Install Outside Corner (Metal)

<8> Install Inside Corners

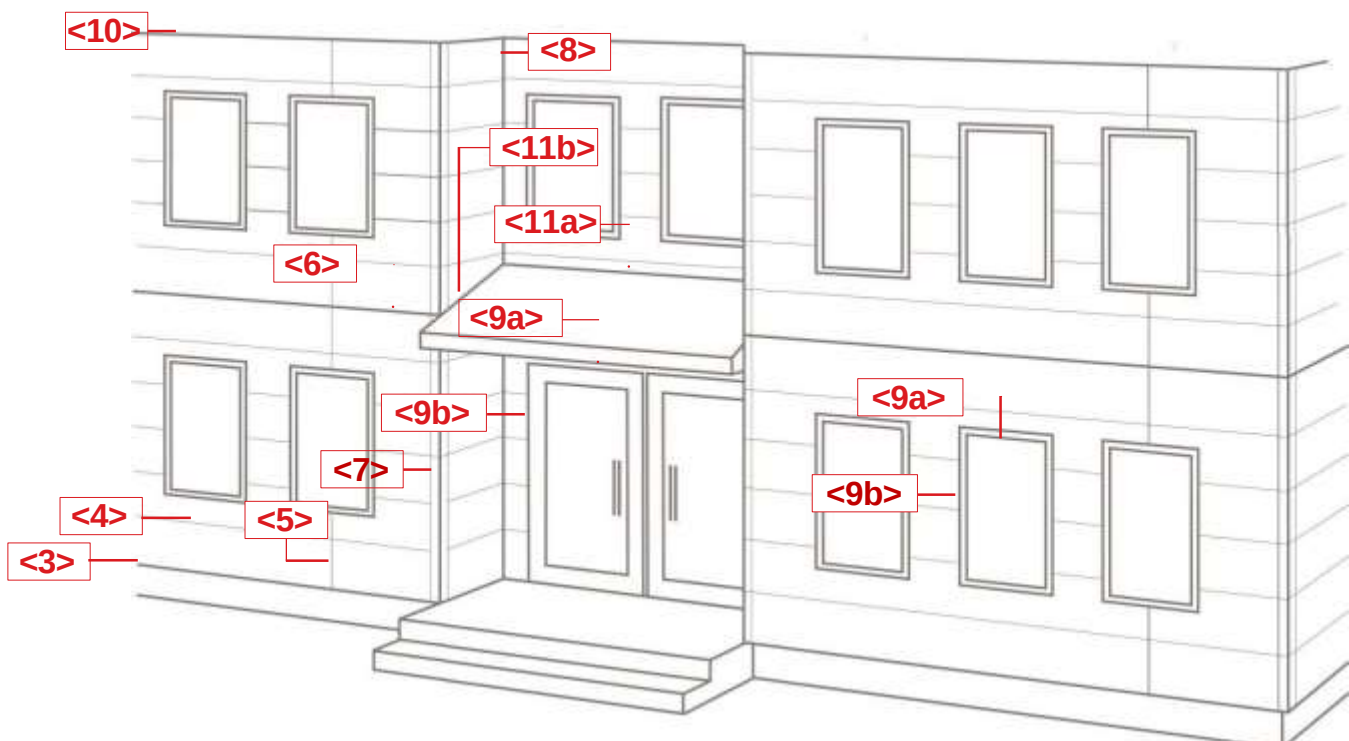
<9a> Openings (Above and Below)

<9b> Openings (Sides/Jambs)

<10> Top of Wall

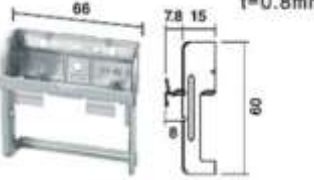
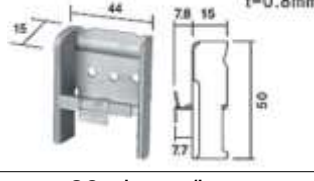
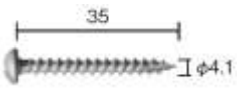
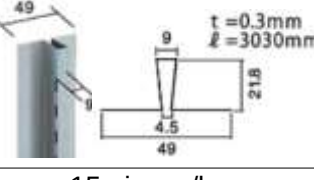
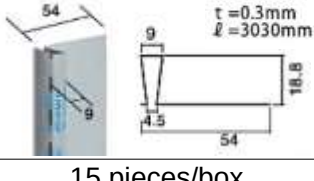
<11a> Intersection with Roof (Ridge Side)

<11b> Intersection with Roof (Slope Side)



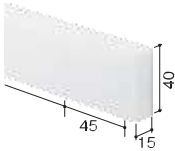
4. Wood Frame - Plywood Sheathing - Horizontal Application

<1> Siding Panel Installation Accessories

Name (SKU)	Photo	Material	Places of application
Starter bar for horizontal application (B101152)		Hot-dip zinc-aluminum-magnesium alloy coated steel	Serve as a support for the first panels in the case of horizontal installation. Applied on the sill of the building before the installation of the panel.
	4 pieces/box		
Panel clip (B10115)		Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the panel to a wood substructure
	30 pieces/bag		
Corner Clip (B101153)		Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the preformed corners
	20 pieces/bag		
Long clip (B10155)		Hot-dip zinc-aluminum-magnesium alloy coated steel	It is used for fastening the panel to a wood substructure at increased wind loads
	6 pieces/box		
Clip screw 35 for wood substructure (B881135)		Stainless steel	Used for attaching clips to a wood substructure
	500 pieces/box		
Face nail 65 for wood substructure (B8765R400)		Stainless steel	It is used to fasten the panel in places where the use of clips is impossible or necessary to strengthen the fastening
	40 pieces/bag		
Metal Caulking Joiner (B2722)		Zinc/aluminum coated steel	It is used on vertical joints of panels
	15 pieces/box		
Metal Caulking Joiner One-side (B2719K)		Zinc/aluminum coated steel	It is applied on the inside corners, between the opening flashing and the panels
	15 pieces/box		

4. Wood Frame - Plywood Sheathing - Horizontal Application

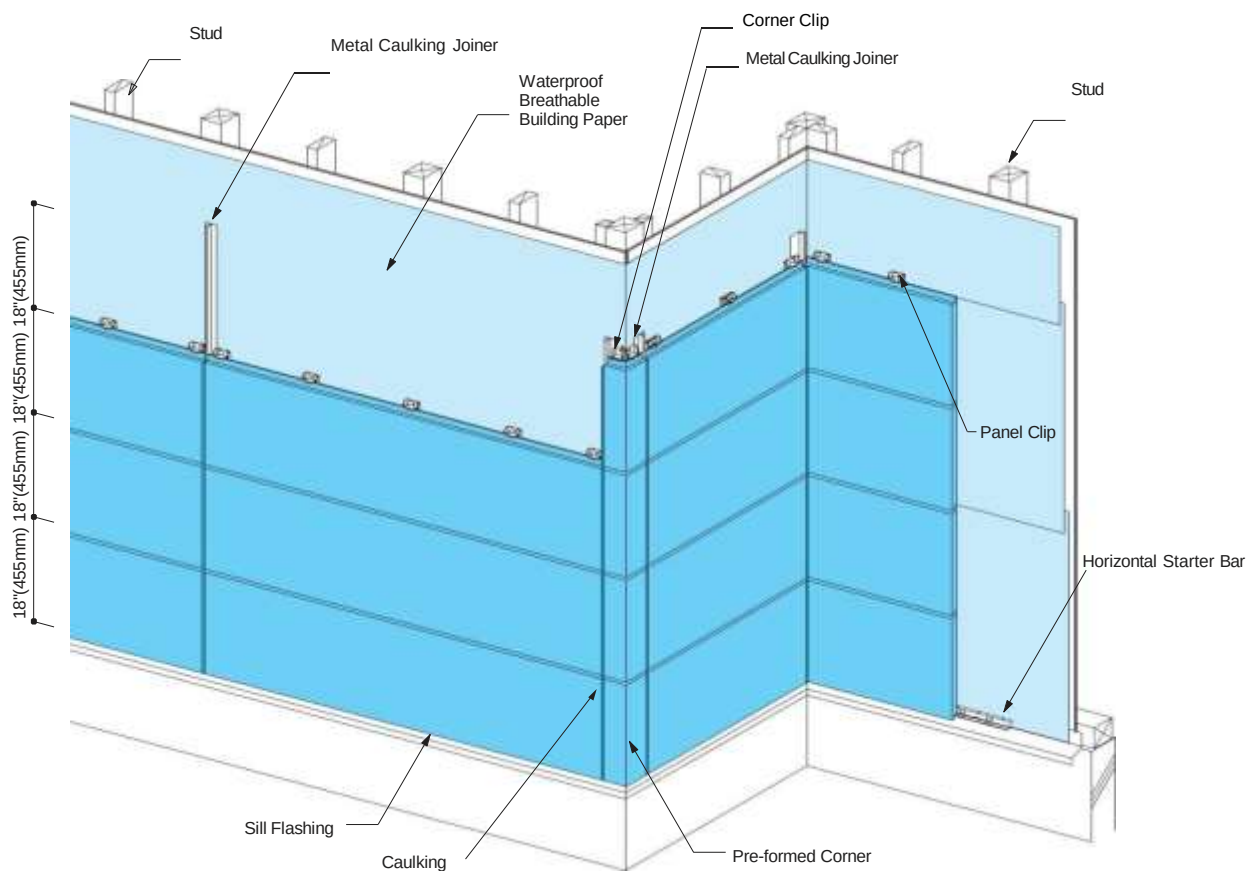
<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Spacer 15 (RY82S15)		Polypropylene	Used as backing for face fastener locations to eliminate deflection of the panel.
	22 blocks/strip 6 strips/box		
Water proof sealer (LTKMB3103C)		Silane water repellent	It is applied on the cut edges
	1 piece		
Repair putty (B4901)		Acrylic emulsion	It is used for scratches, chips and holes from face screws.
	1 piece		
Repair paint (Different for each SKU)		—	It is used on spots where putty is applied and scratches.
	1 set/box		

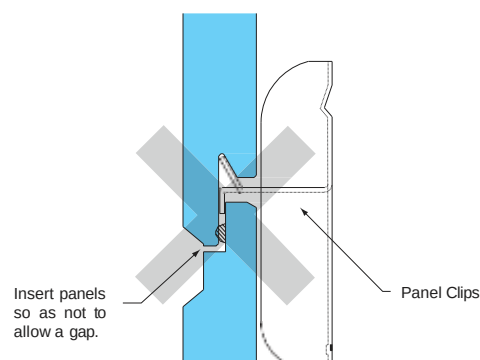
4. Wood Frame - Plywood Sheathing - Horizontal Application

<2> Installation Overview

- Install starter bars at the base of the wall.
- Install starter bars so as to hold both siding panels and pre-formed corners.
- Install siding panels with panel clips and pre-formed corners with corner clips.
- Clips have several holes for screws. Fasten clips with one screw when fastening to a stud; use two screws when fastening only to sheathing.
- At the top of a wall, below or above an opening, or in any situation where the panel's shiplaps have been removed, clips cannot be used. Install spacer blocks behind the areas to nail, predrill pilot holes and drive ring nails with a minimum distance of 1-1/4" from the siding panel edge. After installation, apply touch-up paint to conceal nail heads.



- Install siding panels so as not to allow gaps between them.



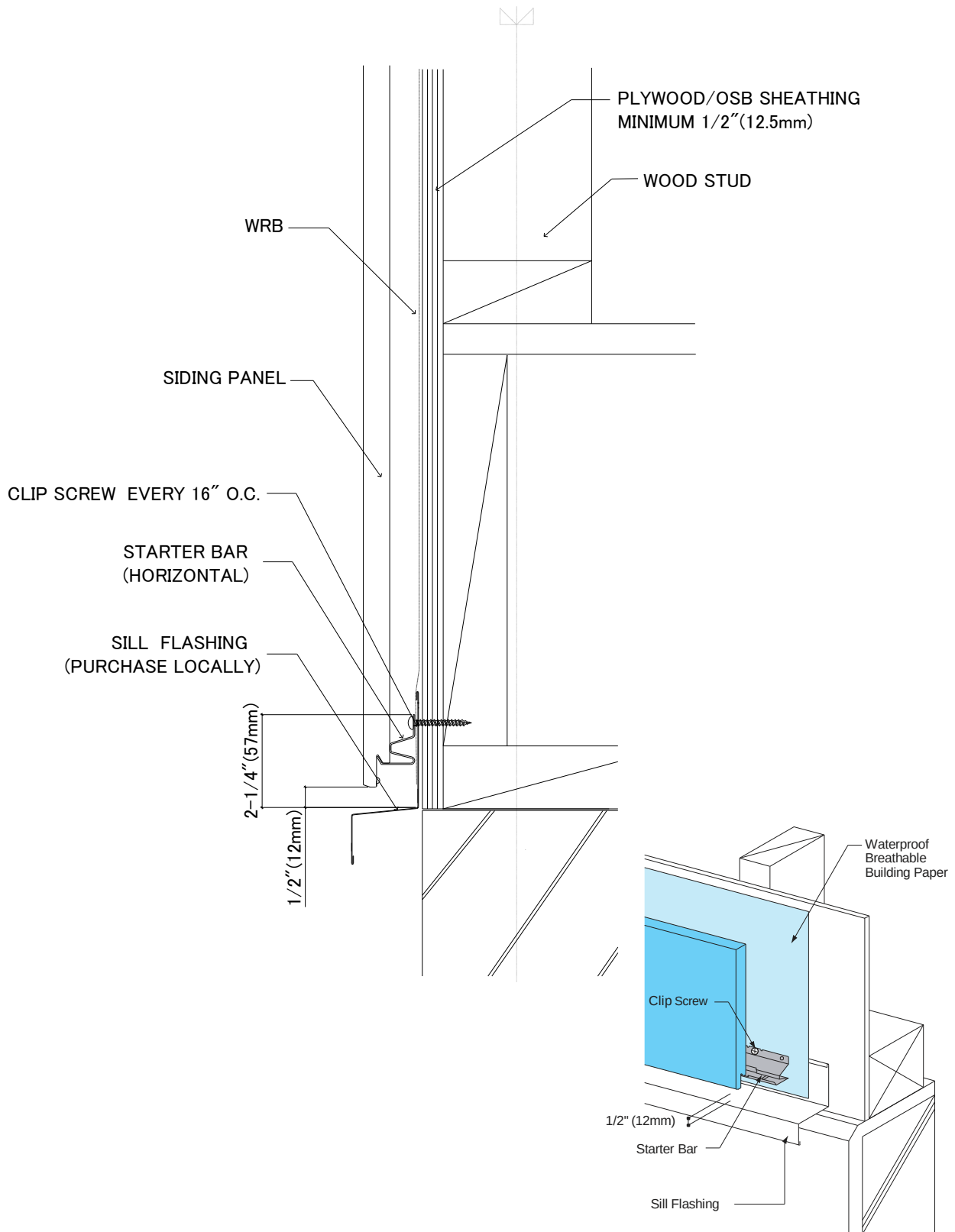
4. Wood Frame - Plywood Sheathing - Horizontal Application

<3> Starter Bar Installation

- Starter Bars at the base of the wall serve as the reference for the CERACLAD installation so ensure they are level.

 **Make sure the panels are level at each row.**

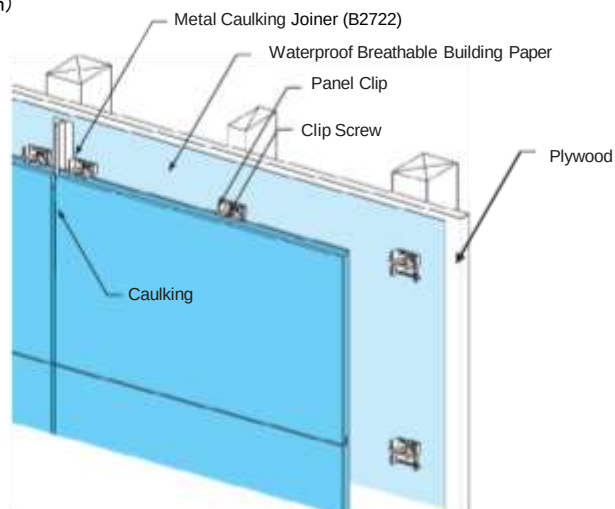
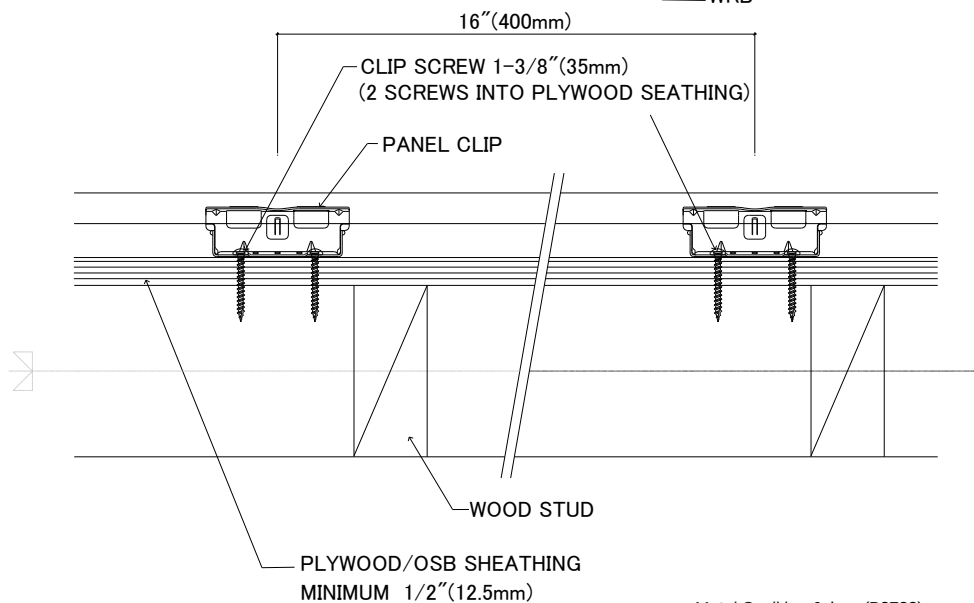
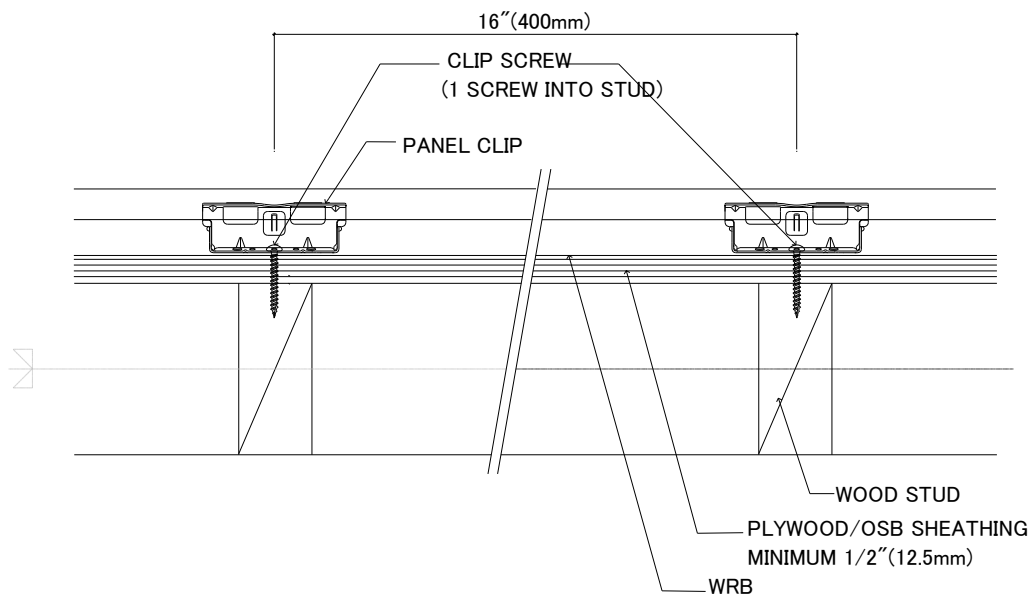
- Fasten the starter bars with clip screws at 16" on center.
- Fasten the starter bars so as to allow approximately a 1/2" gap between the sill flashings and siding panels.



4. Wood Frame - Plywood Sheathing - Horizontal Application

<4> Install Panel Clips

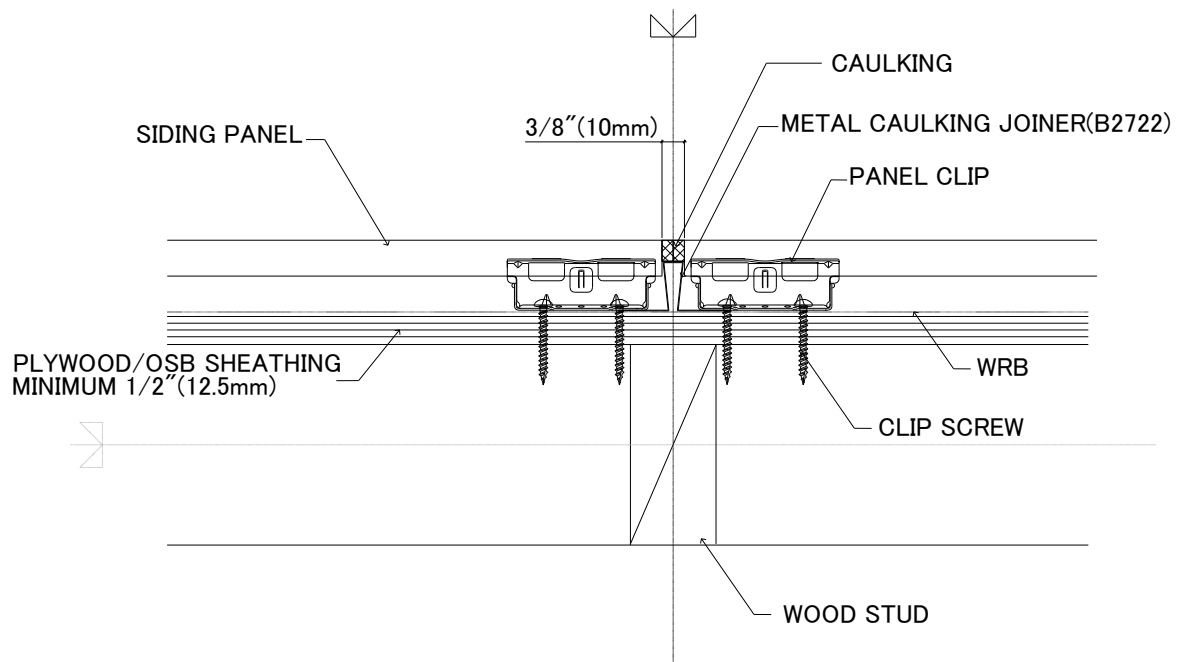
- Fasten a **Panel Clip** securely with **1 screw onto a stud** or with **2 screws when fastening to sheathing only** at 16" on center.
- If using one screw, use the center hole. If using two screws, use the left and right holes.



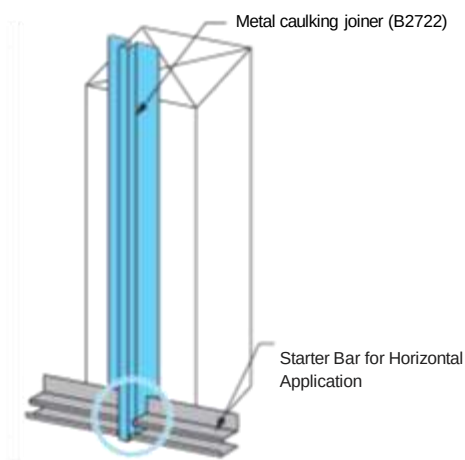
4. Wood Frame - Plywood Sheathing - Horizontal Application

<5> Installation of Vertical Joint

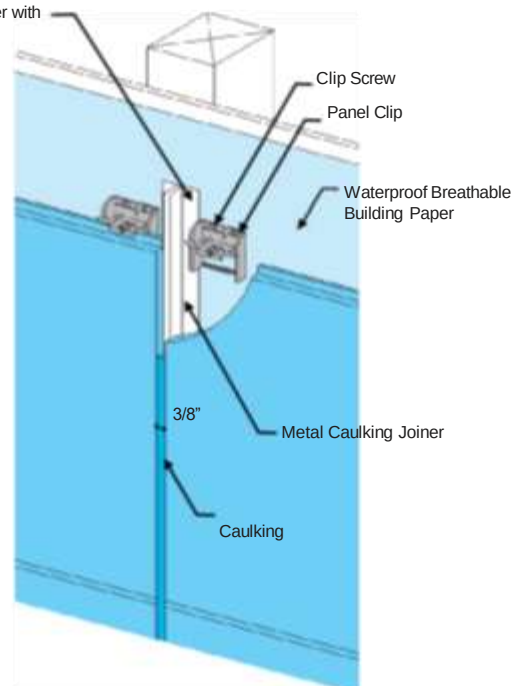
- Use the metal caulking joiners for vertical joints to establish the proper profile for a sealant joint.
- ▲ **Attach the caulking joiner with screws staggered at 24" on center.**
- Install panel clips on the panels adjacent to the joiner as shown on the figure below.
- Fasten a **Panel Clip** securely with **1 screw onto a stud** or with **2 screws onto the sheathing only**.
- ▲ **Panel clips may be installed on top of the metal caulking joiner's flange.**



Attach the metal caulking joiner with screws staggered at 24" oc.



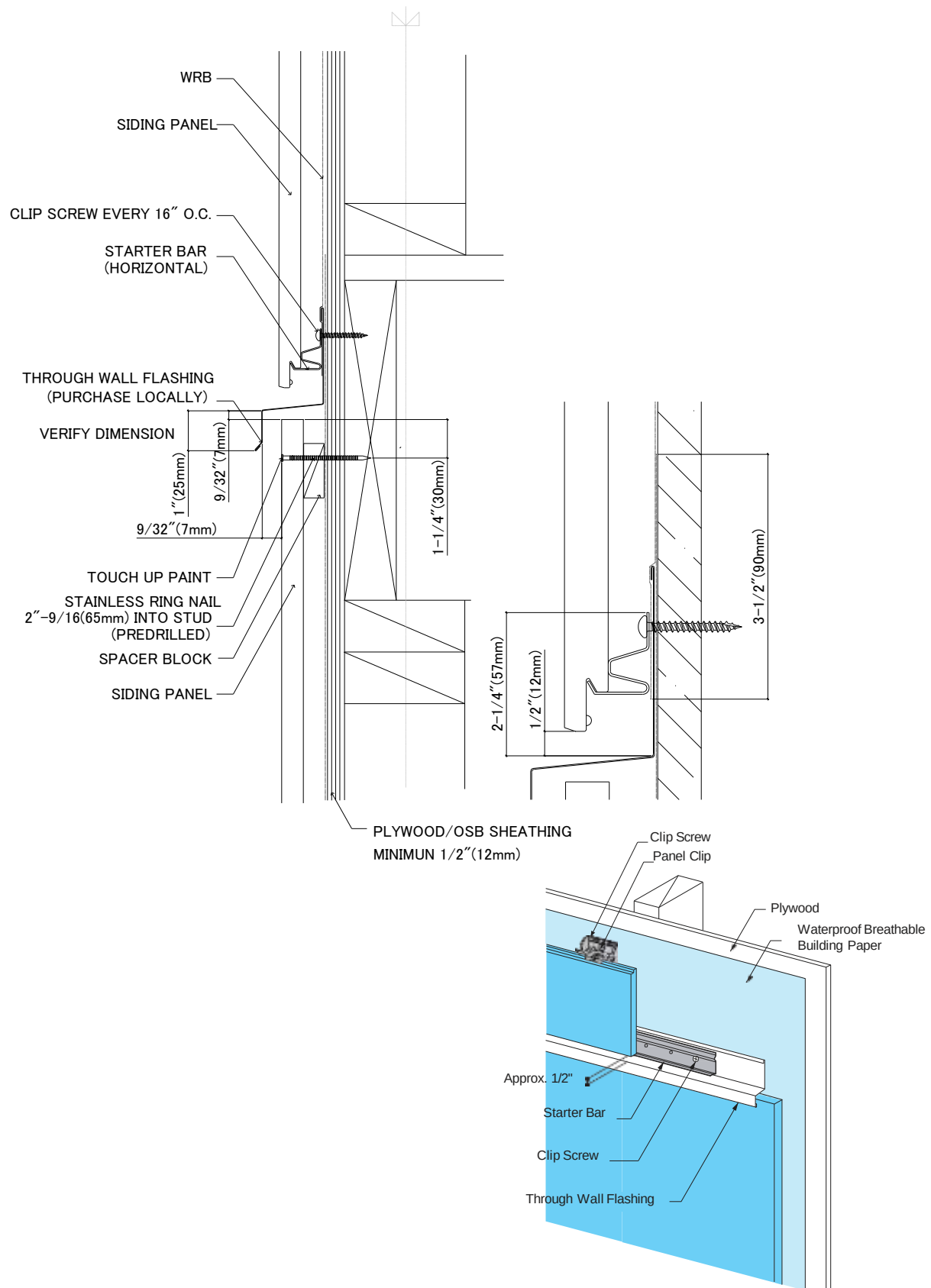
※ Also, The joiner can be notched so that the front of the joiner will extend over the starter bar.



4. Wood Frame - Plywood Sheathing - Horizontal Application

<6> Through Wall Flashing

- Install Spacer Blocks or Furring Strips (pressure treated) behind the siding panels above which the through wall flashings will be installed, predrill pilot holes every 16", and fasten the panels with ring nails at least 1-1/4" from the panel's edge. Make sure to apply touch-up paint on the nail heads after installation.
- Keep 6mm (1/4") space between the upper edge of panel and flashings and install the through wall flashings.
- Install Starter Bars, and then panels. Refer to page 27, "Starter Bar Installation".



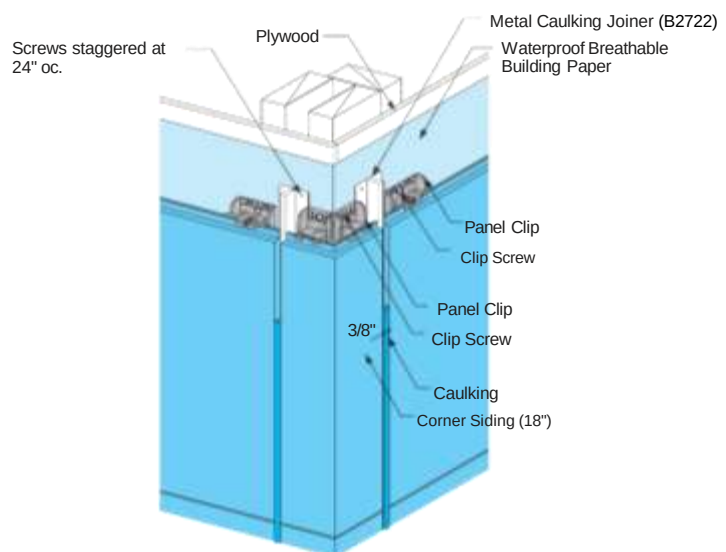
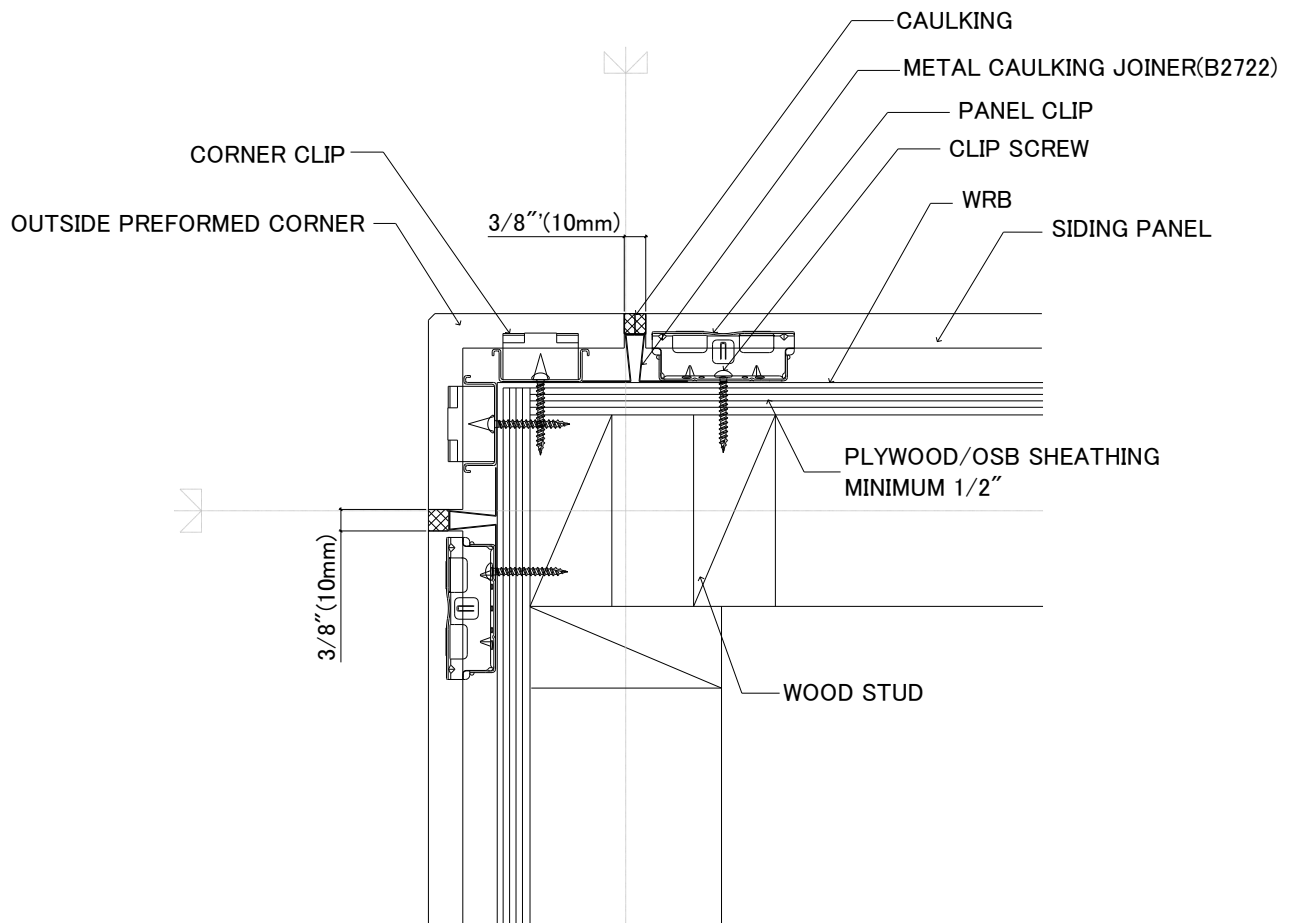
4. Wood Frame - Plywood Sheathing - Horizontal Application

<7> Install Outside Corner (Preformed)

- Install a preformed outside corner with two corner clips.
- Install corner clips securely with one clip screw.
- Install metal caulking joiners between the preformed outside corners and the panels.

▲ **Attach the caulking joiner with screws staggered at 24" on center.**

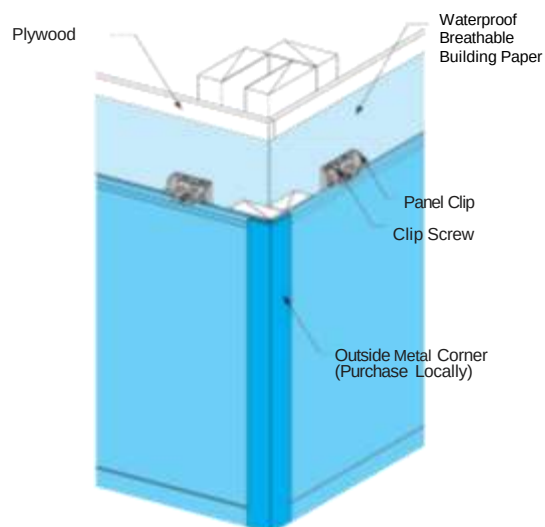
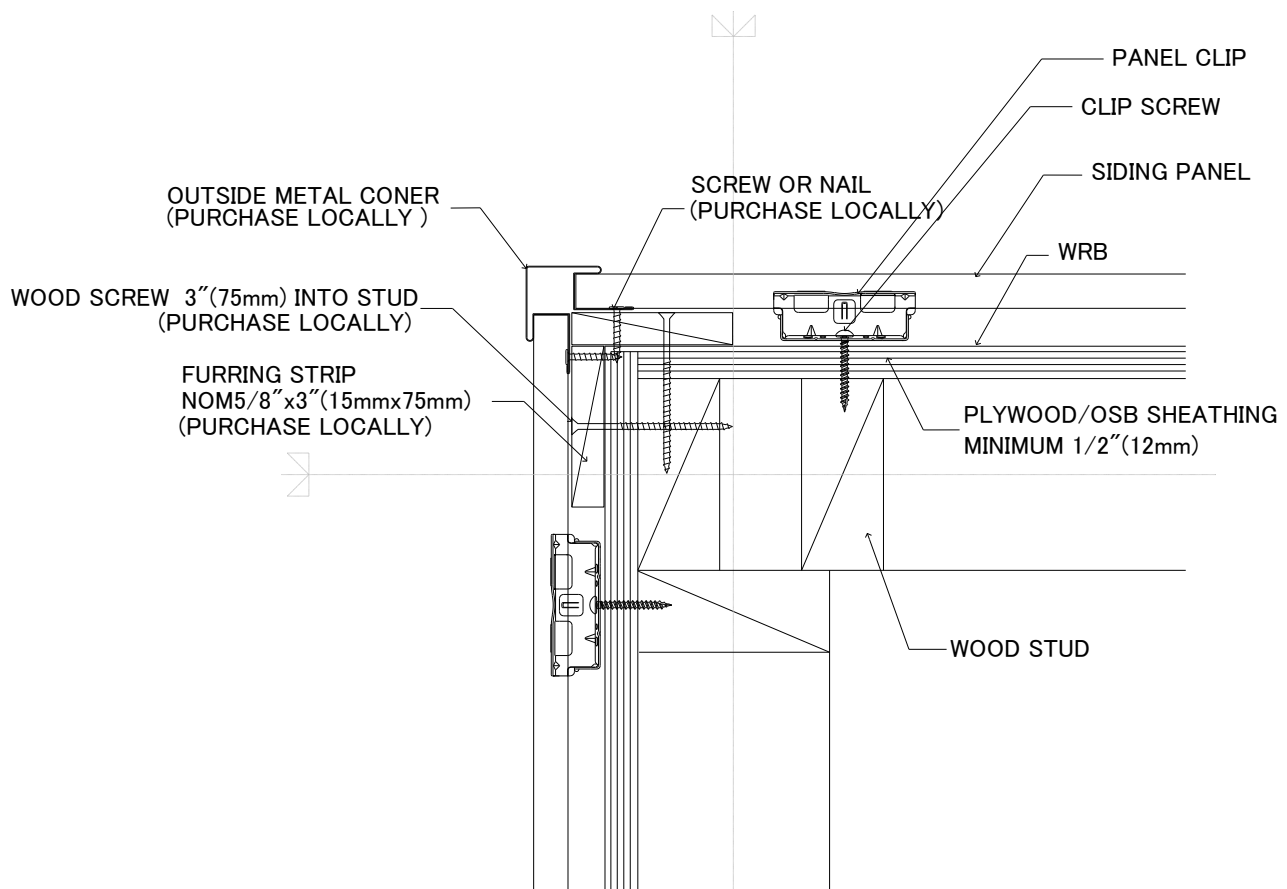
- Install preformed corners to be level with the siding panels.



4. Wood Frame - Plywood Sheathing - Horizontal Application

<7> Install Outside Corner (Metal)

- Install vertical furring strips (pressure treated) on both sides of the outside corner.
- Install metal outside corners on the furring strips.
- Install the metal outside corners so as to have approximately 1/2" of space between the sill flashings and the corners.
- Metal outside corners should cover the cut edge of the panels by 3/8" or more

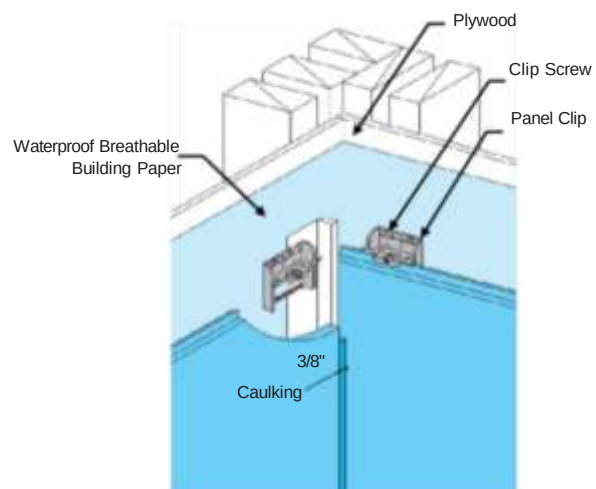
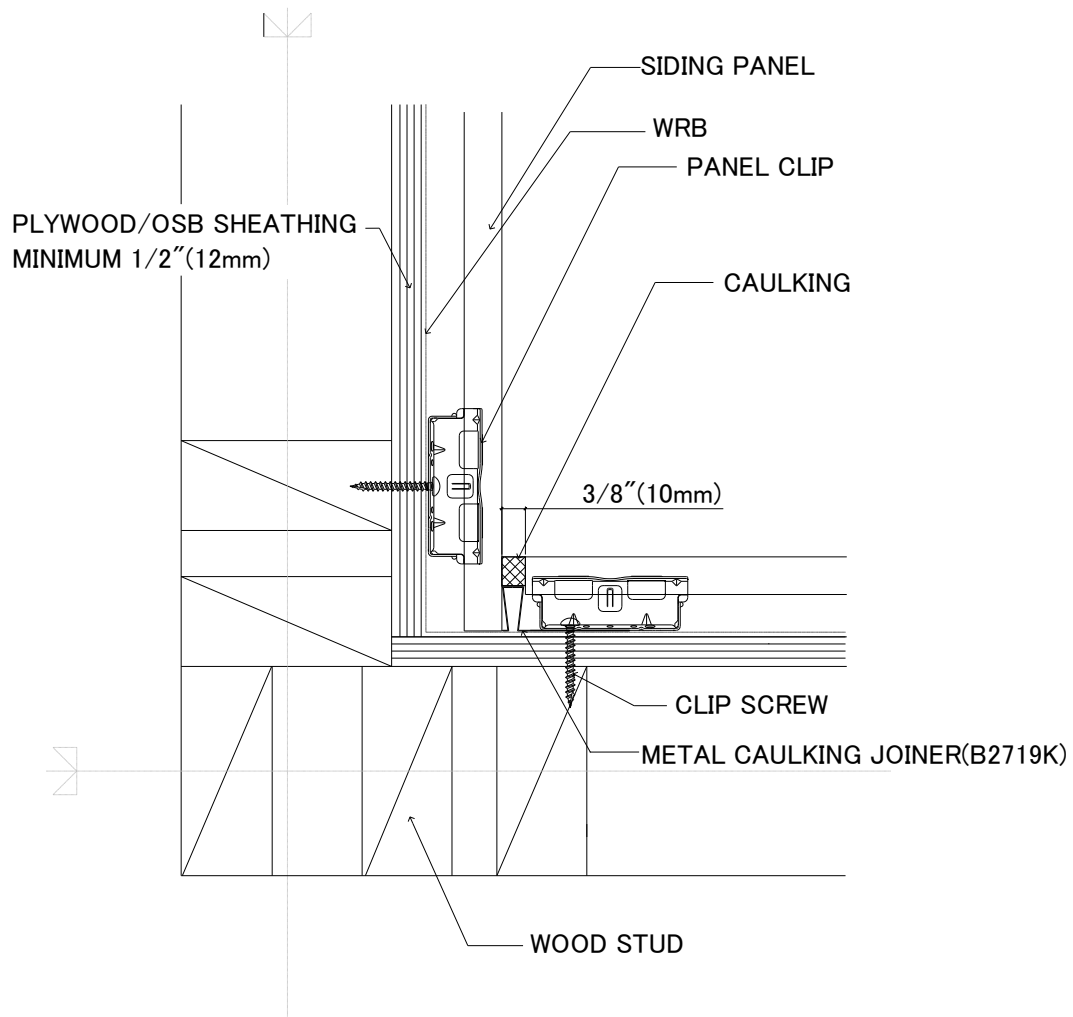


4. Wood Frame - Plywood Sheathing - Horizontal Application

<8> Install Inside Corners

▲ Install a metal caulking joiner to provide a profile for a sealant joint.

- Keep approx. 3/8" (10mm) space at the inside corner and apply caulking.



4. Wood Frame - Plywood Sheathing - Horizontal Application

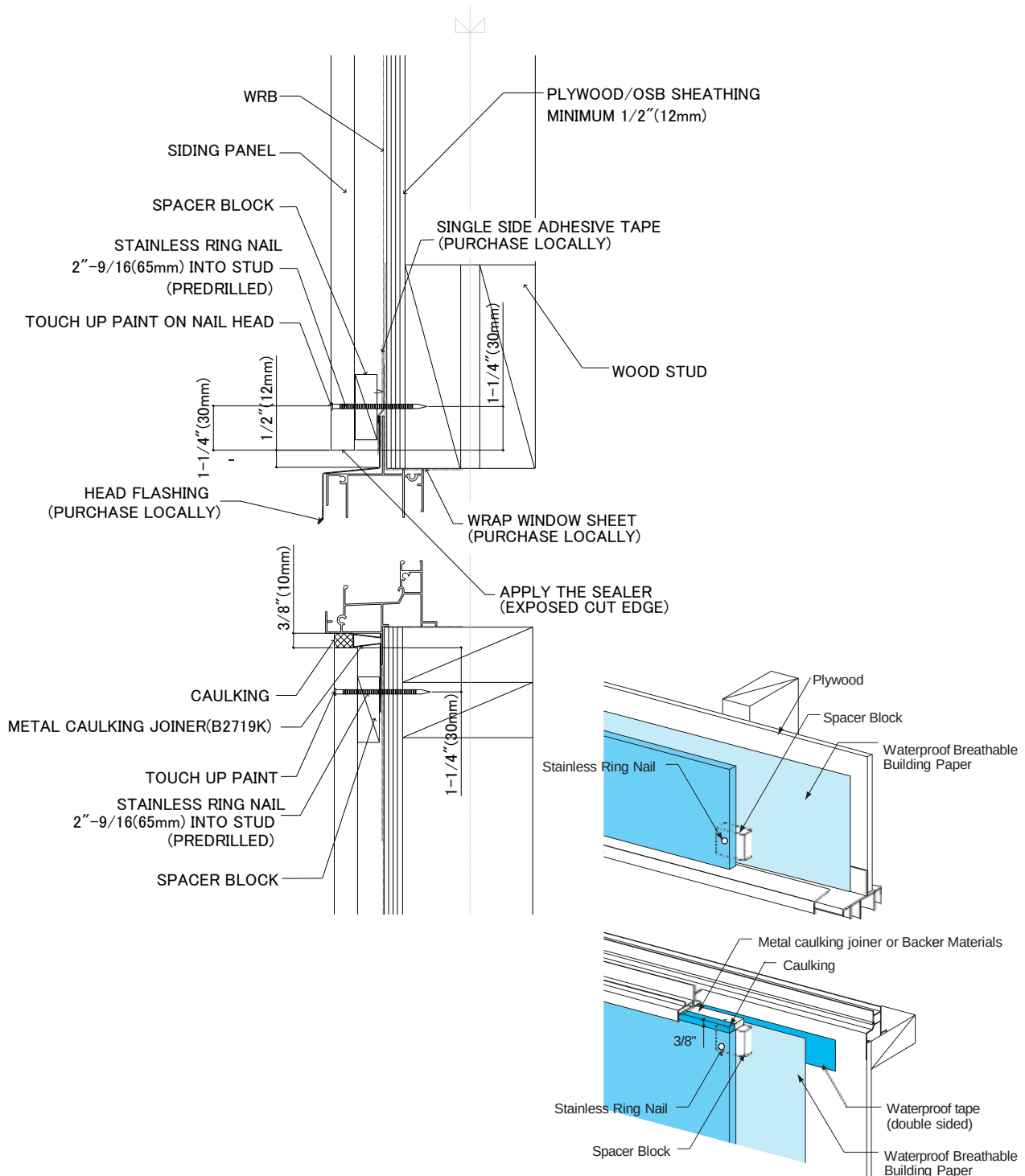
<9a> Openings (Above and Below)

- Unevenness caused by window flashing should be adjusted with shims or with furring strips.



- Use metal caulking joiners or backer rod to provide 3/8" joints between window frames and panels. Butt joints with a triangular bead of caulking can result in sealant failure.

- Install Spacer Blocks or pressure treated furring above and below openings, predrill pilot holes, and fasten the panels with ring nails at least 1-1/4" from the panel's edge. Predrill and nail panel edge every 16". Make sure to apply touch-up paint on the nail heads after installation.
- Place Metal Caulking Joiner or Backer material between the lower window frame and the siding panel for caulking.

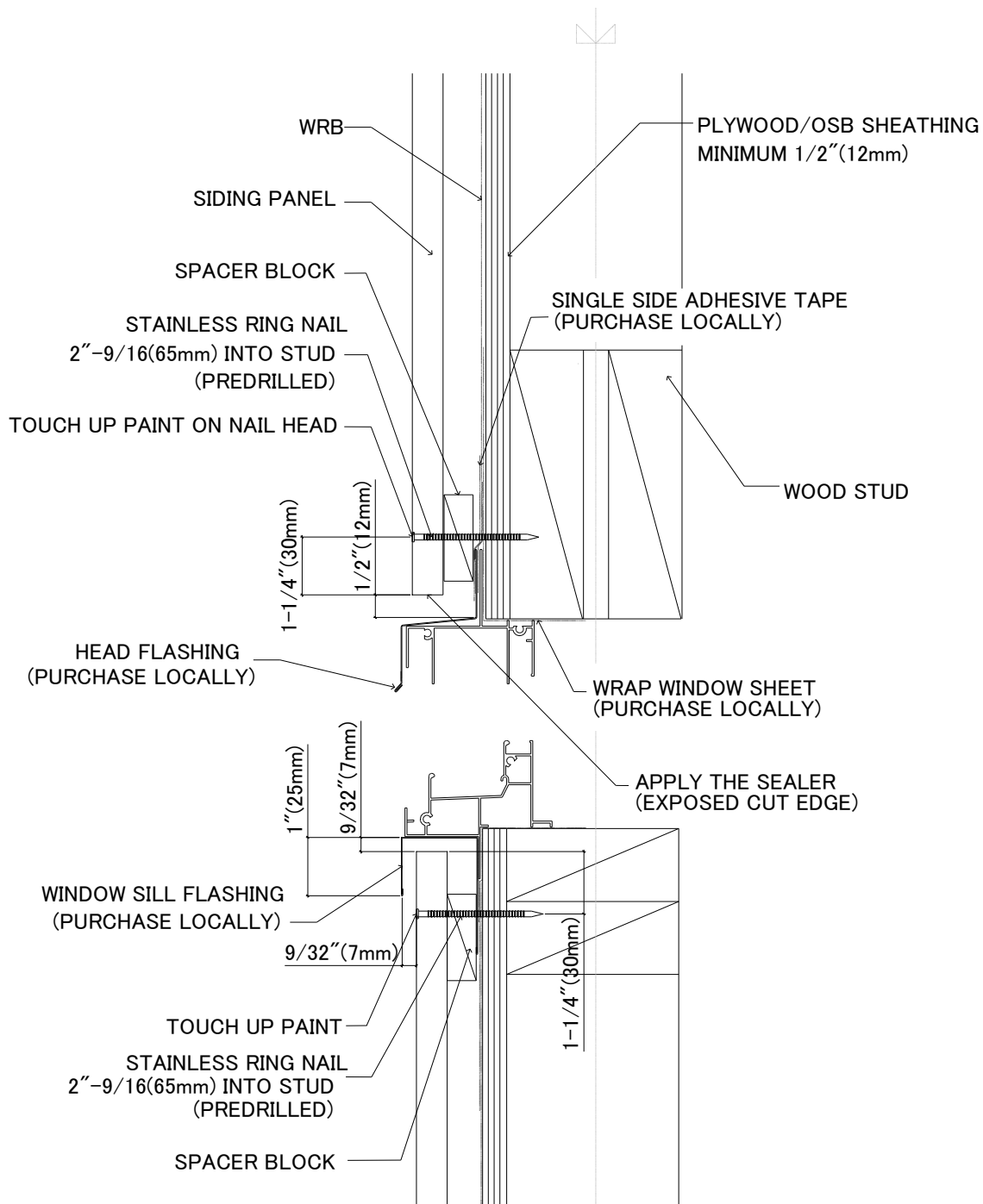


4. Wood Frame - Plywood Sheathing - Horizontal Application

<9a> Openings (Above and Below)

When finishing the below of openings with flashing

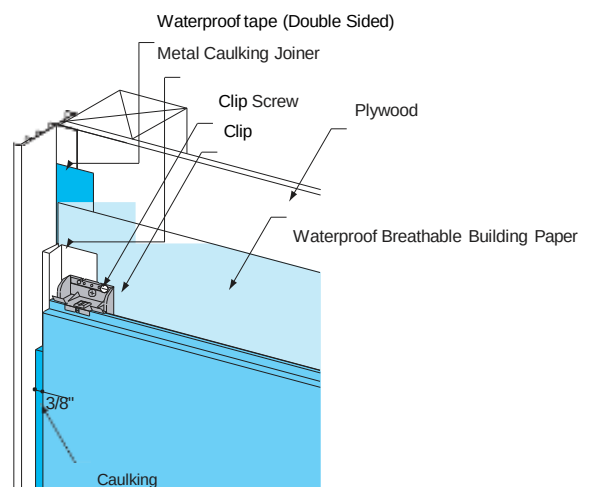
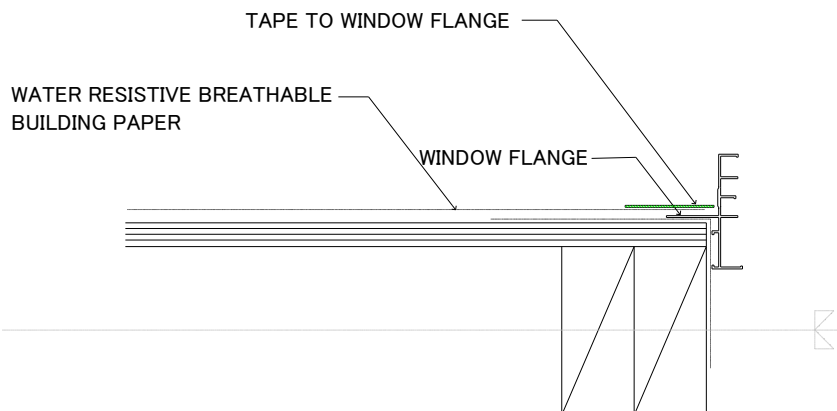
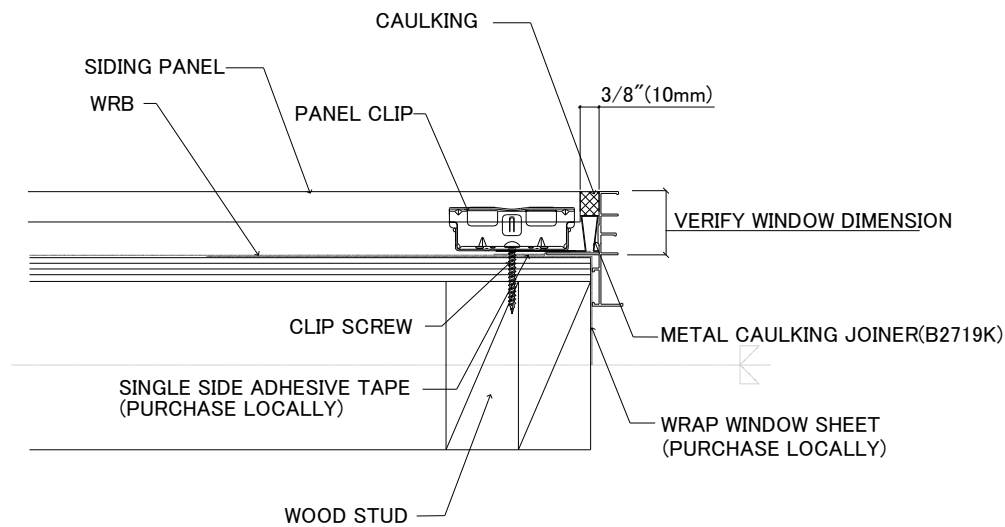
- Install Spacer Blocks or pressure treated furring above and below openings, predrill pilot holes, and fasten the panels with ring nails at least 1-1/4" from the panel's edge. Predrill and nail panel edge every 16". Make sure to apply touch-up paint on the nail heads after installation.
- Place Window Sill Flashing between the lower window frame and the siding panel.



4. Wood Frame - Plywood Sheathing - Horizontal Application

<9b> Openings (Sides/Jambs)

▲ Install a metal caulking joinder to provide a profile for a sealant joint and to prevent siding panel from moving horizontally.

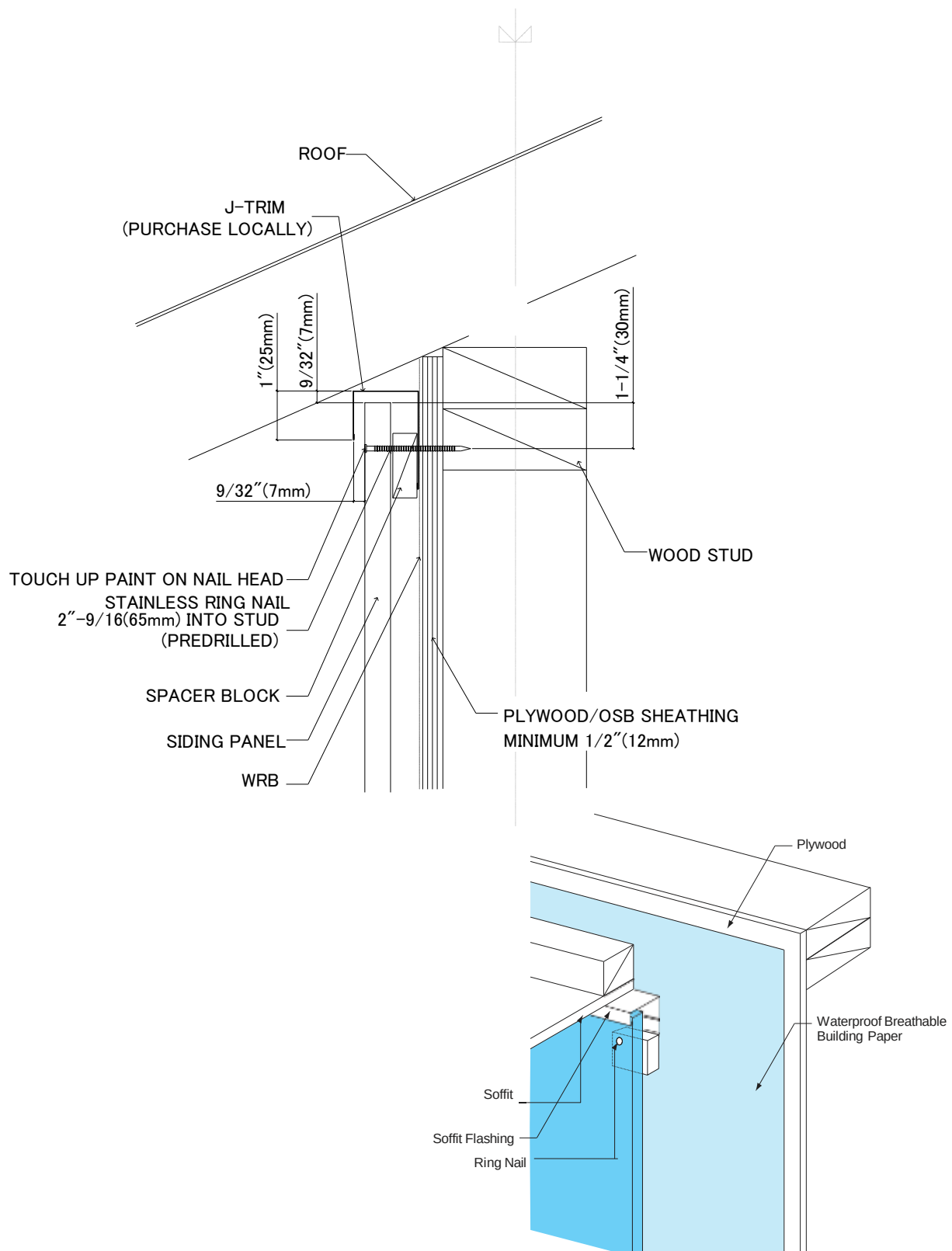


4. Wood Frame - Plywood Sheathing - Horizontal Application

<10> Top of Wall

- Install the panels so as to have $9/32$ " space between the soffit flashing and the panel as shown on the figure below.
- Install spacer blocks or pressure treated furring, predrill pilot holes at least $1-1/4$ " from the edge and fasten the panel with ring nails. Nail panel along the edge every 16".
- Make sure to apply the touch-up paint on the nail heads.

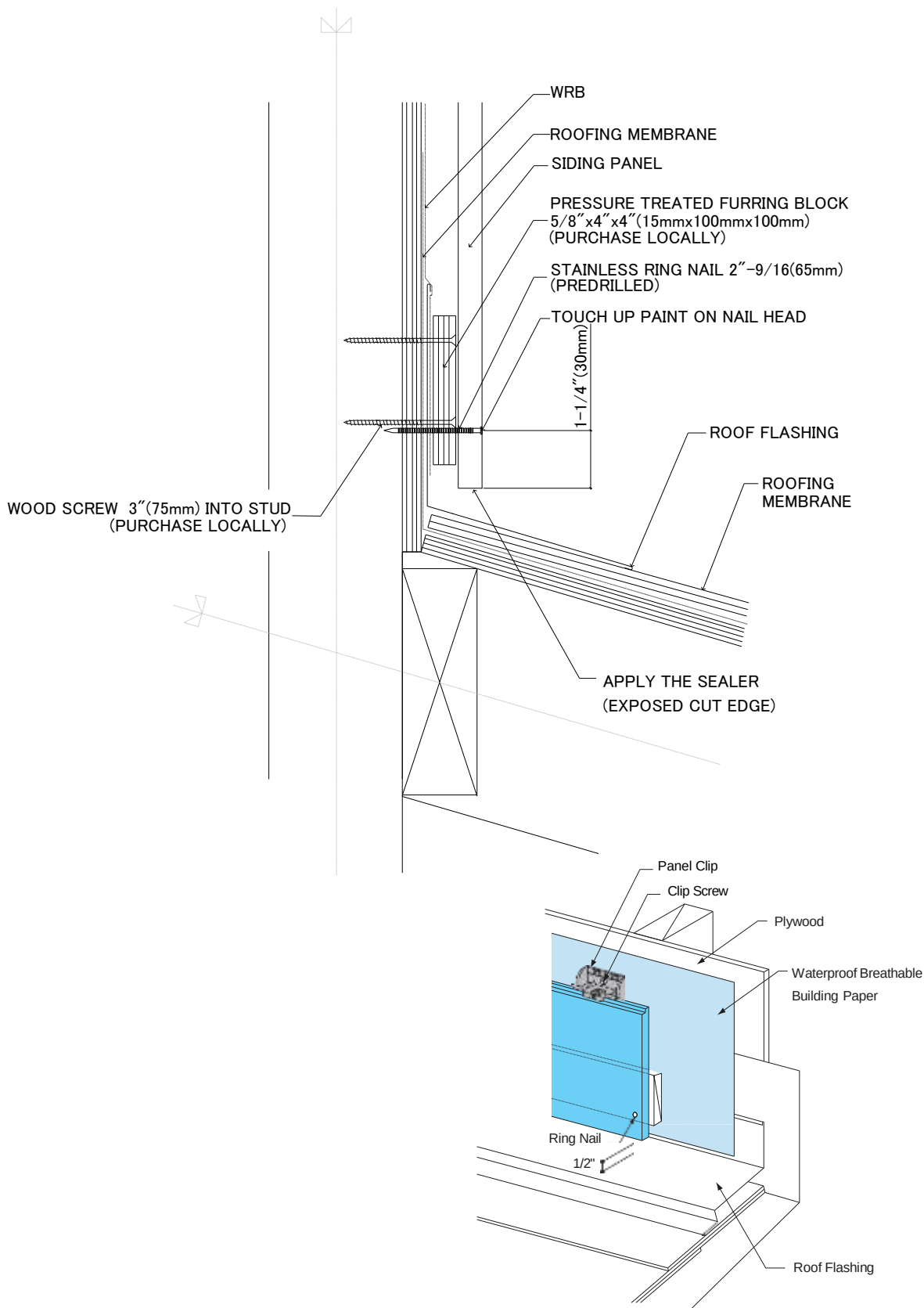
▲ **When soffit flashing is not feasible (for gable walls, etc.): Apply caulking between the top of the siding panels and the soffit so that the air coming through the air cavity is exhausted through the soffit or attic.**



4. Wood Frame - Plywood Sheathing - Horizontal Application

<11a> Intersection with Roof (Ridge Side)

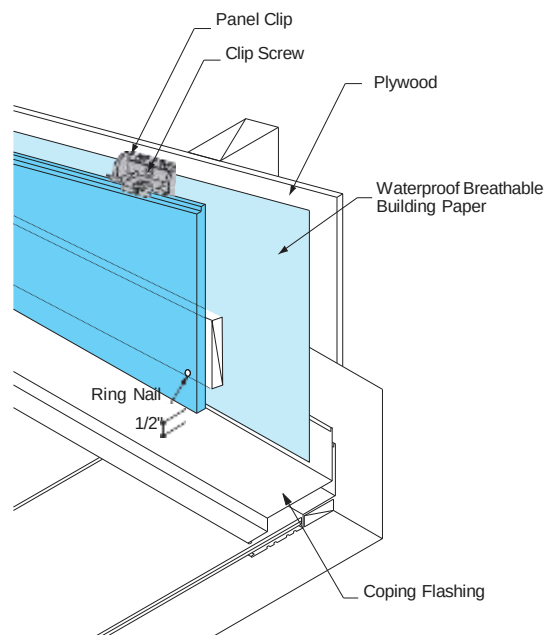
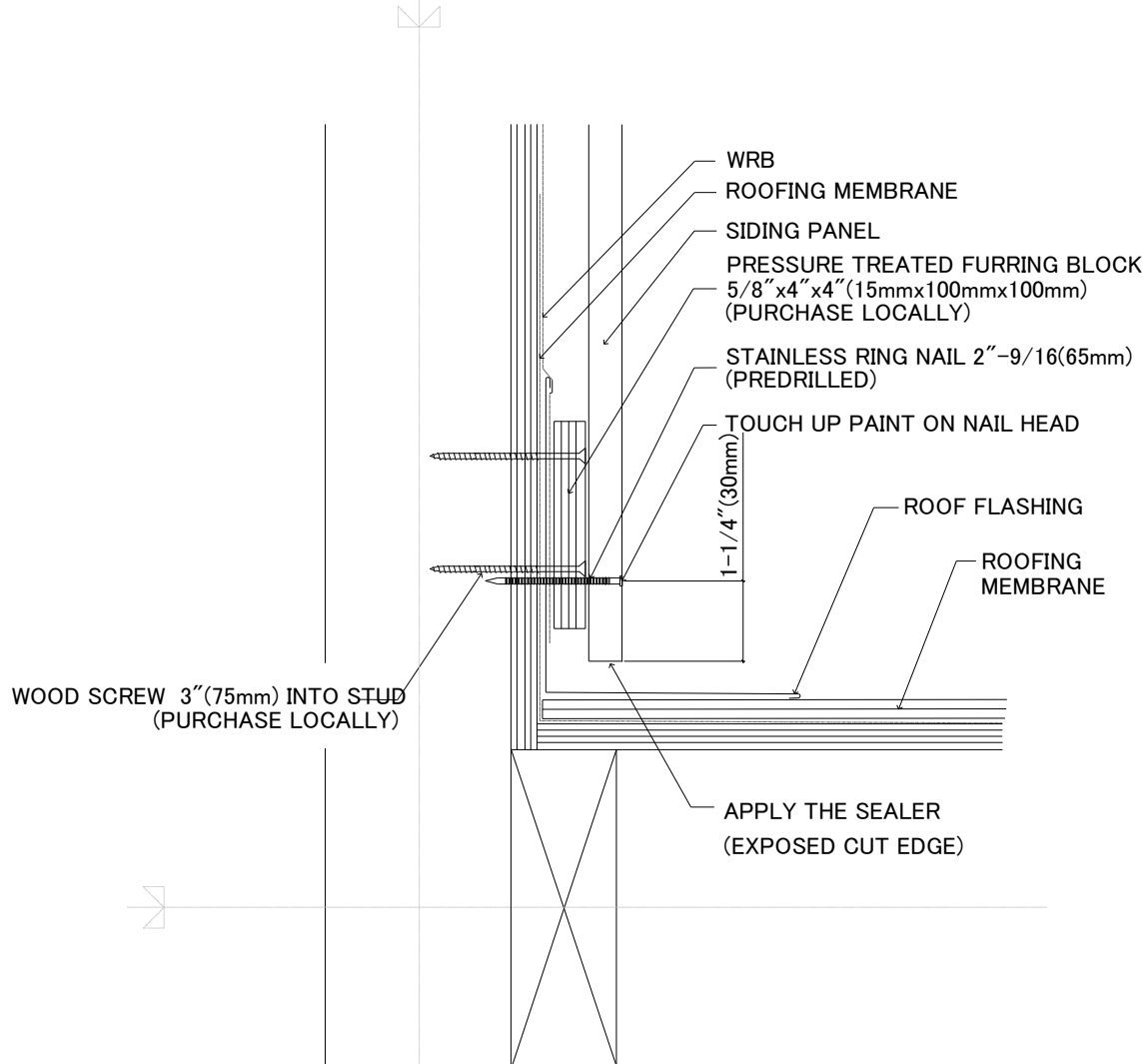
- Keep 1/2" of space between the roof flashings and siding panels for ventilation of the rain screen system.
- If using furring strips instead of blocks, make a 1-1/4" gap every 6' on the pressure treated furring strips for air circulation.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with waterproof building paper (see detail).C



4. Wood Frame - Plywood Sheathing - Horizontal Application

<11b> Intersection with Roof (Slope Side)

- Keep 1/2" of space between the roof flashings and siding panels for ventilation of the rain screen system.
- If using furring strips instead of blocks, make a 1-1/4" gap every 6' on the pressure treated furring strips for air circulation.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with waterproof building paper (see detail).C



5. Wood Frame – Plywood Sheathing – Vertical Application

<1> Siding Panel Installation Accessories

<2> Installation Overview

<3> Starter Bar Installation

<4> Install Panel Clips

<5> Through Wall Flashing

<6> Install Outside Corner (Preformed)

Install Outside Corner (Metal)

<7> Install Inside Corners

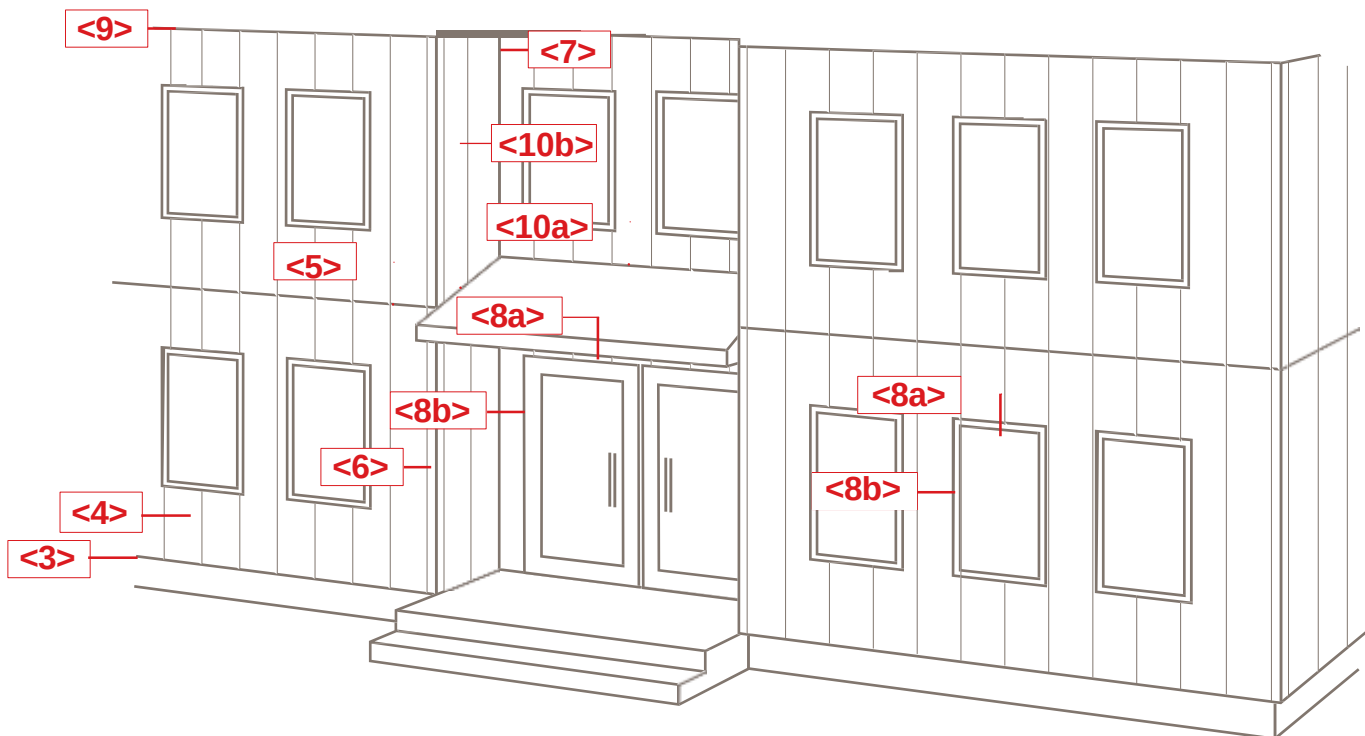
<8a> Openings (Above and Below)

<8b> Openings (Sides/Jambs)

<9> Top of Wall

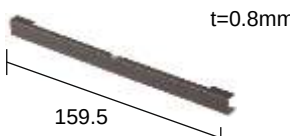
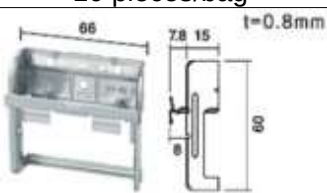
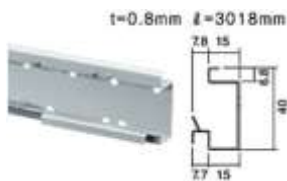
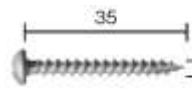
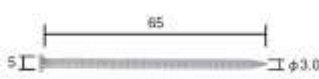
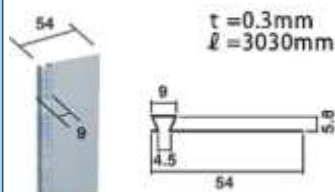
<10a> Intersection With Roof (Ridge Side)

<10b> Intersection With Roof (Slope Side)



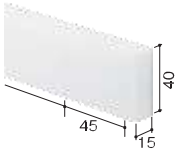
5. Wood Frame – Plywood Sheathing – Vertical Application

<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Starter bar for vertical Application (B10157HG)	 t=0.8mm L=3030mm 35.6 36	Hot-dip zinc/aluminum coated steel with a polyester paint finish	Serve as a support for the first panels in the case of vertical installation. Applied on the sill of the building before the installation of the panel.
	5 pieces/box		
Cap vertical application starter bar, used for outside corner (B291W1D)	 t=0.8mm 159.5	Coated galvanized steel (Zn, Al)	Attaches to a vertical application starter bar
	10 pieces/bag		
Panel clip (B10115)	 t=0.8mm 66 7.8 15 10	Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the panel to a wood substructure
	30 pieces/bag		
Long clip (B10155)	 t=0.8mm L=3018mm 7.8 15 10	Hot-dip zinc-aluminum-magnesium alloy coated steel	It is used for fastening the panel to a wood substructure at increased wind loads
	6 pieces/box		
Clip screw 35 for wood substructure (B881135)	 35 4.1	Stainless steel	Used for attaching clips to a wood substructure
	500 pieces/box		
Face nail 65 for wood substructure (B8765R400)	 65 3.0	Stainless steel	It is used to fasten the panel in places where the use of clips is impossible or necessary to strengthen the fastening
	40 pieces/bag		
Metal Caulking Joiner One-side (B2719K)	 t=0.3mm L=3030mm 54 9 4.5 54	Zinc/aluminum coated steel	It is applied on the outside and inside corners, between the opening flashing and the panels
	15 pieces/box		

5. Wood Frame – Plywood Sheathing – Vertical Application

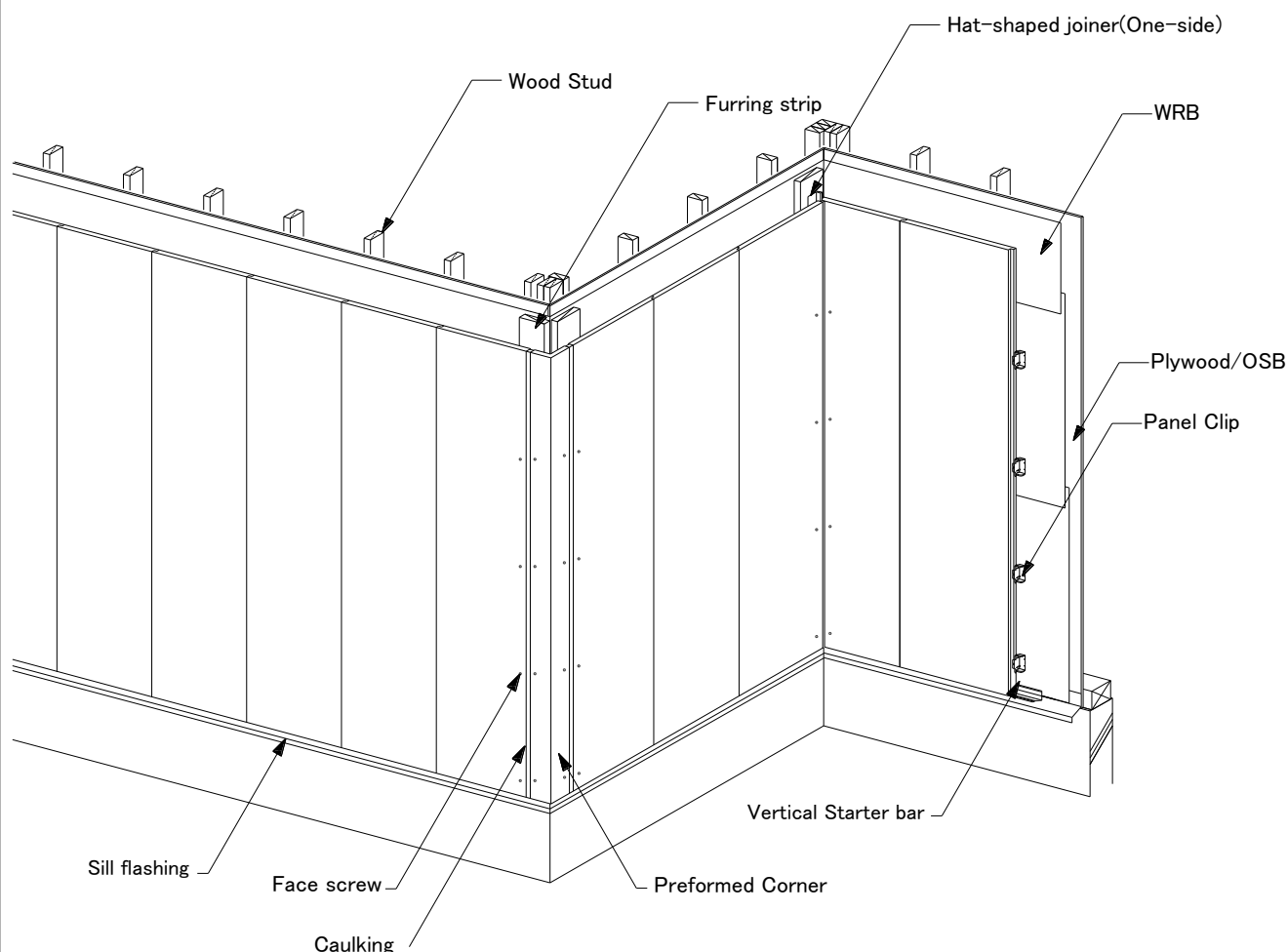
<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Spacer 15 (RY82S15)		Polypropylene	Used as backing for face fastener locations to eliminate deflection of the panel.
	22 blocks/strip 6 strips/box		
Water proof sealer (LTKMB3103C)		Silane water repellent	It is applied on the cut edges
	1 piece		
Repair putty (B4901)		Acrylic emulsion	It is used for scratches, chips and holes from face screws.
	1 piece		
Repair paint (Different for each SKU)		—	It is used on spots where putty is applied and scratches.
	1 set/box		

5. Wood Frame – Plywood Sheathing – Vertical Application

<2> > Installation Overview

- Install starter bars at the base of each wall.
- Install starter bars so as to hold both siding panels and pre-formed corners.
- Install siding panels with panel clips.
- Clips have several holes for screws. Fasten clips with one screw when fastening to a stud; use two screws when fastening only to sheathing.
- In any situation where the panel's shiplapped edges have been removed, such as the end of the wall, clips cannot be used. Install spacer blocks, predrill holes and nail with ring nails at least 1-1/4" from the panel edges at 16" on center. Make sure to apply touch-up paint on the nail heads after installation.



- Install siding panels so as not to allow gaps between them.

Precautions For Vertical Installation:

Follow these important guidelines:

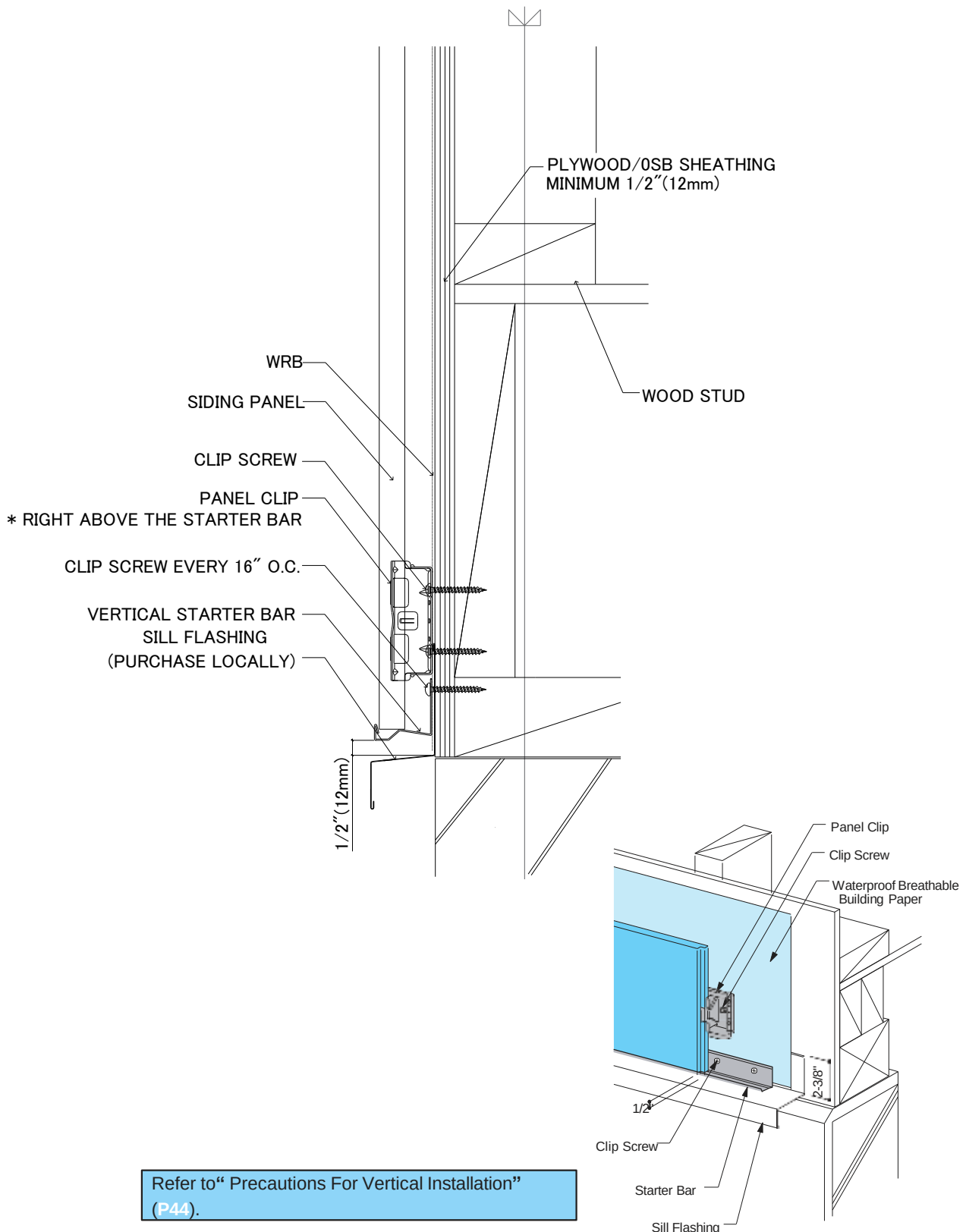
1. Make sure to use starter bars to fully support the siding panels and ensure that the starter bars are fastened onto the structural framing.
 2. The lowest Panel Clip installed on each vertical siding panel must be secured as close to the starter bar as possible, at least within 3".
 3. The highest Panel Clip installed on each vertical siding panel must be secured as close to the top of the panel as possible, at least within 3".
- * If it is not possible to install a Panel Clip within 3" of the top or bottom of each panel, install two spacer blocks and ring nails instead.

5. Wood Frame – Plywood Sheathing – Vertical Application

<3> > Starter Bar Installation

- Ensure that the starter bars are level.
- Attach the starter bar to the structure with screws at 16" on center, attached to studs when possible.
- Fasten the first clip right above the starter, (no more than 3" above).
- To fit the preformed corners, use the corner tool included with the starter bars. See the photos on the following page for instructions.

▲ Ensure the panels are level at each row.



5. Wood Frame – Plywood Sheathing – Vertical Application

<3> > Starter Bar Installation

- (1) Take out the corner tool from the package. One corner tool is packaged together with five starter bars.



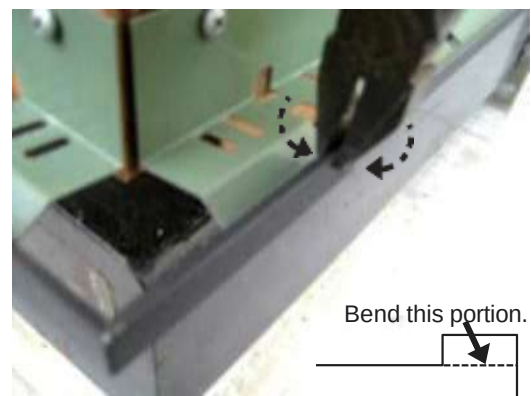
- (2) Bend the corner part at its center.



- (3) Install the bent corner tool onto the corner of the two already installed starter bars, as shown.



- (4) Using pliers, very carefully bend the top lip of the corner tool.



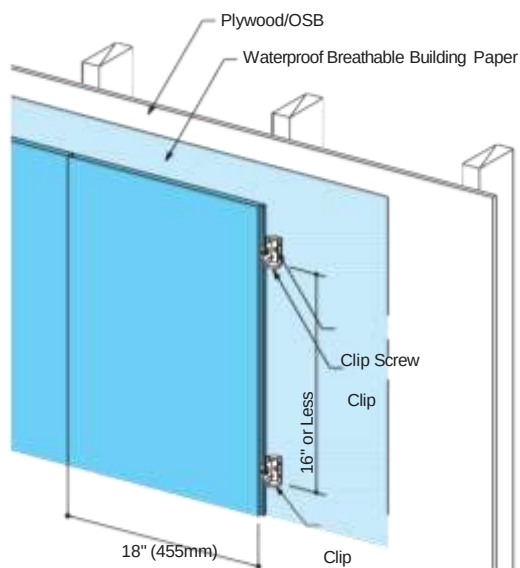
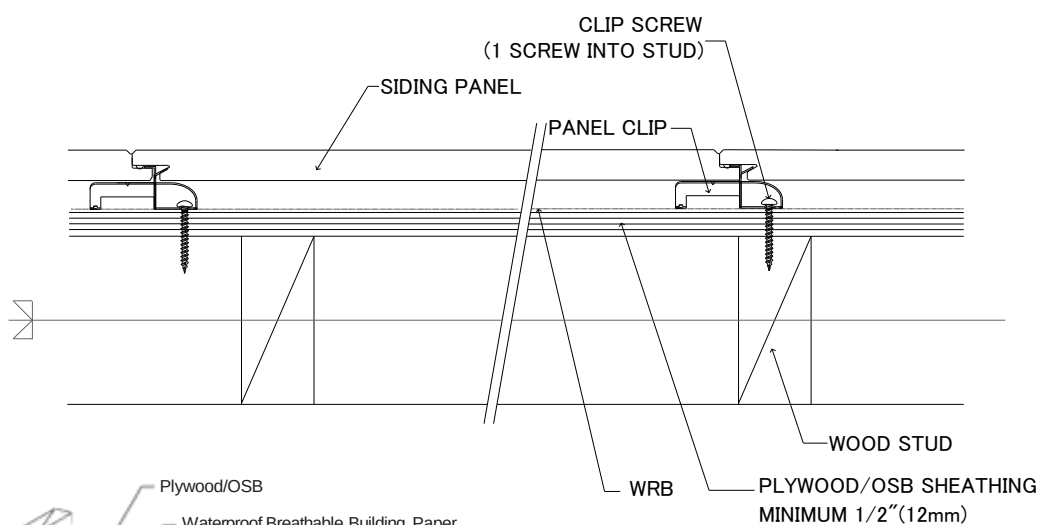
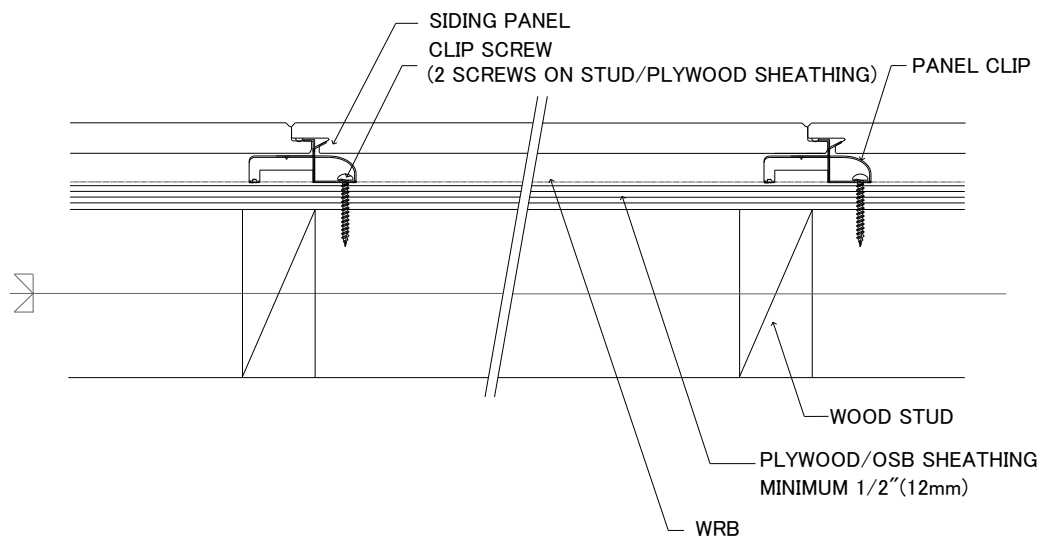
- (5) The finished preformed corner tool should look like this:



5. Wood Frame – Plywood Sheathing – Vertical Application

<4> > Install Panel Clips

- Fasten a **Panel Clip** securely with **1 screw onto a stud** or with **2 screws when fastening to sheathing only** at least every 16", going vertically up the panel joint.
- If using one screw, use the center hole. If using two screws, use the left and right holes.
- Place a clip within 3" of the top of each panel.

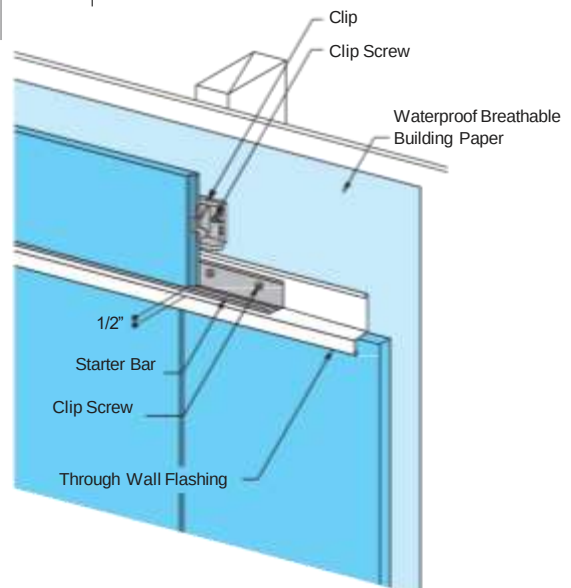
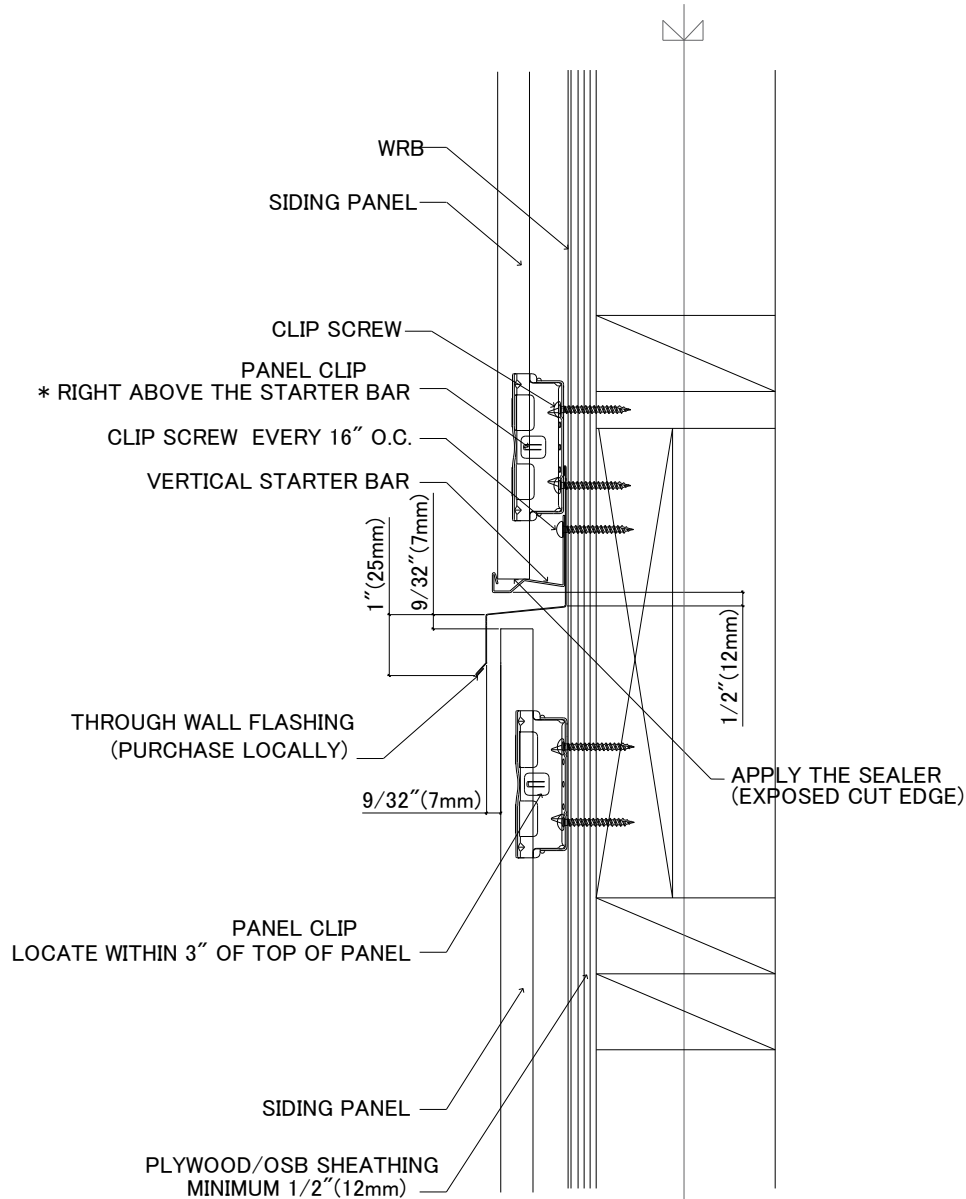


5. Wood Frame – Plywood Sheathing – Vertical Application

<5> Through Wall Flashing

Refer to “Precautions For Vertical Installations”(P44).

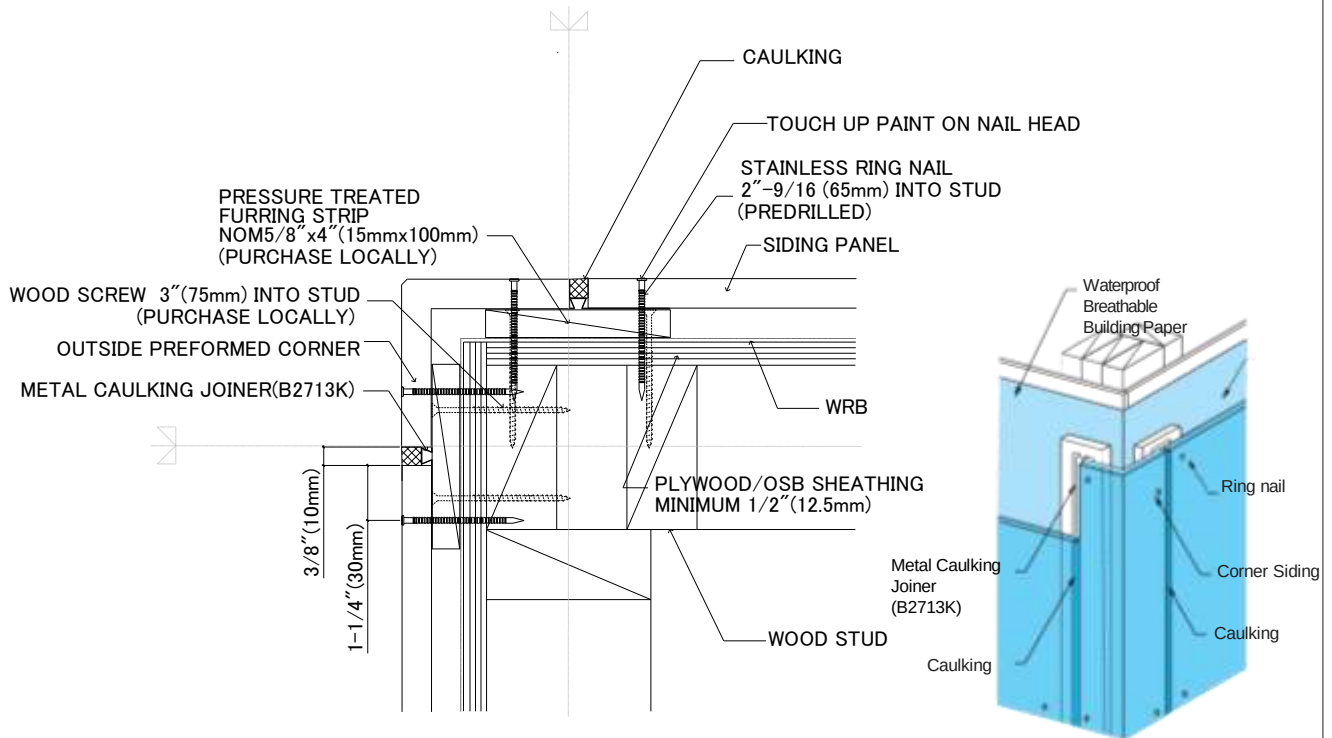
- Install Panel Clip within 3” of the top of each panel.
- Keep 7mm (9/32”) space between the upper edge of panel and flashings and install the through wall flashings.



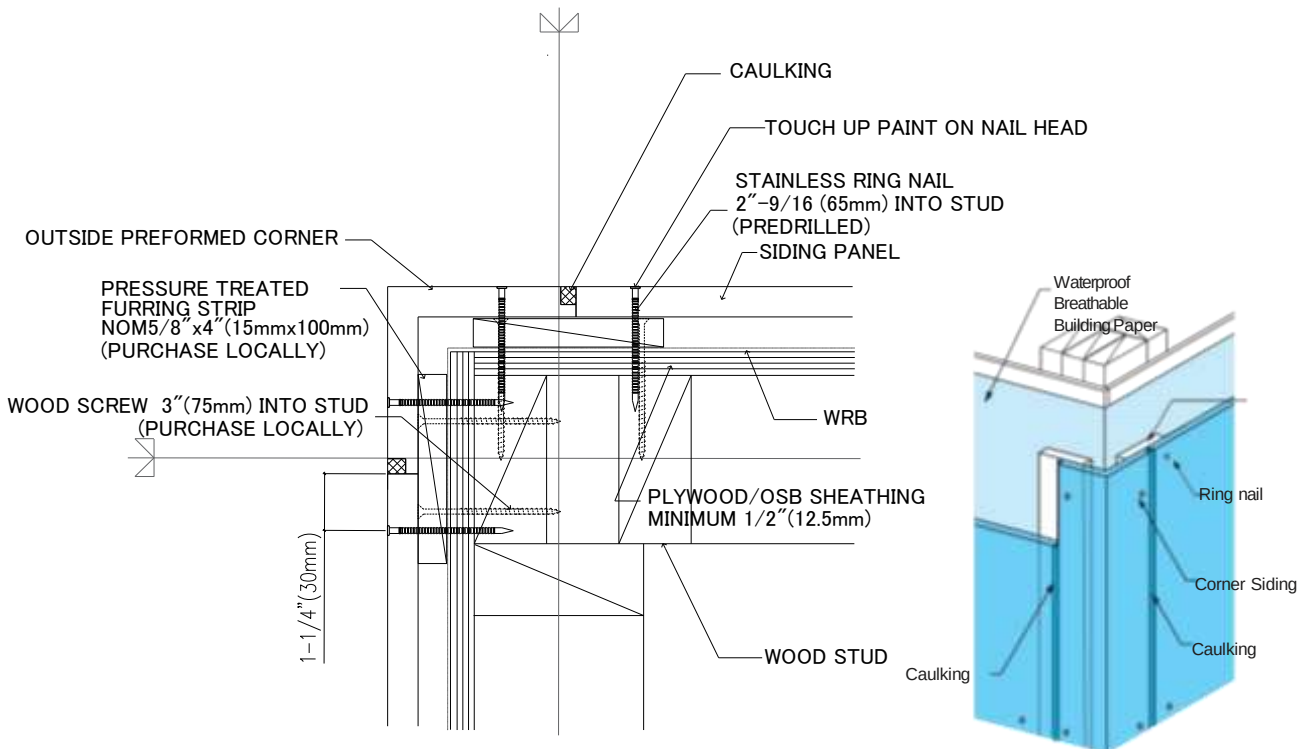
5. Wood Frame – Plywood Sheathing – Vertical Application

<6> Install Outside Corner (Preformed)

- Panel clips cannot be used for the siding panels adjacent to the outside corners because the shiplapped edges must be removed when cutting the panels to size.
- Install Pressure Treated Furring Strips, predrill pilot holes and nail at least 1-1/4" from any panel edges. Nail spacing is as follows:
 - ① Edge of panel adjacent to outside corner: 16" on center.
 - ② Corner Siding : (a) 20" or less for parallel installation on both sides, (b) 12" or less for staggered installation on both sides.
- Apply touch-up paint on the nail heads.
- Install starter bars so as to hold both siding and pre-formed corners.



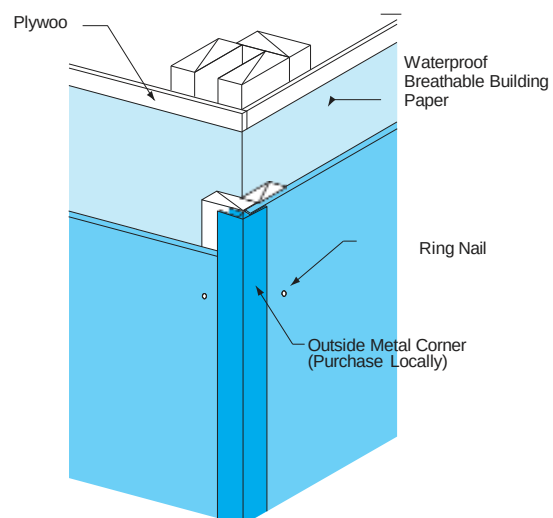
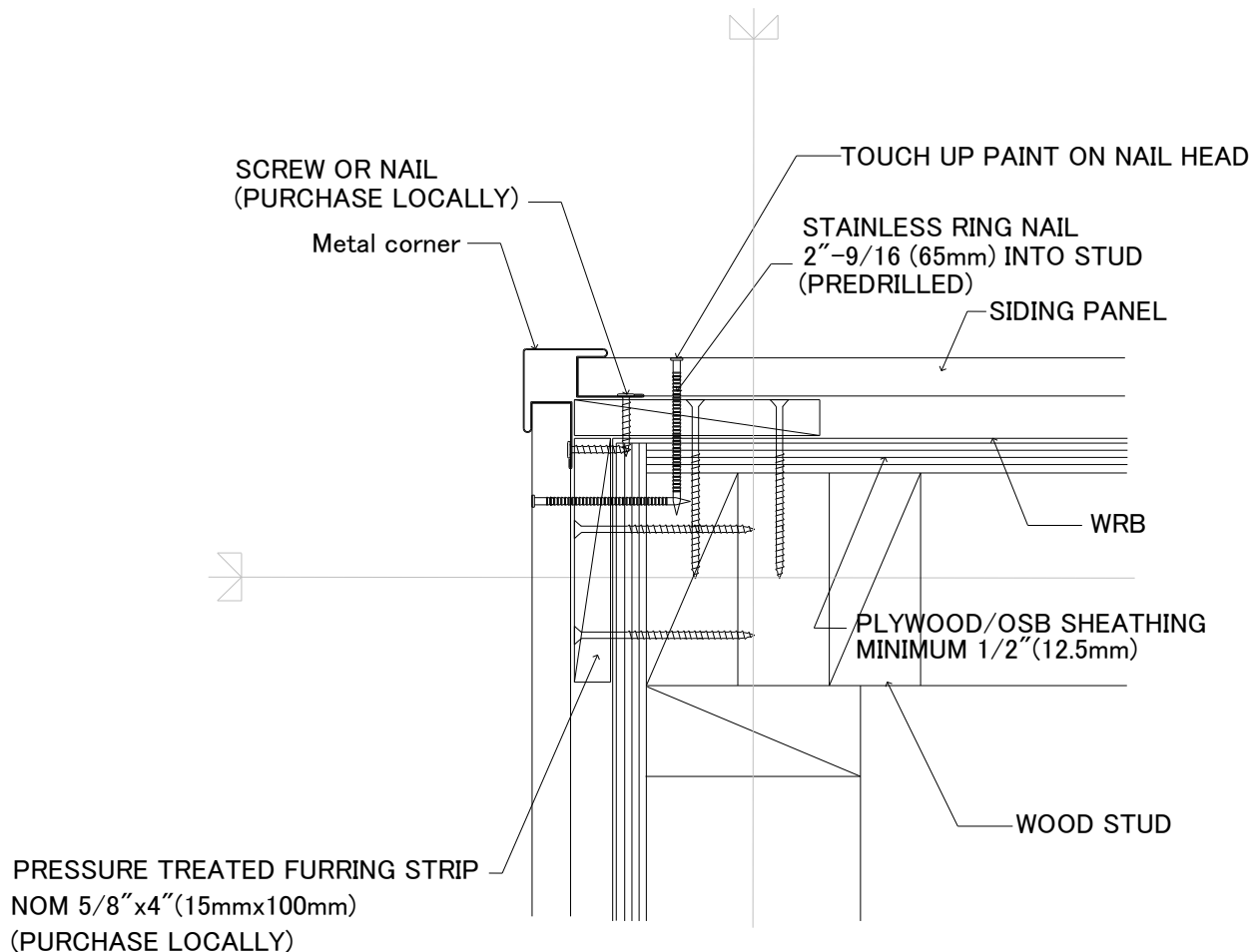
- Pre-formed corners on some products do not need to be used with Metal Caulking Joiners because these textures have bottom shiplapped edges.



5. Wood Frame – Plywood Sheathing – Vertical Application

<6> Install Outside Corner (Metal)

- Install vertical furring strips (pressure treated) behind both sides of the outside corner.
- Install metal outside corners on the furring strips.
- Install the metal outside corners so as to have approximately 1/2" of space between the sill flashings and the corners.
- Metal outside corners should cover the cut edges of the panels by at least 3/8".

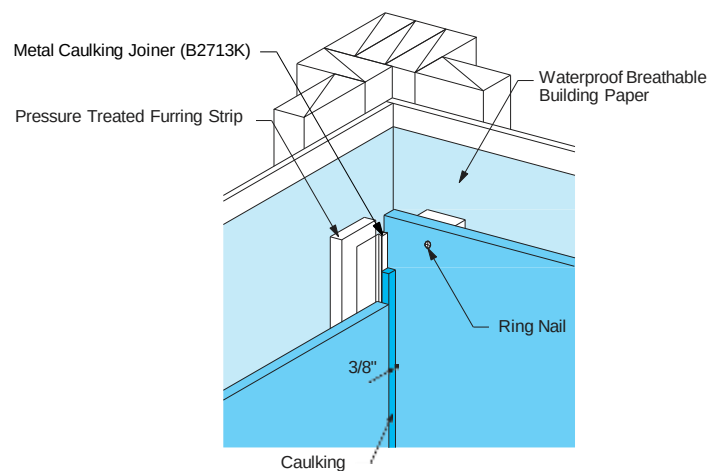
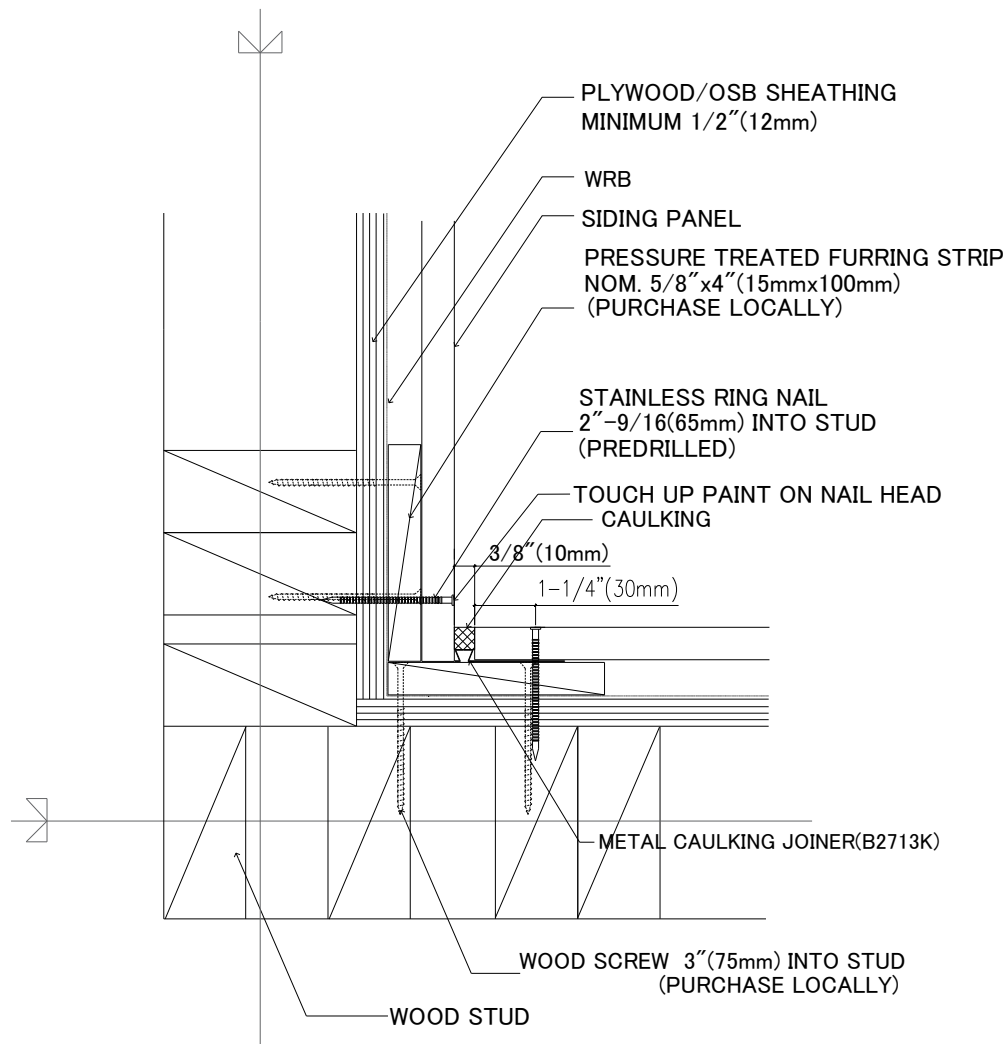


5. Wood Frame – Plywood Sheathing – Vertical Application

<7> Install Inside Corner

 **Make sure to remove the shiplapped edges of siding panels.**

- Use pressure treated furring, predrill pilot holes and nail the siding with ring nails.
- Nail the panels at least 1-1/4" from any panel edge at 16" on center. Make sure to apply touch up paint after installation.
- The joiner will provide approximately 3/8" of space for caulking.



5. Wood Frame – Plywood Sheathing – Vertical Application

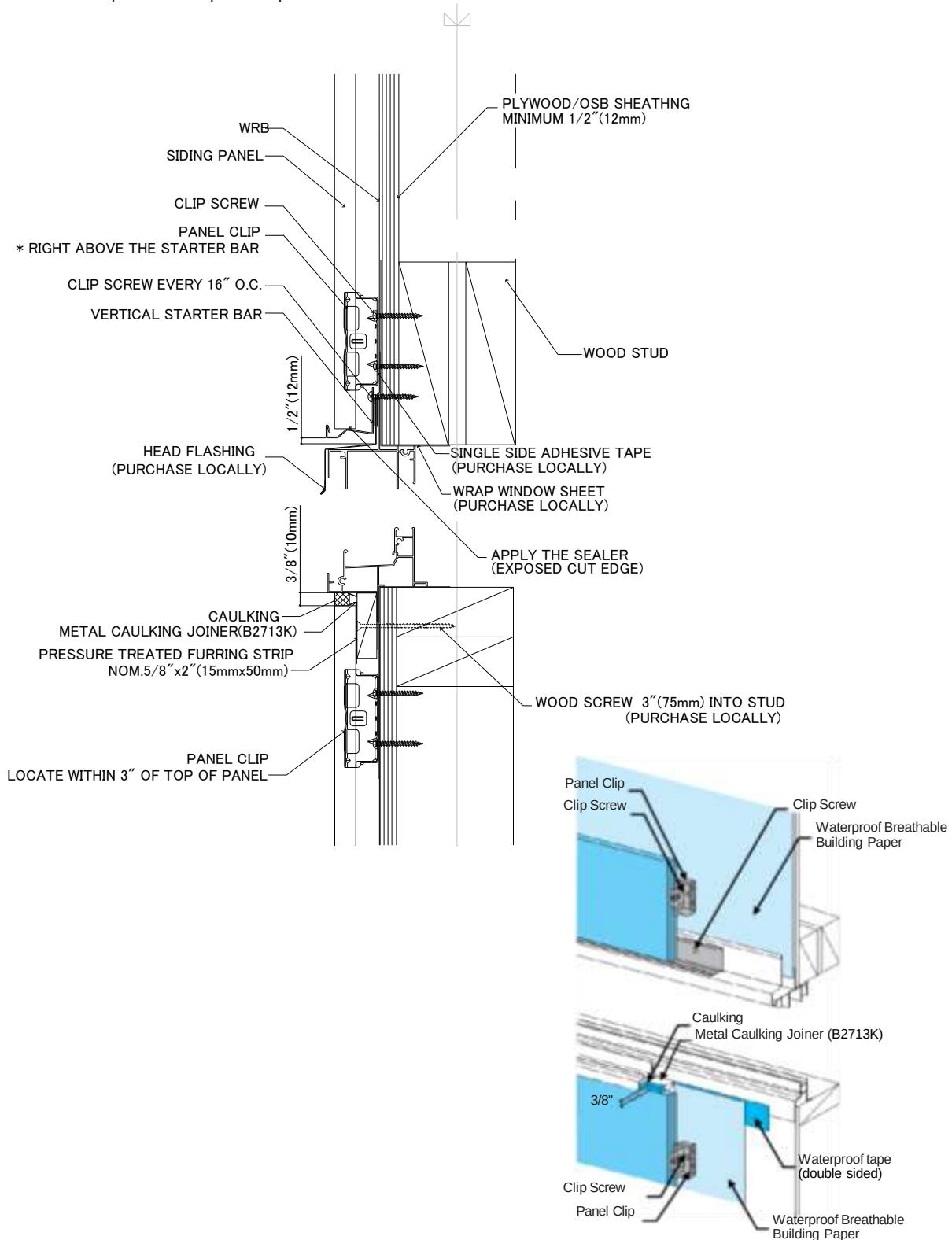
<8a> Openings (Above and Below)

Refer to “Precautions for Vertical Installation” (P44).



Use metal caulking joiners or backer rod to provide 3/8" joints between window frames and panels. Butt joints with a triangular bead of caulking can result in sealant failure.

- Install the starter bars above the openings using clip screws at 16" on center.
- Fasten the panels with panel clips.

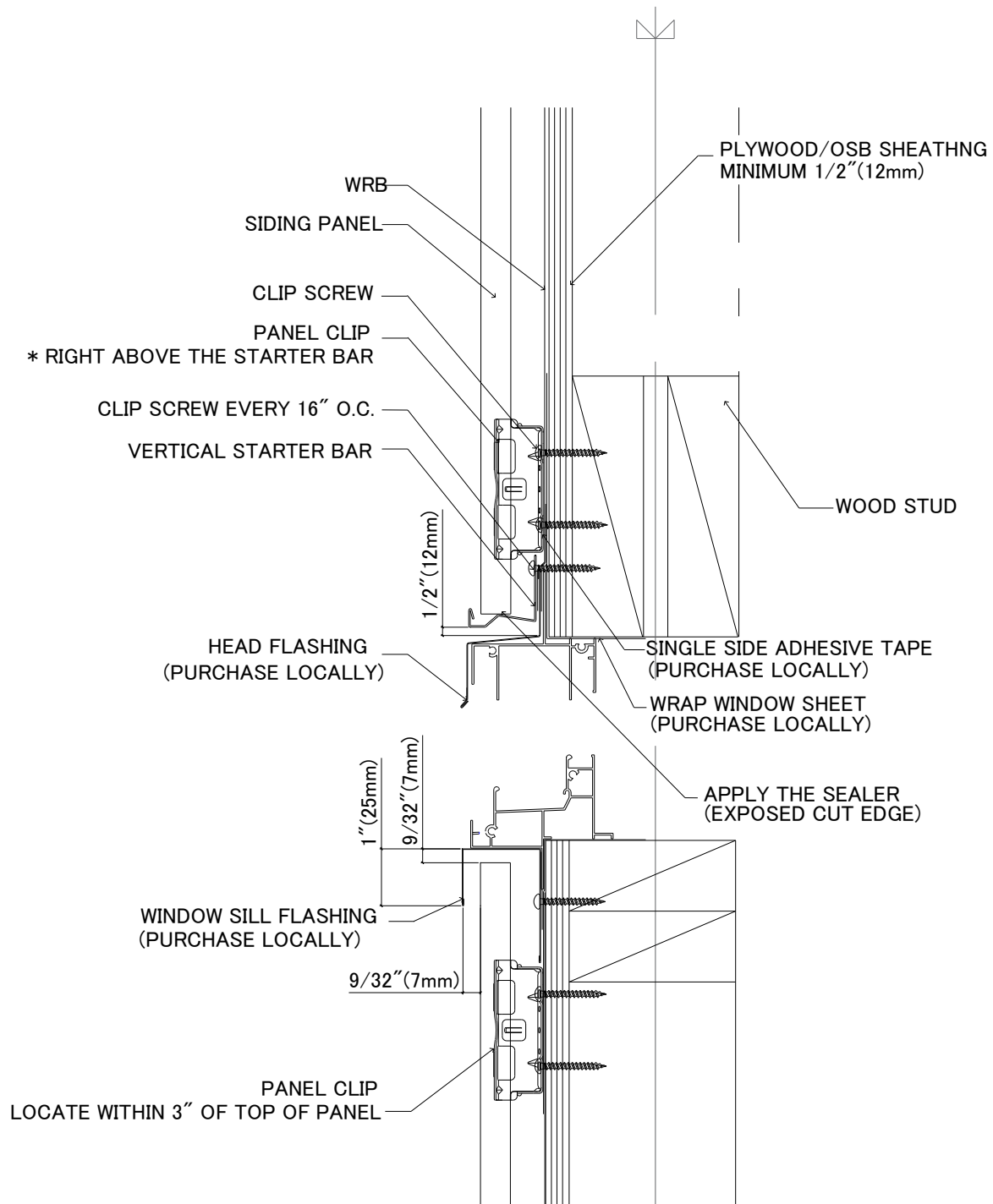


5. Wood Frame – Plywood Sheathing – Vertical Application

<8a> Openings (Above and Below)

When finishing the below of openings with flashing

- Install the starter bars above the openings using clip screws at 16" on center.
- Fasten the panels with panel clips.

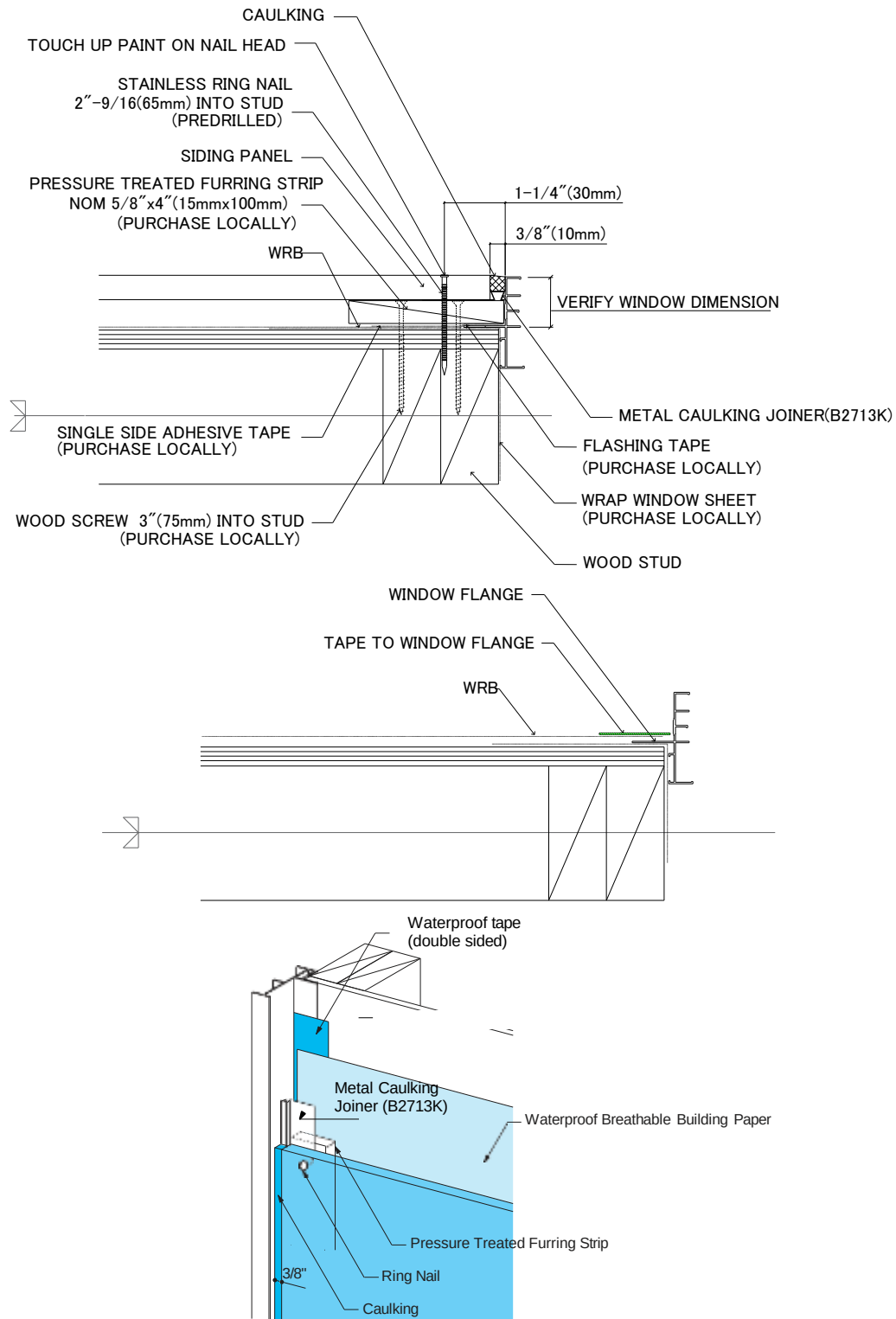


5. Wood Frame – Plywood Sheathing – Vertical Application

<8b> Openings (Sides/Jambs)

- Install a metal caulking joiner to provide a profile for a sealant joint.
- Use pressure treated furring strips, predrill holes, and nail at least 1-1/4" from any panel edges at 16" on center.
- Make sure to apply touch-up paint to the nail heads after installation.

 **Make sure to remove the shiplapped edges of the panel.**

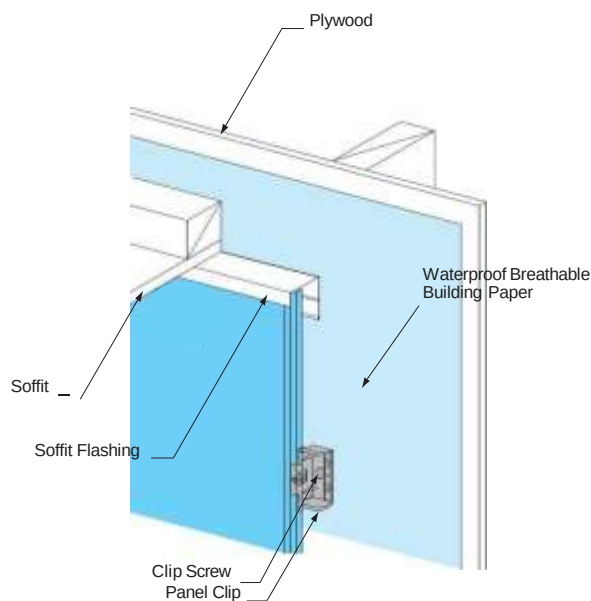
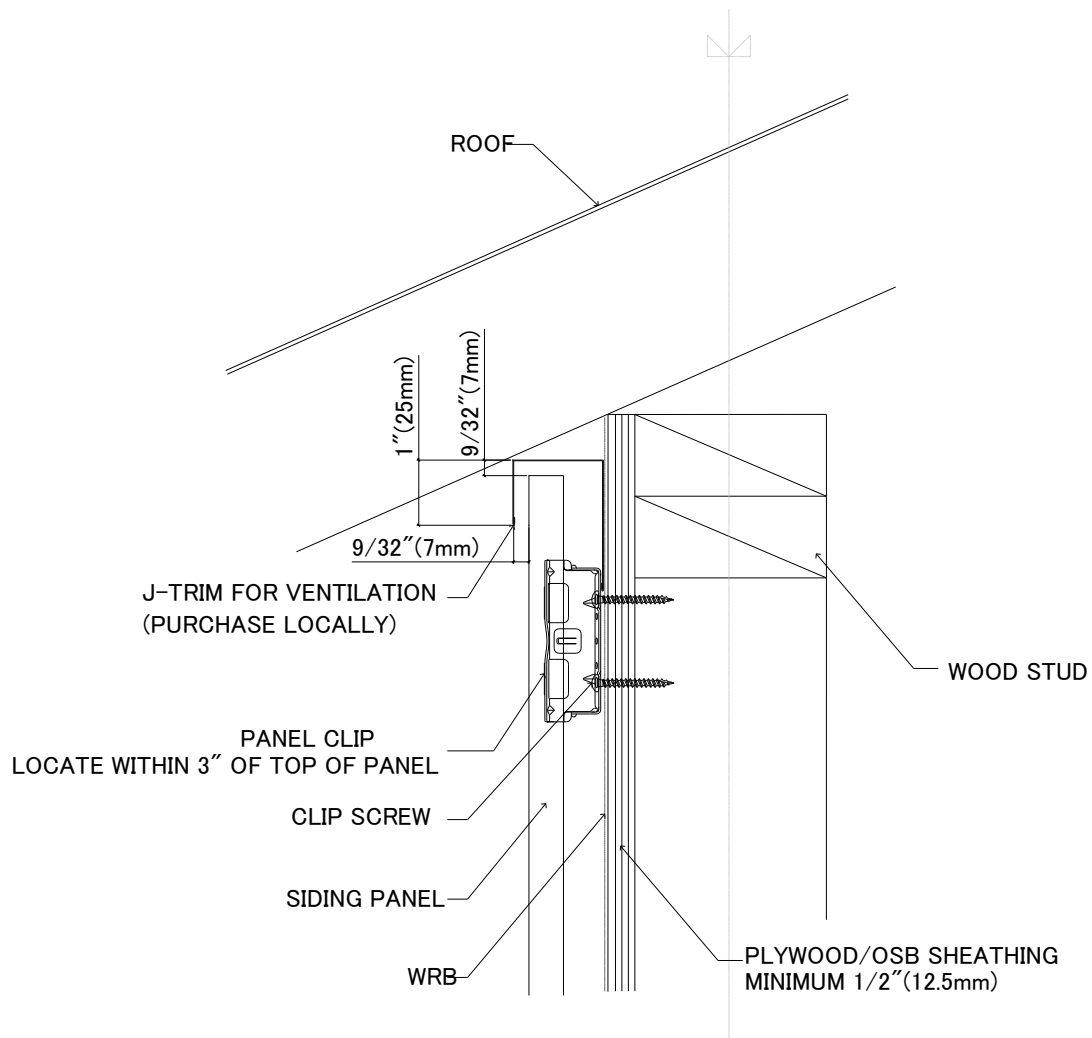


5. Wood Frame – Plywood Sheathing – Vertical Application

<9> Top of Wall

- Install the panels so as to have 9/32" space between the soffit flashing and the panel as shown on the figure below.
- Install top panel clip within 3" of the top of each panel.

 **When soffit flashing is not feasible (for gable walls, etc.): Apply caulking between the top of the siding panels and the soffit so that the air coming through the air cavity is exhausted through the soffit or attic.**

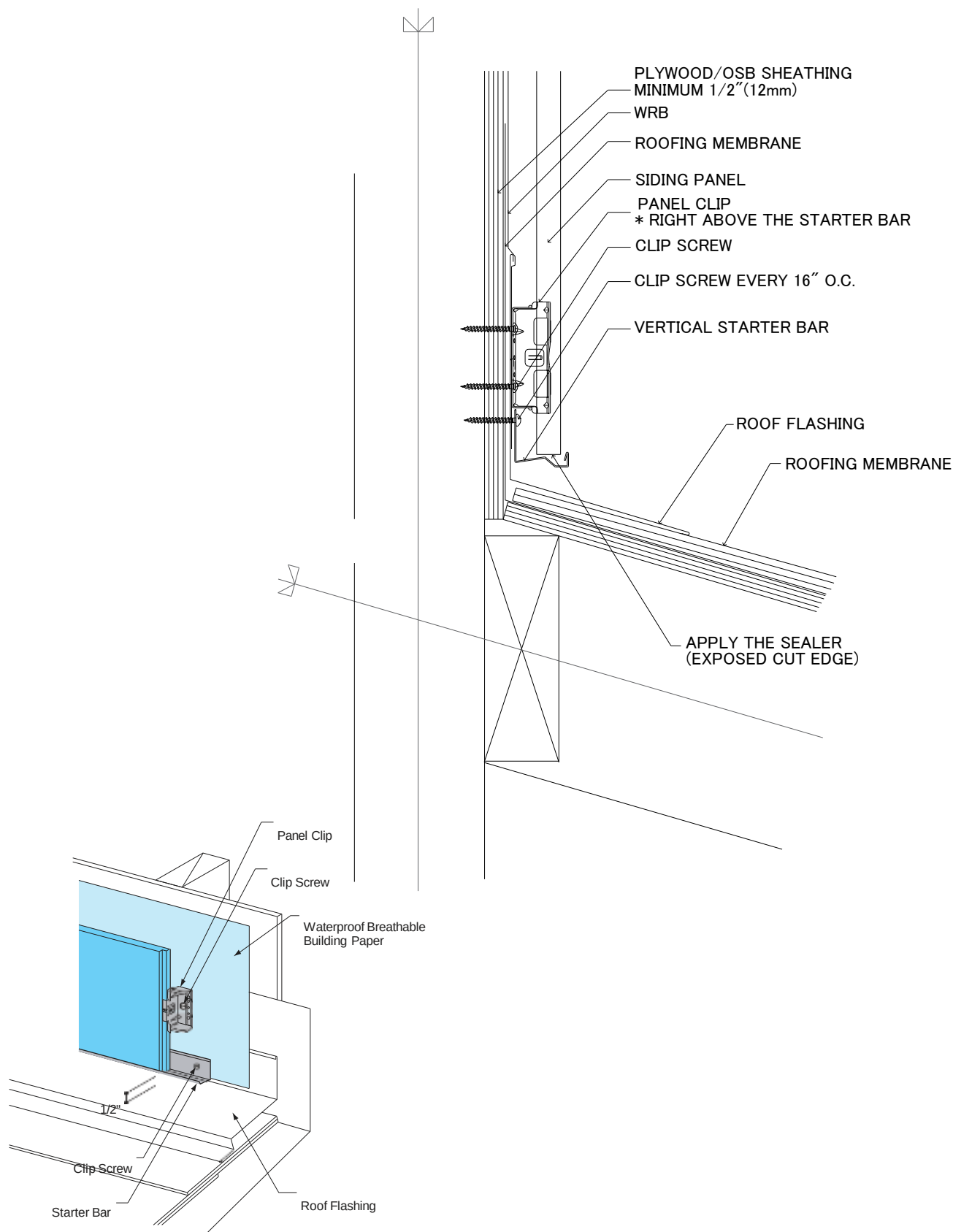


5. Wood Frame – Plywood Sheathing – Vertical Application

<10a> Intersection With Roof (Ridge Side)

- Keep 1/2" space between the roof flashings and siding panels for ventilation of the rain screen system.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).

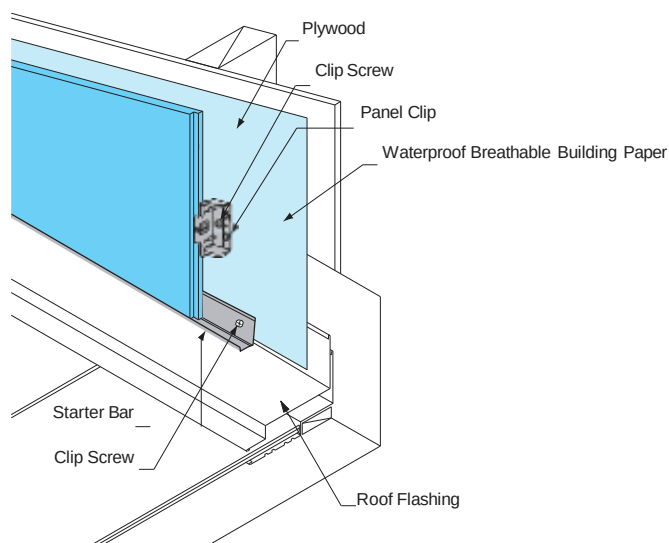
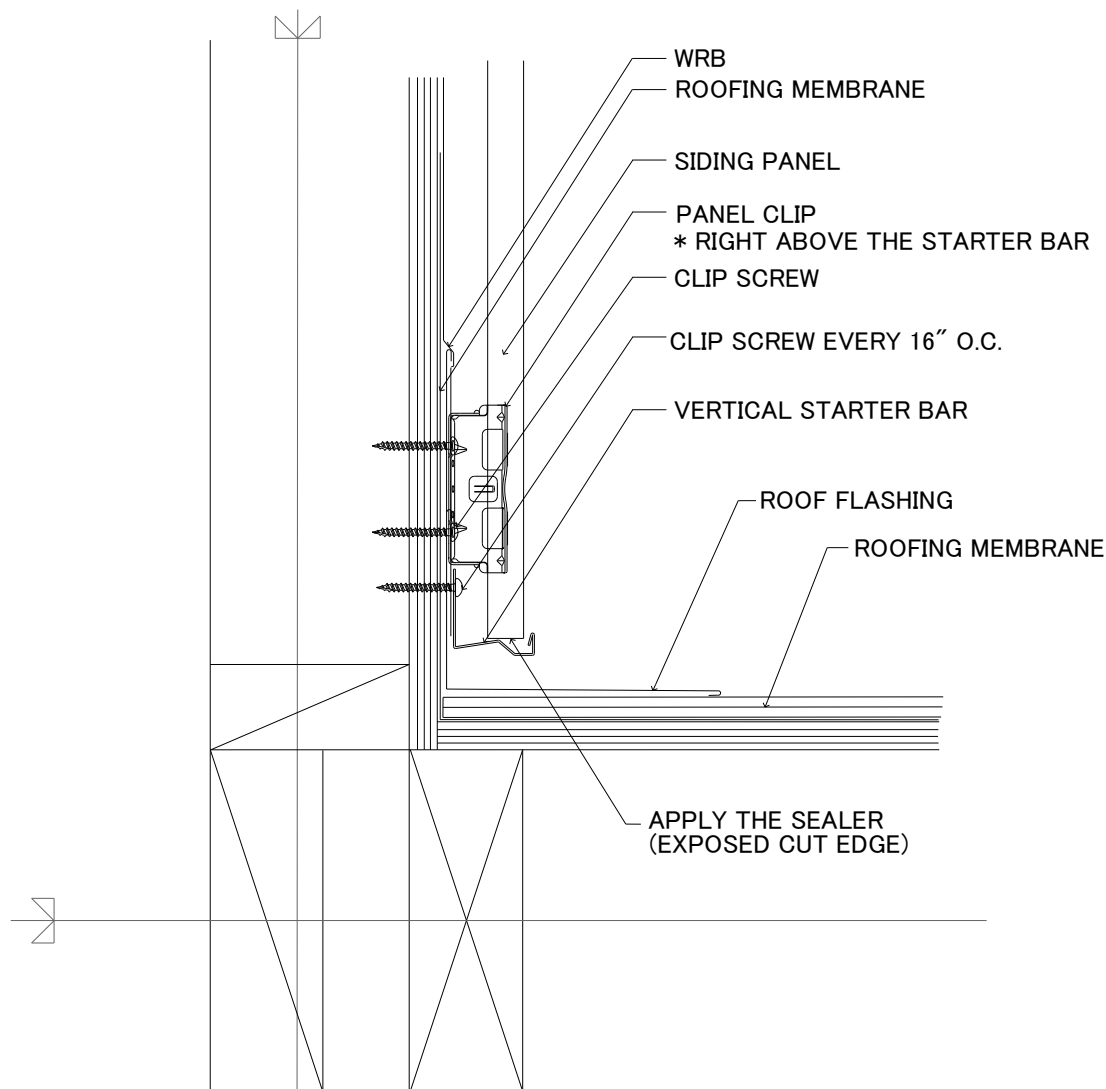
Refer to "Precautions for Vertical Installation" (P44).



5. Wood Frame – Plywood Sheathing – Vertical Application

<10b> Intersection With Roof (Slope Side)

- Keep 1/2" space between the roof flashings and siding panels for ventilation of the rain screen system.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).



6. Steel Frame - Gypsum Sheathing - Horizontal Application

<1> Siding Panel Installation Accessories

<2> Installation Overview

<3> Starter Bar Installation

<4> Install Panel Clips

<5> Installation of Vertical Joint

<6> Through Wall Flashing

<7> Install Outside Corner (Preformed)

Install Outside Corner (Metal)

<8> Install Inside Corners

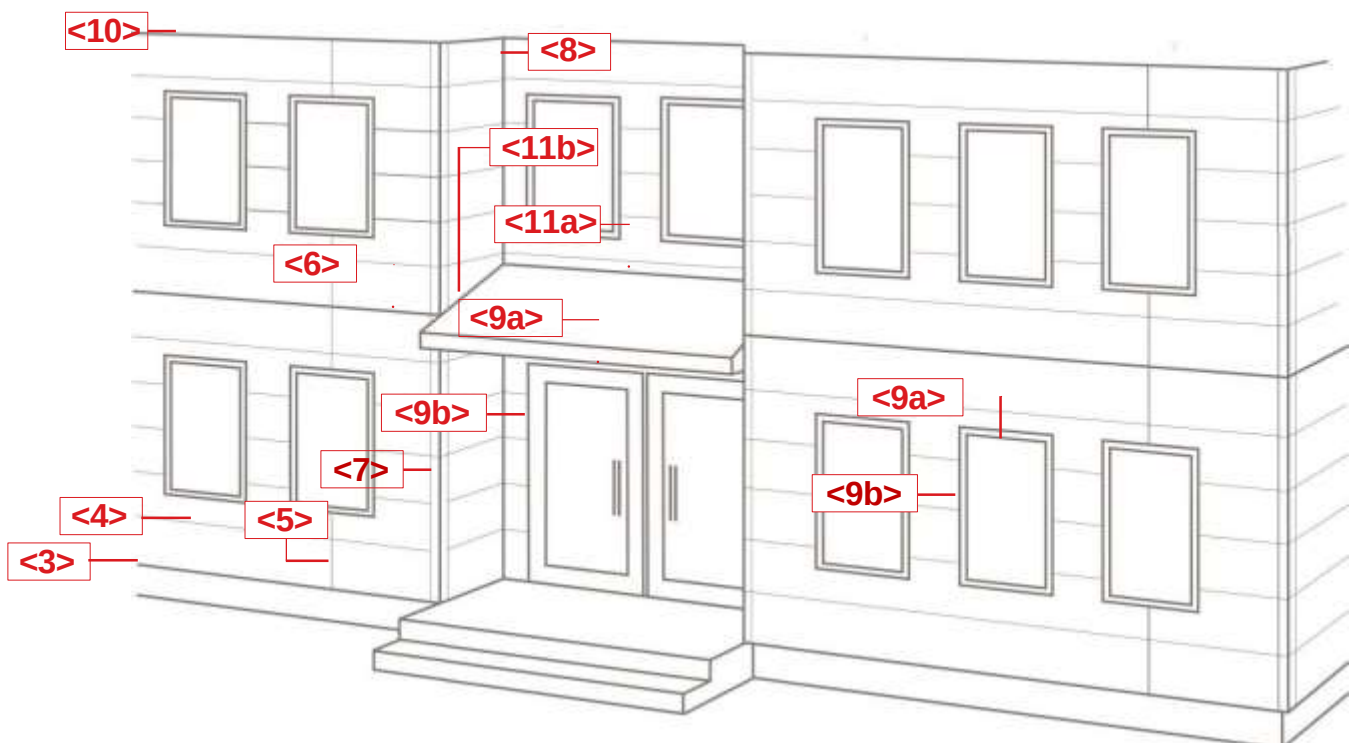
<9a> Openings (Above and Below)

<9b> Openings (Sides/Jambs)

<10> Top of Wall

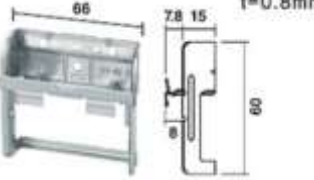
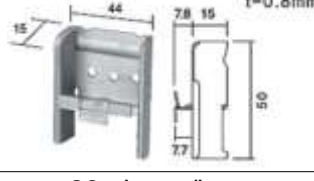
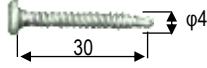
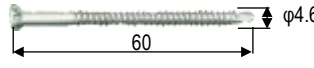
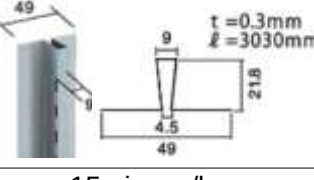
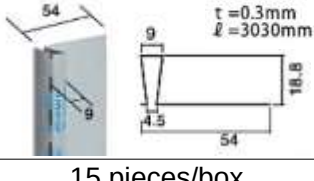
<11a> Intersection With Roof (Ridge Side)

<11b> Intersection With Roof (Slope Side)



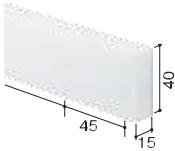
6. Steel Frame - Gypsum Sheathing - Horizontal Application

<1> Siding Panel Installation Accessories

Name (SKU)	Photo	Material	Places of application
Starter bar for horizontal application (B101152)	 4 pieces/box	Hot-dip zinc-aluminum-magnesium alloy coated steel	Serve as a support for the first panels in the case of horizontal installation. Applied on the sill of the building before the installation of the panel.
Panel clip (B10115)	 30 pieces/bag	Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the panel to a wood substructure
Corner Clip (B101153)	 20 pieces/bag	Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the preformed corners
Long clip (B10155)	 6 pieces/box	Hot-dip zinc-aluminum-magnesium alloy coated steel	It is used for fastening the panel to a wood substructure at increased wind loads
Clip screw 35 for steel substructure (B885130)	 500 pieces/box	Stainless steel	Used for attaching clips to a wood substructure
Face screw 60 for steel substructure (B885260)	 200 pieces/box	Stainless steel	It is used to fasten the panel in places where the use of clips is impossible or necessary to strengthen the fastening
Metal Caulking Joiner (B2722)	 15 pieces/box	Zinc/aluminum coated steel	It is used on vertical joints of panels
Metal Caulking Joiner One-side (B2719K)	 15 pieces/box	Zinc/aluminum coated steel	It is applied on the inside corners, between the opening flashing and the panels

6. Steel Frame - Gypsum Sheathing - Horizontal Application

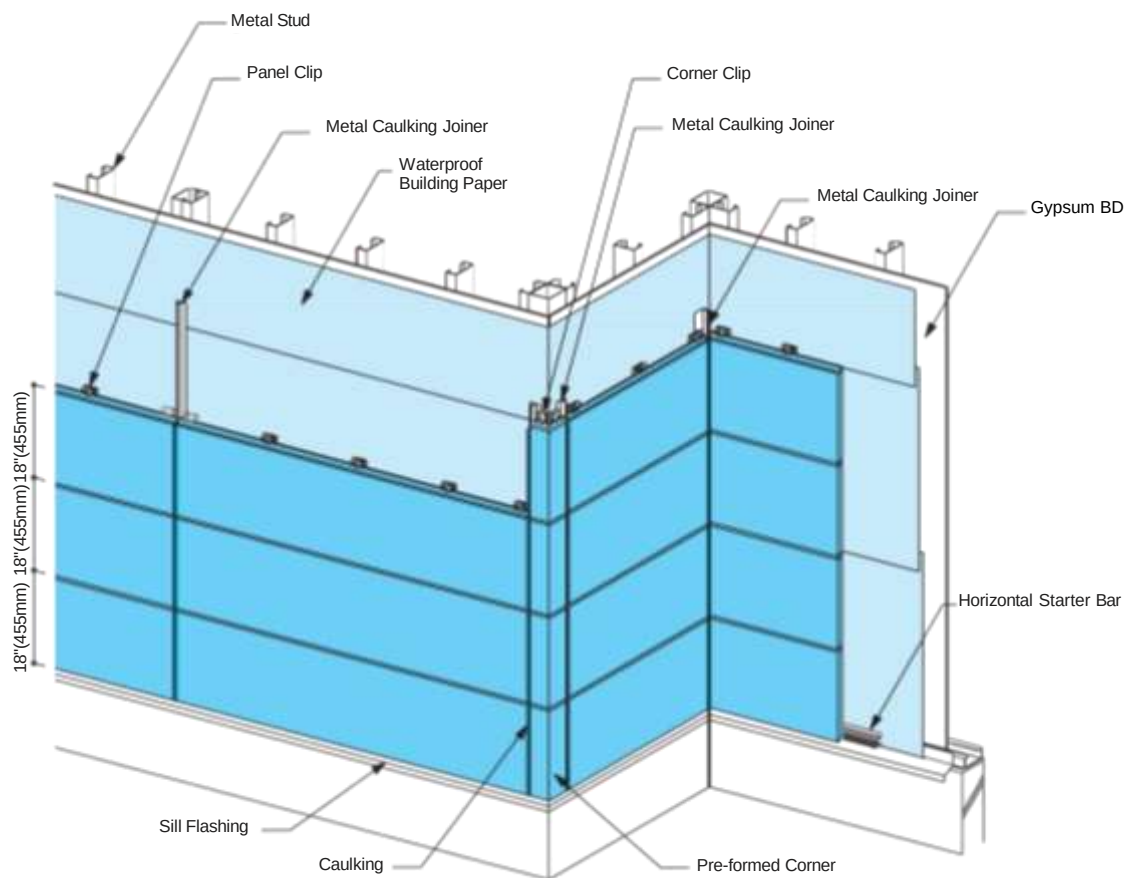
<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Spacer 15 (RY82S15)		Polypropylene	Used as backing for face fastener locations to eliminate deflection of the panel.
	22 blocks/strip 6 strips/box		
Water proof sealer (LTKMB3103C)		Silane water repellent	It is applied on the cut edges
	1 piece		
Repair putty (B4901)		Acrylic emulsion	It is used for scratches, chips and holes from face screws.
	1 piece		
Repair paint (Different for each SKU)		—	It is used on spots where putty is applied and scratches.
	1 set/box		

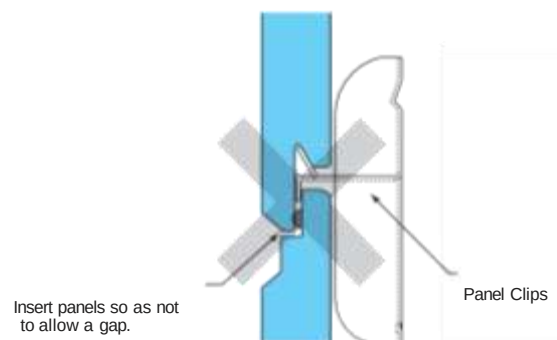
6. Steel Frame - Gypsum Sheathing - Horizontal Application

<2> Installation Overview

- Install starter bars at the base of the wall.
- Install starter bars so as to hold both siding panels and pre-formed corners.
- Install siding panels with panel clips and pre-formed corners with corner clips.
- Clips have several holes for screws. Fasten clips at 16" (400mm) on center with two screws per clip.
- At the top of a wall, below or above an opening, or in any situation where the panel's shiplaps have been removed, clips cannot be used. Install nom. 5/8" PT furring behind the areas to fasten, predrill pilot holes and install face screws with a minimum distance of 1-1/4" from the siding panel edge. After installation, follow directions on page 22 for screw head repair.



- Install siding panels so as not to allow gaps between them.



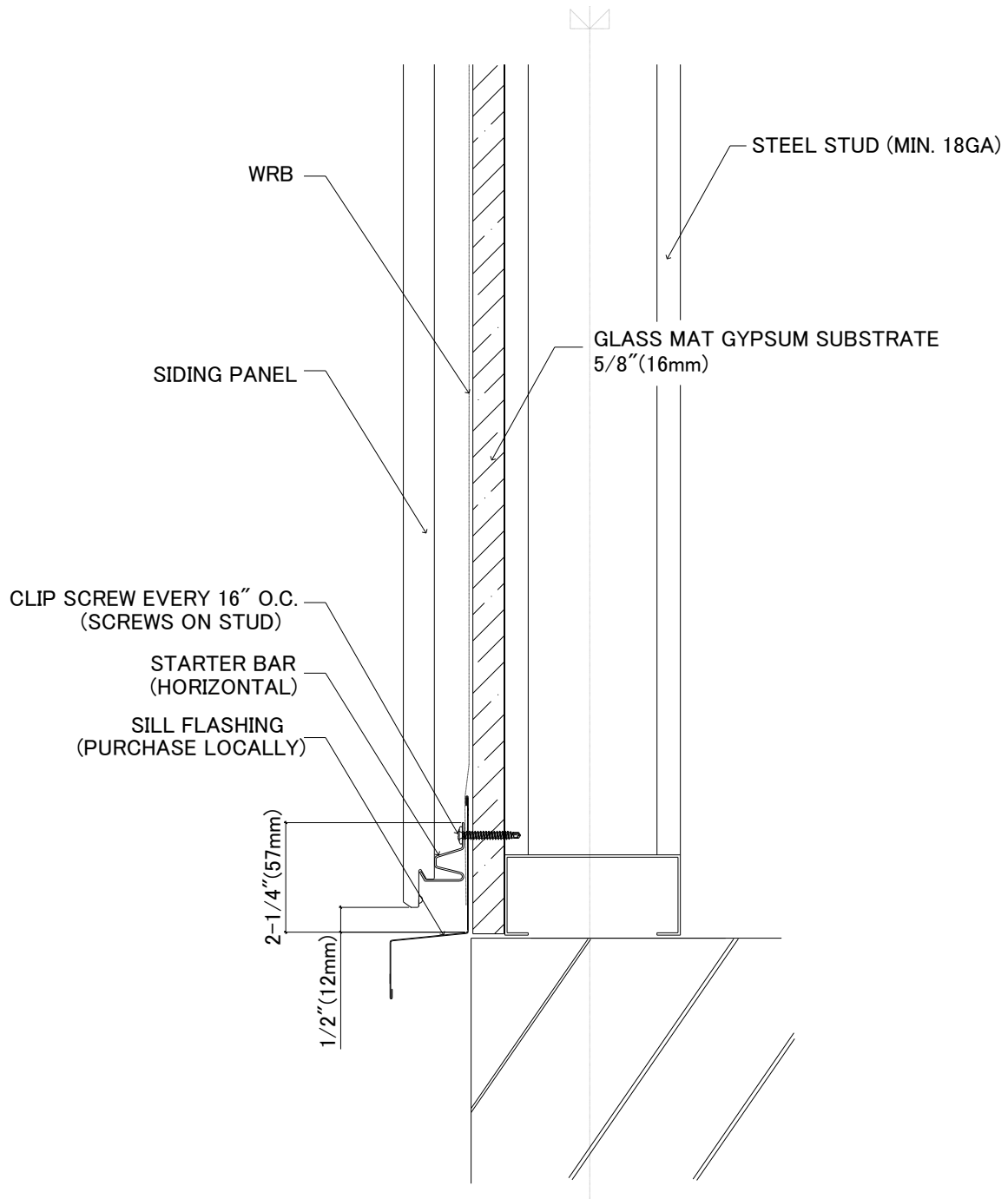
6. Steel Frame - Gypsum Sheathing - Horizontal Application

<3> Starter Bar Installation

- Starter Bars at the base of the wall serve as the reference for the CERACLAD installation so ensure they are level.

 **Make sure that siding panels are level at each row.**

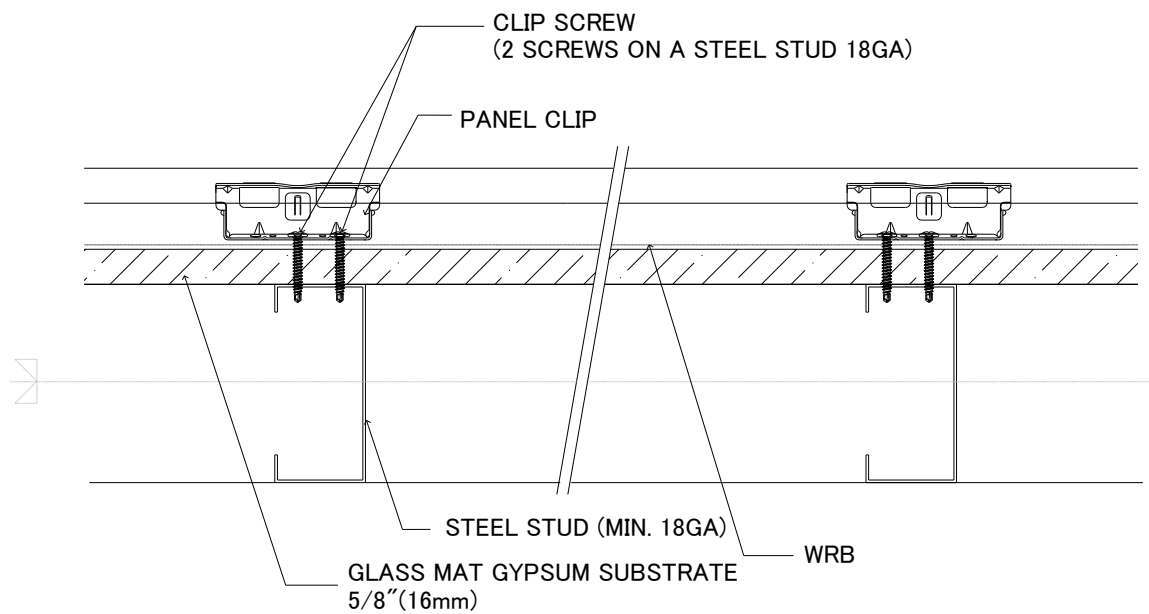
- Fasten the starter bars with clip screws at 16" on center into studs.
- Fasten the starter bars so as to allow approximately a 1/2" gap between the sill flashings and siding panels.



6. Steel Frame - Gypsum Sheathing - Horizontal Application

<4> Install Panel Clips

- Fasten a **Panel Clip** securely at 16" on center with **2 screws** per clip to stud.



6. Steel Frame - Gypsum Sheathing - Horizontal Application

<5> Installation of Vertical Joint

- Use the double sided metal caulking joiners for vertical joints to establish the proper profile for a sealant joint.

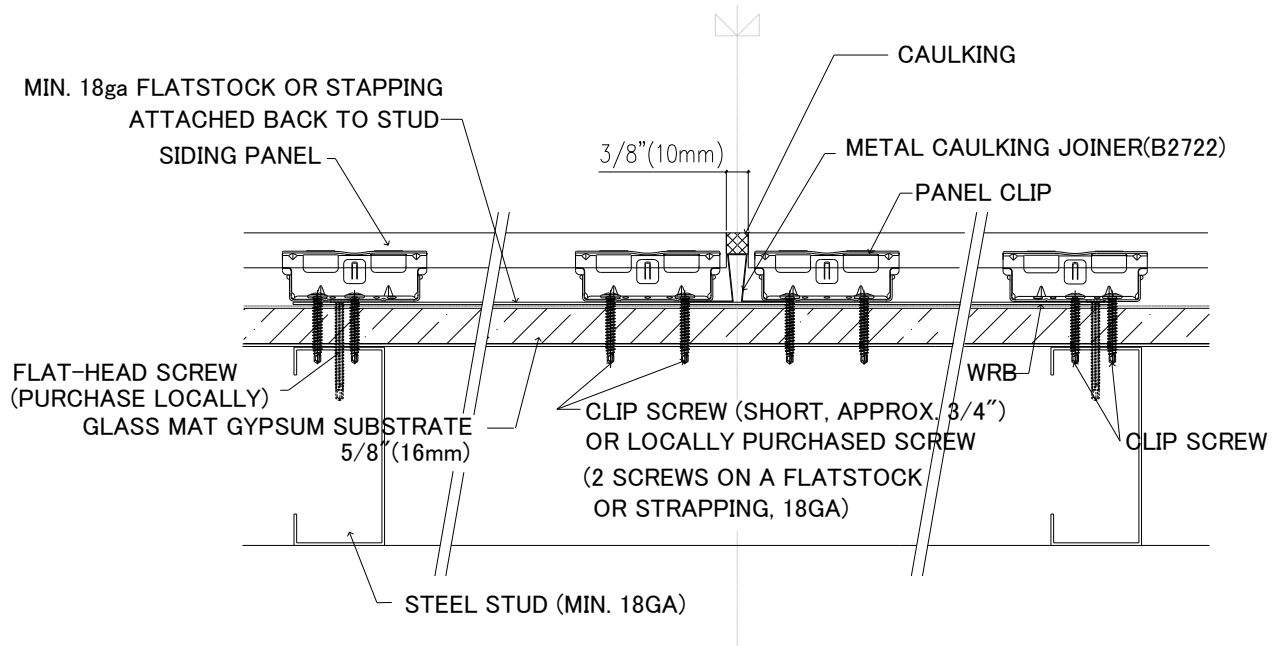
▲ **Attach the caulking joiner with screws staggered at 24" on center.**

- Install panel clips on the panels within 3" of the panel end and adjacent to the joiner as shown below.

- Fasten a **Panel Clip** securely at 16" on center with **2 screws** per clip to stud.

▲ **Panel clips may be installed on top of the metal caulking joiner's flange.**

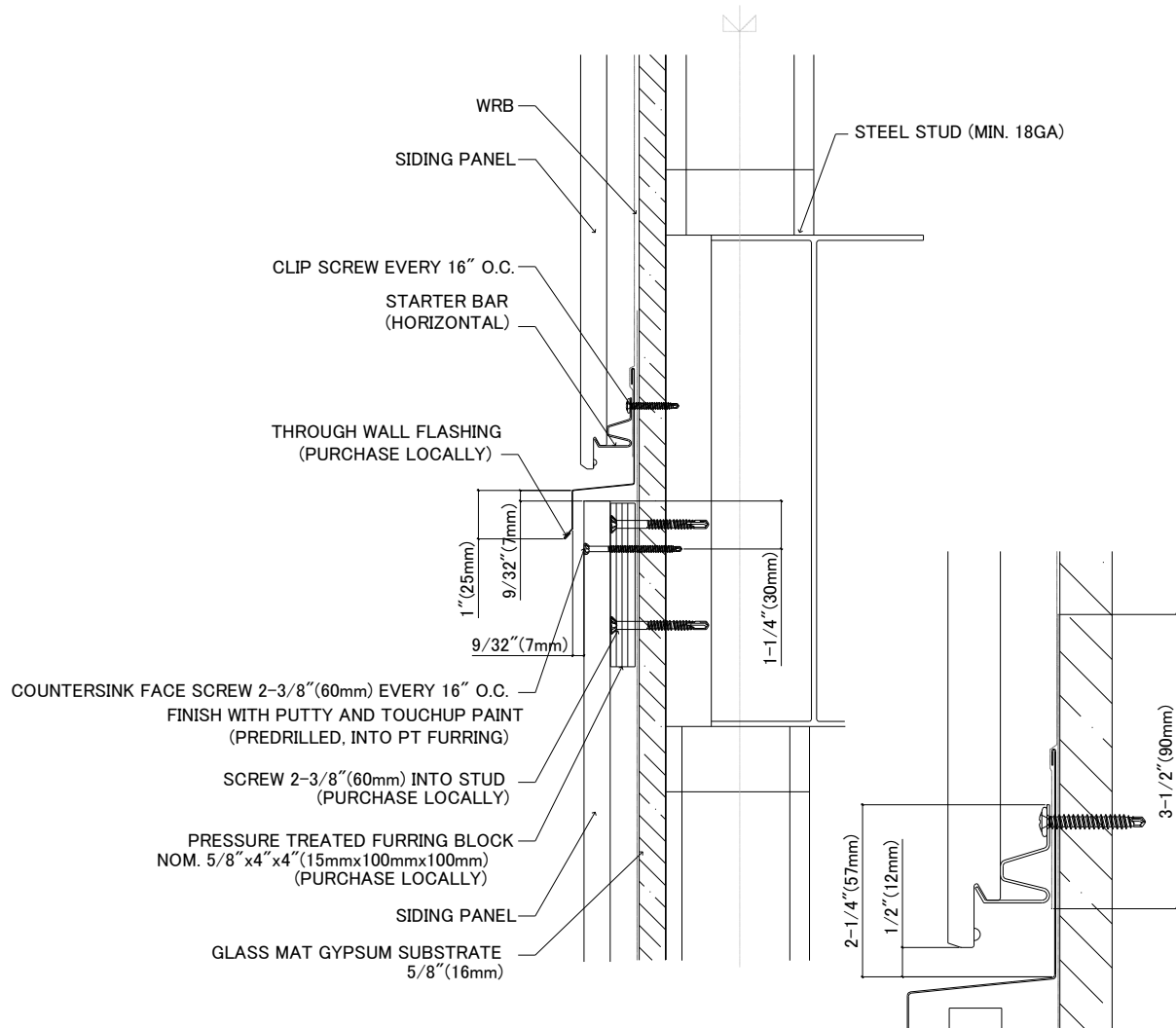
- When joints fall in between studs, metal strapping or flatstock can be added to span the studs. The minimum acceptable gauge for this flat stock is 18 gauge.



6. Steel Frame - Gypsum Sheathing - Horizontal Application

<6> Through Wall Flashing

- Install furring blocks behind the siding panels above which the through wall flashings will be installed, predrill pilot holes, and fasten the panels with face screw every 16" at least 1-1/4" from the panel's edge. Finish screw heads according to directions on Pg. 22.
- Keep 9/32"(7mm) space between the upper edge of panel and flashing and install the through wall flashing.



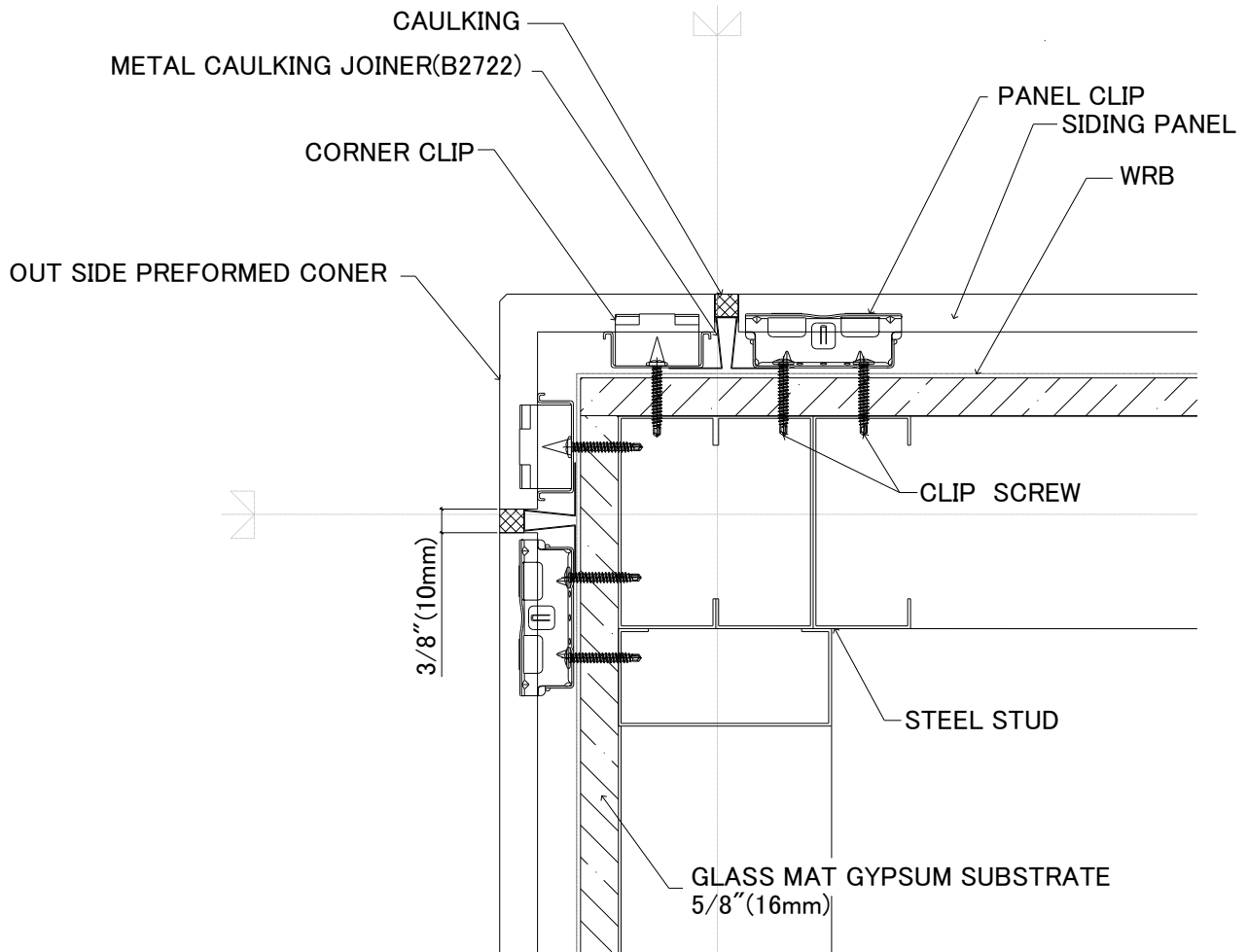
6. Steel Frame - Gypsum Sheathing - Horizontal Application

<7> Install Outside Corner (Preformed)

- Install a preformed outside corner with two corner clips.
- Install corner clip securely with one clip screw.
- Install metal caulking joiners between the preformed outside corners and the panels.

▲ **Attach the caulking joiner with screws staggered at 24" on center.**

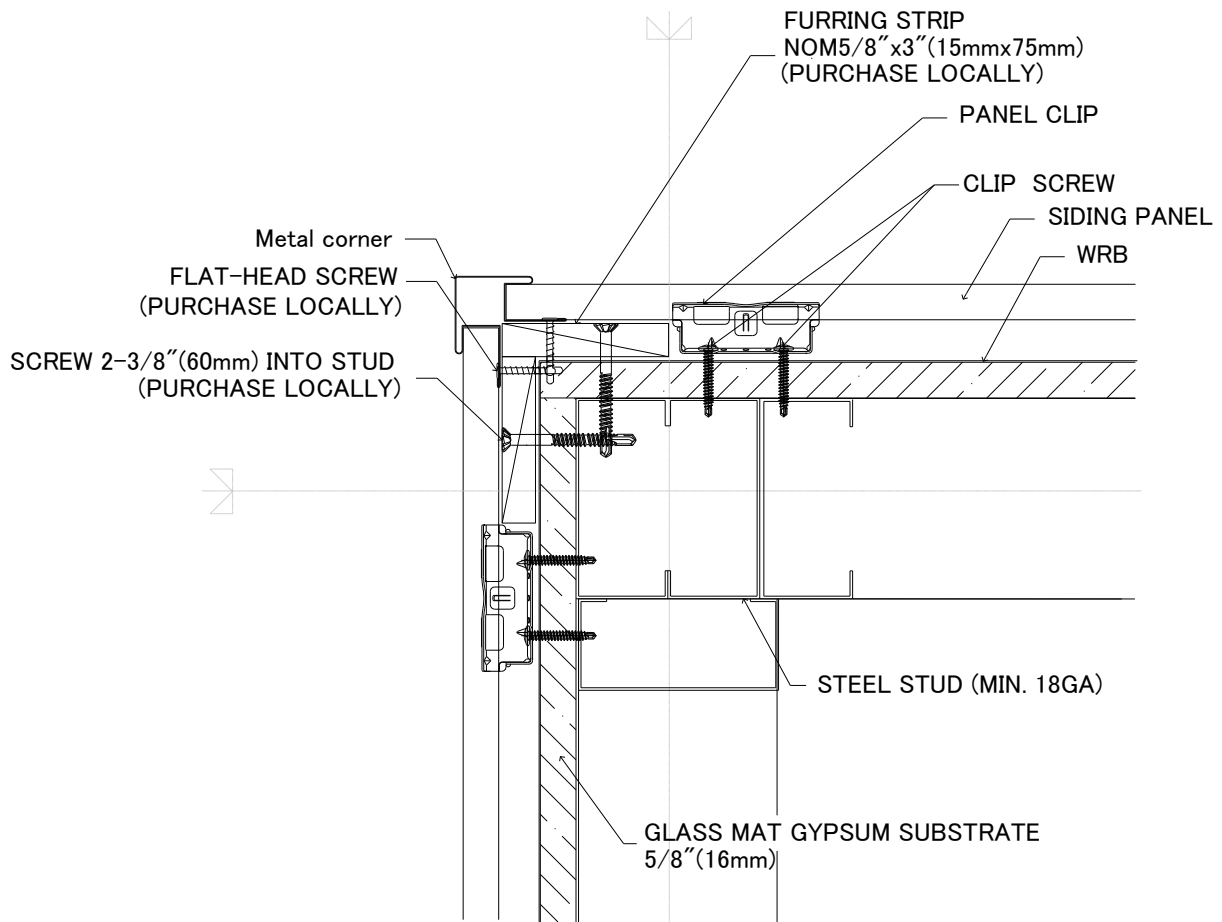
- Install preformed corners to be level with the siding panels.



6. Steel Frame - Gypsum Sheathing - Horizontal Application

<7> Install Outside Corner (Metal)

- Install vertical furring strips (pressure treated) behind both sides of the outside corner.
- Install metal outside corners on the furring strips.
- Install the metal outside corners so as to have approximately 1/2" of space between the sill flashings and the corners.
- Metal outside corners should cover the cut edges of the panels by 3/8" or more.

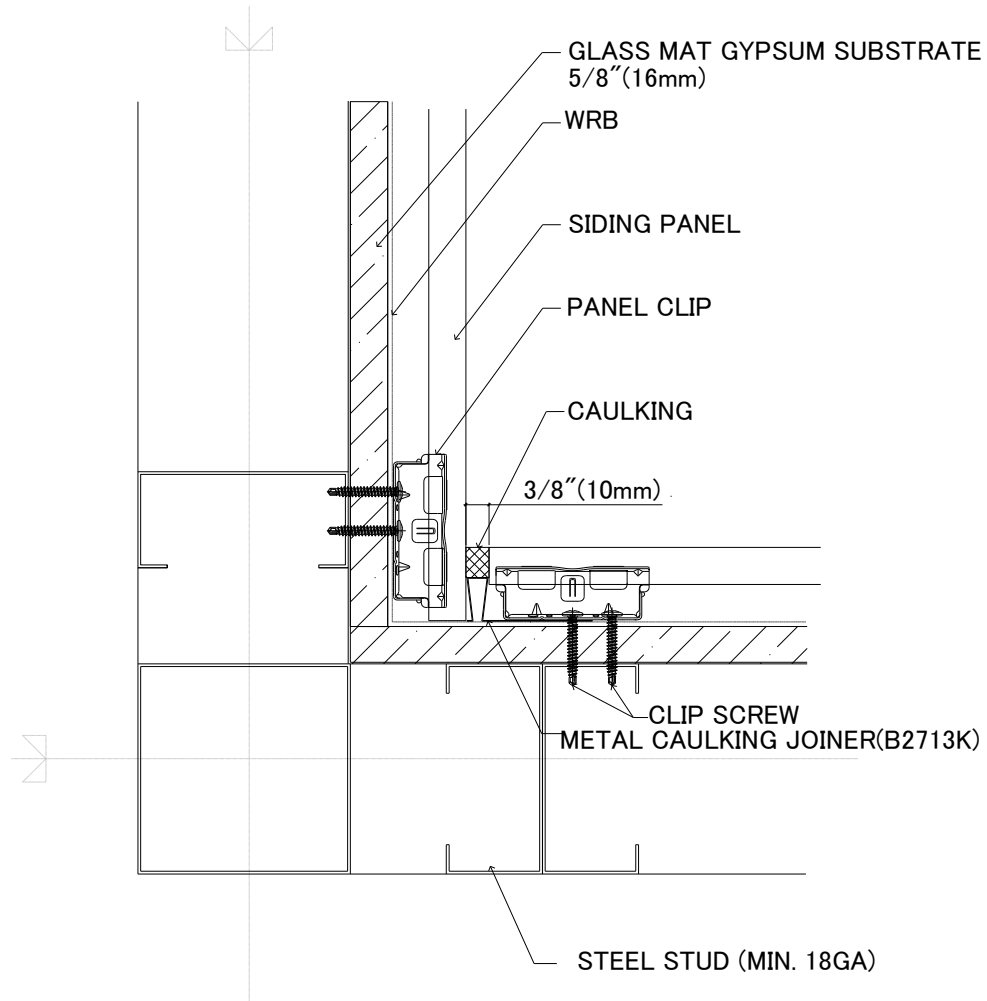


6. Steel Frame - Gypsum Sheathing - Horizontal Application

<8> Install Inside Corners

 Install a metal caulking joiner to provide a profile for a sealant joint.

- The joiner will provide approximately 3/8" of space for caulking.



6. Steel Frame - Gypsum Sheathing - Horizontal Application

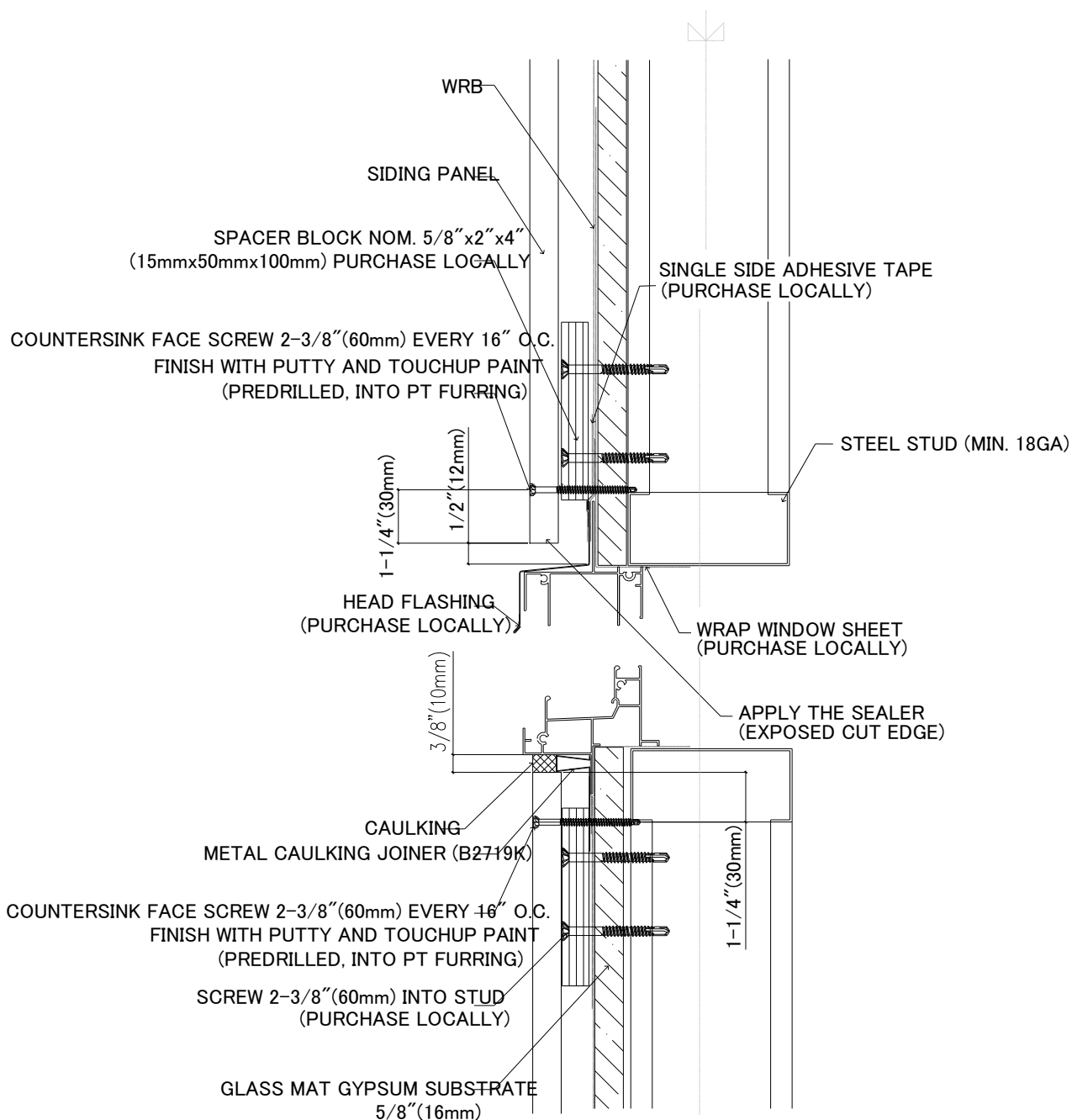
<9a> Openings (Above and Below)

- Unevenness caused by window flashing should be adjusted with shims.



- Use single sided metal caulking joiners or backer rod to create a 3/8" joint between window frames and panels. Butt joints with a triangular bead of caulking can result in sealant failure.

- Install furring strips above and below openings, predrill pilot holes, and fasten the panels with face screws at least 1-1/4" from the panel's edge.
- Refer to page 22 for screw head repair.
- Place single sided Metal Caulking Joiner or backer material between the lower window frame and the siding panel for caulking.

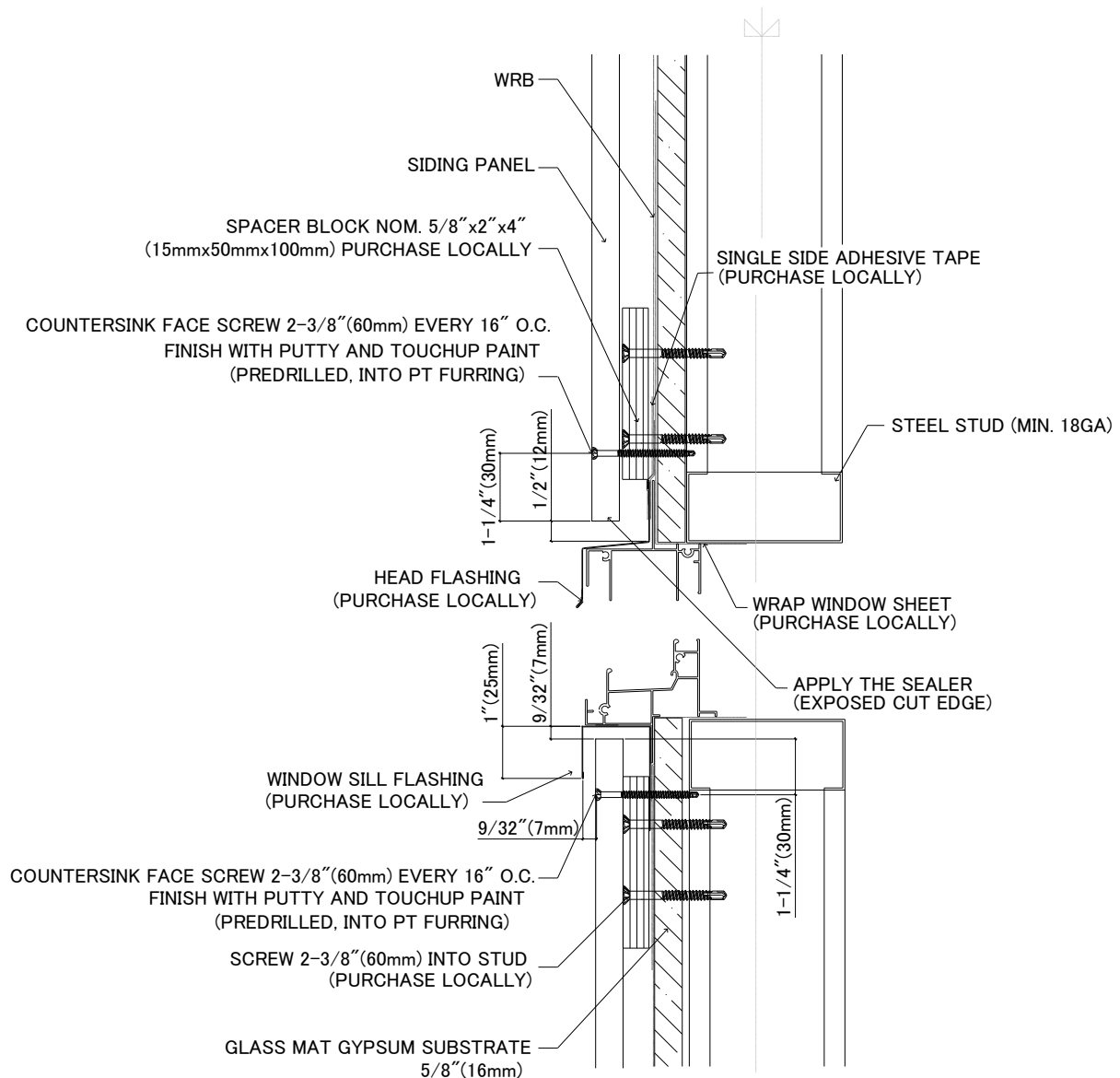


6. Steel Frame - Gypsum Sheathing - Horizontal Application

<9a> Openings (Above and Below)

When finishing the below of openings with flashing

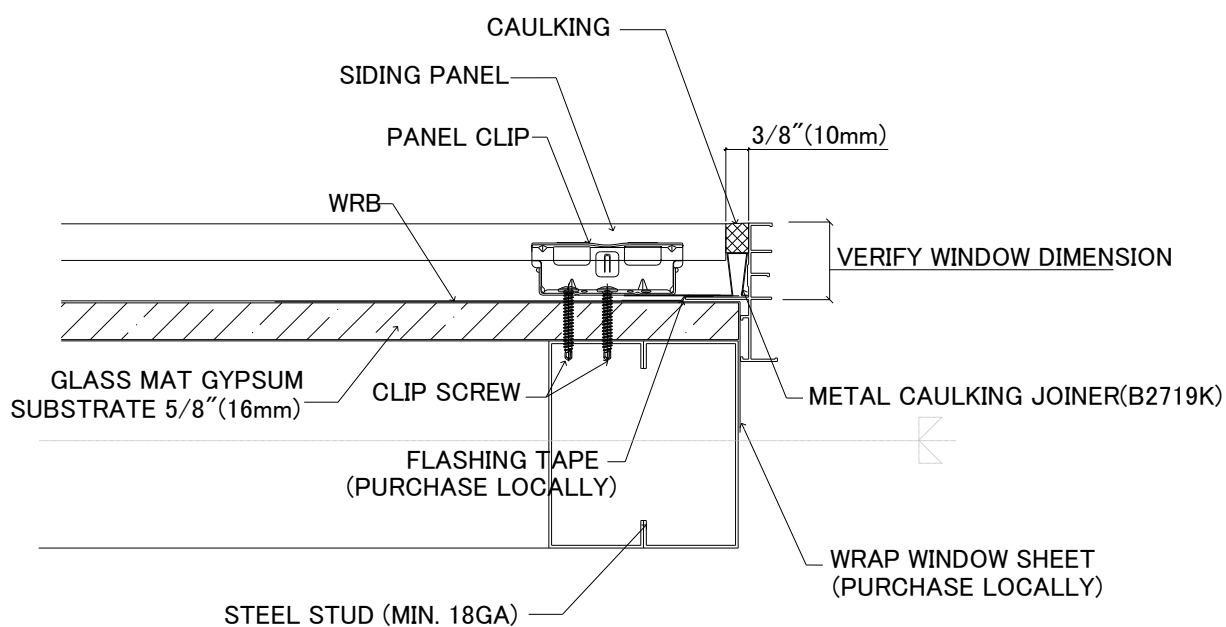
- Install Spacer Blocks or pressure treated furring above and below openings, predrill pilot holes, and fasten the panels with face screws at least 1-1/4" from the panel's edge. Predrill and nail panel edge every 16". Make sure to apply touch-up paint on the nail heads after installation.
- Place Window Sill Flashing between the lower window frame and the siding panel.



6. Steel Frame - Gypsum Sheathing - Horizontal Application

<9b> Openings (Sides/Jambs)

▲ Install a metal caulking joiner to provide a profile for a sealant joint.

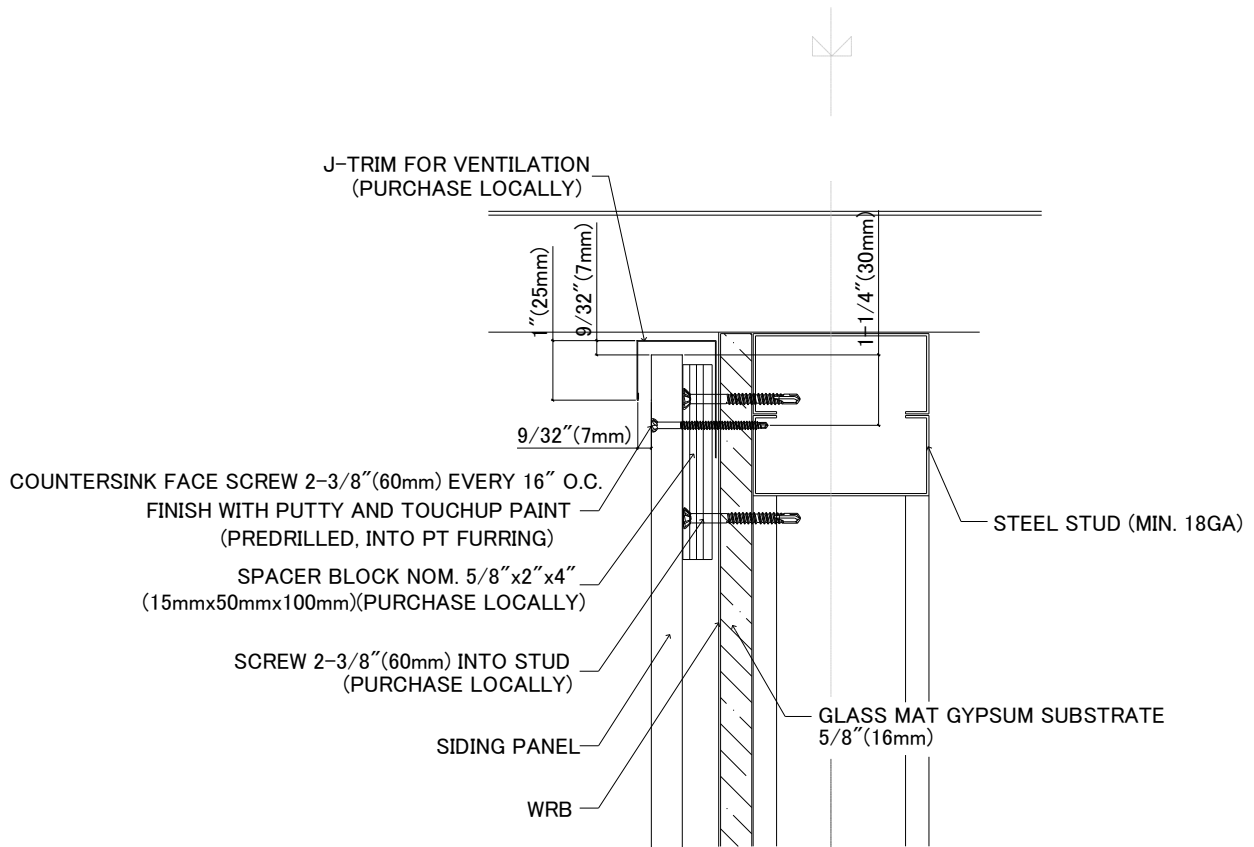


6. Steel Frame - Gypsum Sheathing - Horizontal Application

<10> Top of Wall

- Install the panels so as to have 9/32" space between the soffit flashing and the panel as shown on the figure below.
- Install furring strips, predrill pilot holes and fasten the panel with stainless steel face screws.
- Fasten the top of the panel every 16" at least 1-1/4" from the panel edge. Refer to page 22 for screw head repair.

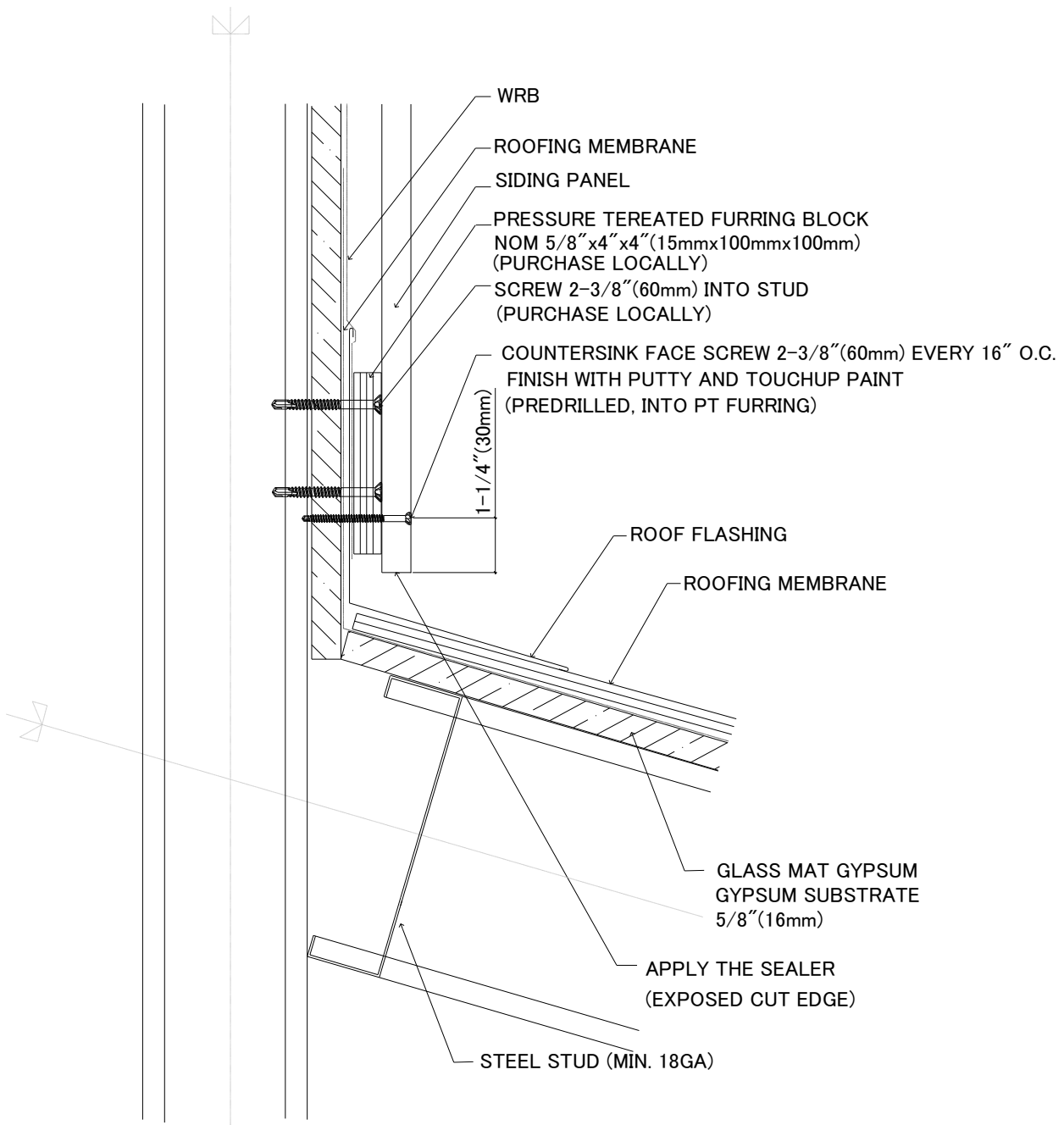
▲ **When soffit flashing is not feasible (for gable walls, etc.): Apply caulking between the top of the siding panels and the soffit so that the air coming through the air cavity is exhausted through the soffit or attic.**



6. Steel Frame - Gypsum Sheathing - Horizontal Application

<11a> Intersection with Roof (Ridge Side)

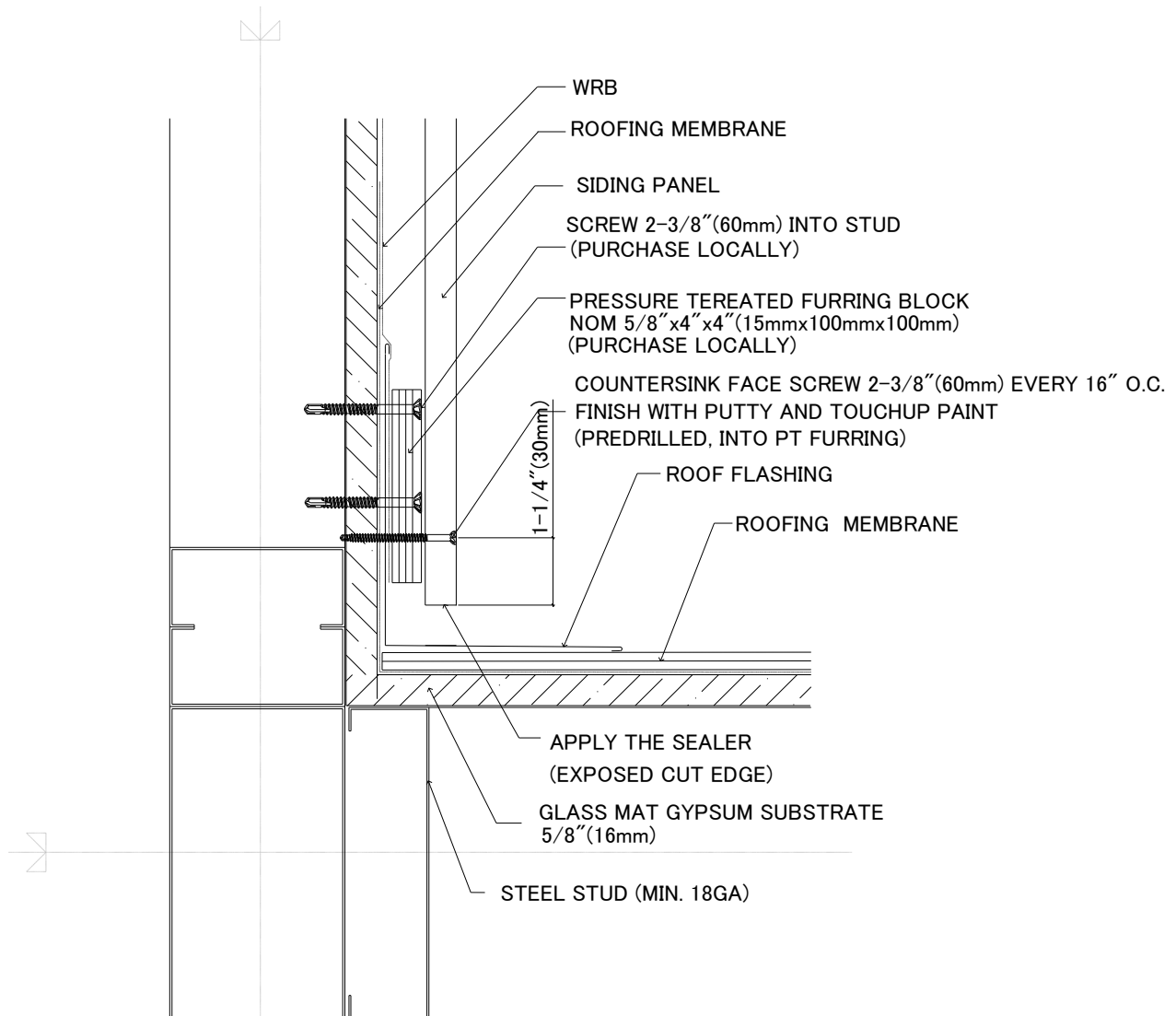
- Keep 1/2" space between the roof flashings and siding panels for draining dew condensation water and intake of the rain screen system.
- If using furring strips instead of blocks, make a 1-1/4" gap every 6' on the pressure treated furring strips for air circulation.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).



6. Steel Frame - Gypsum Sheathing - Horizontal Application

<11b> Intersection with Roof (Slope Side)

- Keep 1/2" space between the roof flashings and siding panels for draining dew condensation water and intake of the rain screen system.
- If using furring strips instead of blocks, make a 1-1/4" gap every 6' on the pressure treated furring strips for air circulation.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).



7. Steel Frame - Gypsum Sheathing - Vertical Application

<1> Siding Panel Installation Accessories

<2> Installation Overview

<3> Starter Bar Installation

<4> Install Panel Clips

<5> Through Wall Flashing

<6> Install Outside Corner (Preformed)

Install Outside Corner (Metal)

<7> Install Inside Corners

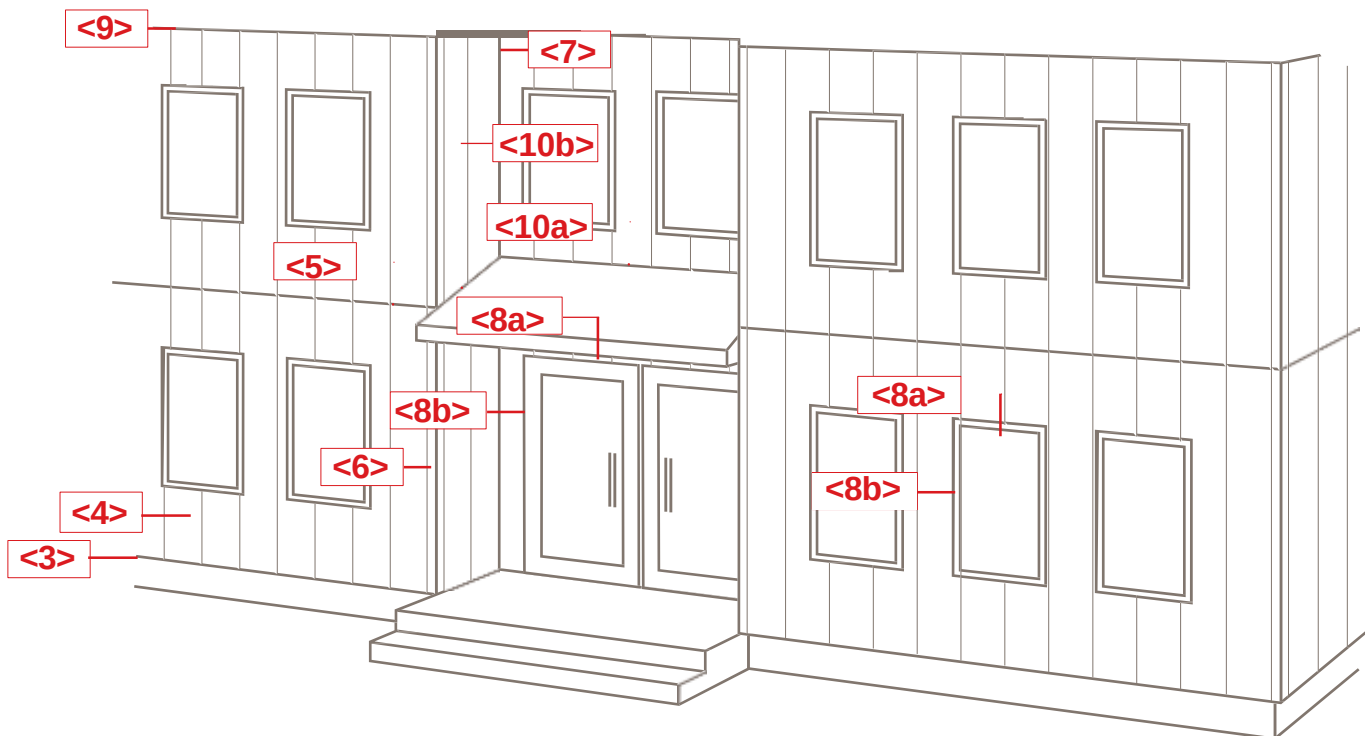
<8a> Openings (Above and Below)

<8b> Openings (Sides/Jambs)

<9> Top of Wall

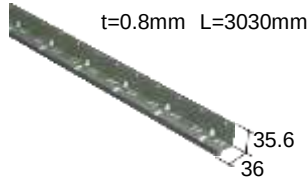
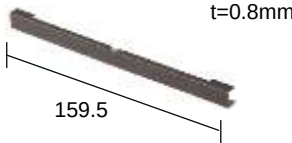
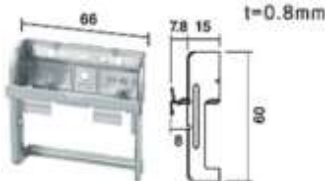
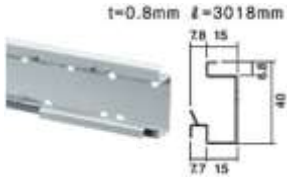
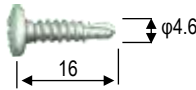
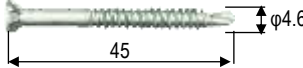
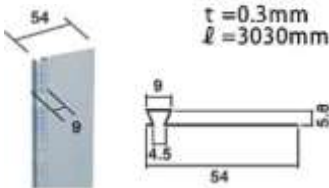
<10a> Intersection With Roof (Ridge Side)

<10b> Intersection With Roof (Slope Side)



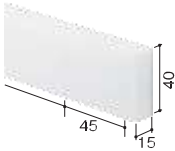
7. Steel Frame - Gypsum Sheathing - Vertical Application

<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Starter bar for vertical Application (B10157HG)	 5 pieces/box	Hot-dip zinc/aluminum coated steel with a polyester paint finish	Serve as a support for the first panels in the case of vertical installation. Applied on the sill of the building before the installation of the panel.
Cap vertical application starter bar, used for outside corner (B291W1D)	 10 pieces/bag	Coated galvanized steel (Zn, Al)	Attaches to a vertical application starter bar
Panel clip (B10115)	 30 pieces/bag	Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the panel to a wood substructure
Long clip (B10155)	 6 pieces/box	Hot-dip zinc-aluminum-magnesium alloy coated steel	It is used for fastening the panel to a wood substructure at increased wind loads
Clip screw 16 for steel substructure (B885116)	 500 pieces/box	Stainless steel	Used for attaching clips to a wood substructure
Face screw 45 for steel substructure (B885245)	 300 pieces/box	Stainless steel	It is used to fasten the panel in places where the use of clips is impossible or necessary to strengthen the fastening
Metal Caulking Joiner One-side (B2719K)	 15 pieces/box	Zinc/aluminum coated steel	It is applied on the outside and inside corners, between the opening flashing and the panels

7. Steel Frame - Gypsum Sheathing - Vertical Application

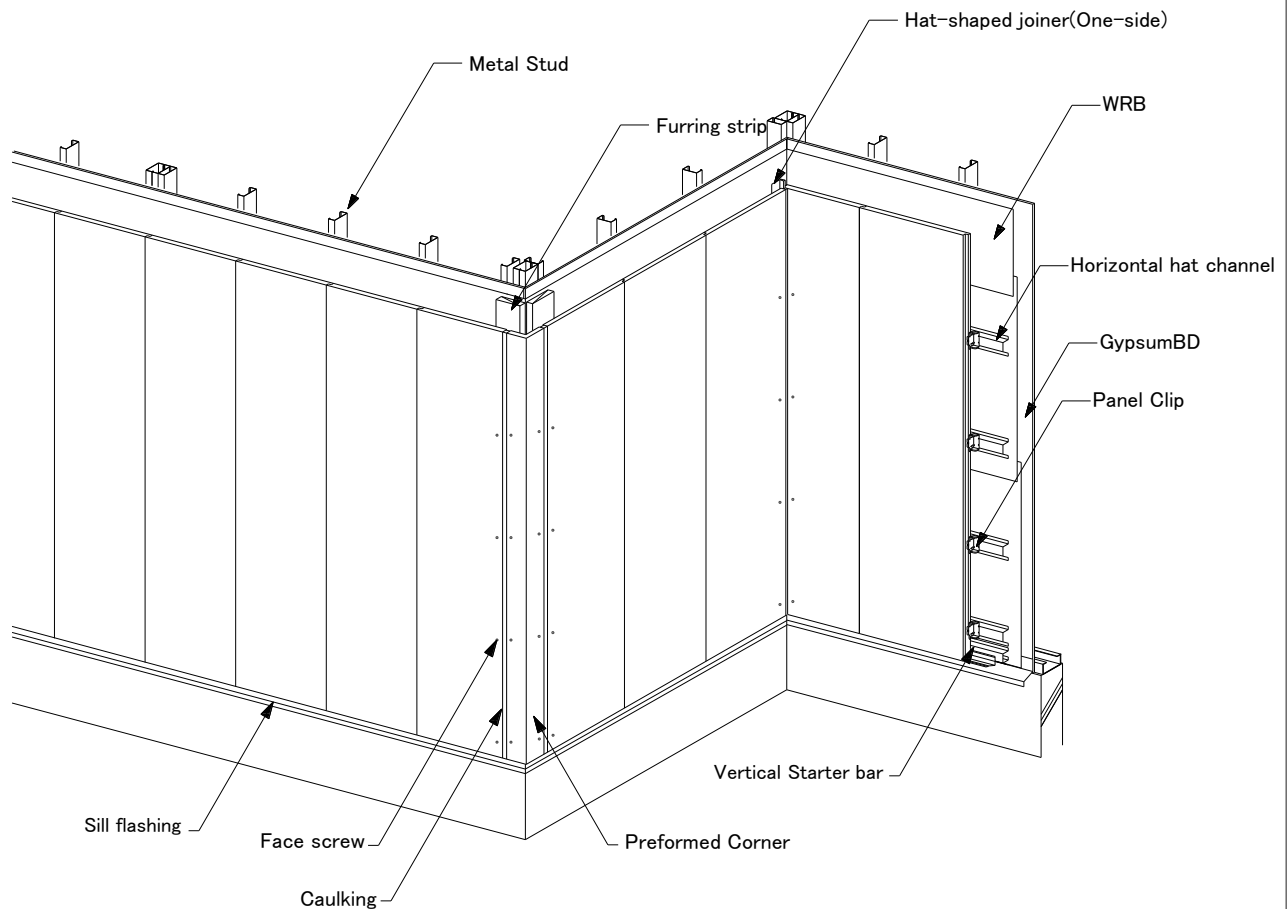
<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Spacer 15 (RY82S15)		Polypropylene	Used as backing for face fastener locations to eliminate deflection of the panel.
	22 blocks/strip 6 strips/box		
Water proof sealer (LTKMB3103C)		Silane water repellent	It is applied on the cut edges
	1 piece		
Repair putty (B4901)		Acrylic emulsion	It is used for scratches, chips and holes from face screws.
	1 piece		
Repair paint (Different for each SKU)		—	It is used on spots where putty is applied and scratches.
	1 set/box		

7. Steel Frame - Gypsum Sheathing - Vertical Application

<2> Installation Overview

- Install starter bars at the base of each wall.
- Install starter bars so as to hold both siding panels and pre-formed corners.
- Install siding panels with panel clips.
- Clips have several holes for screws. Fasten clips at 16"(400mm) on center with two screws per clip.
- In any situation where the panel's shiplapped edges have been removed, such as the end of the wall, clips cannot be used. Install pressure treated furring, predrill holes, and fasten with face screws at least 1-1/4" from the panel edges at 16" on center.
- After installation, follow directions on page 22 for screw head repair.



- Install siding panels so as not to allow gaps between them.

Precautions For Vertical Installation:

Follow these important guidelines:

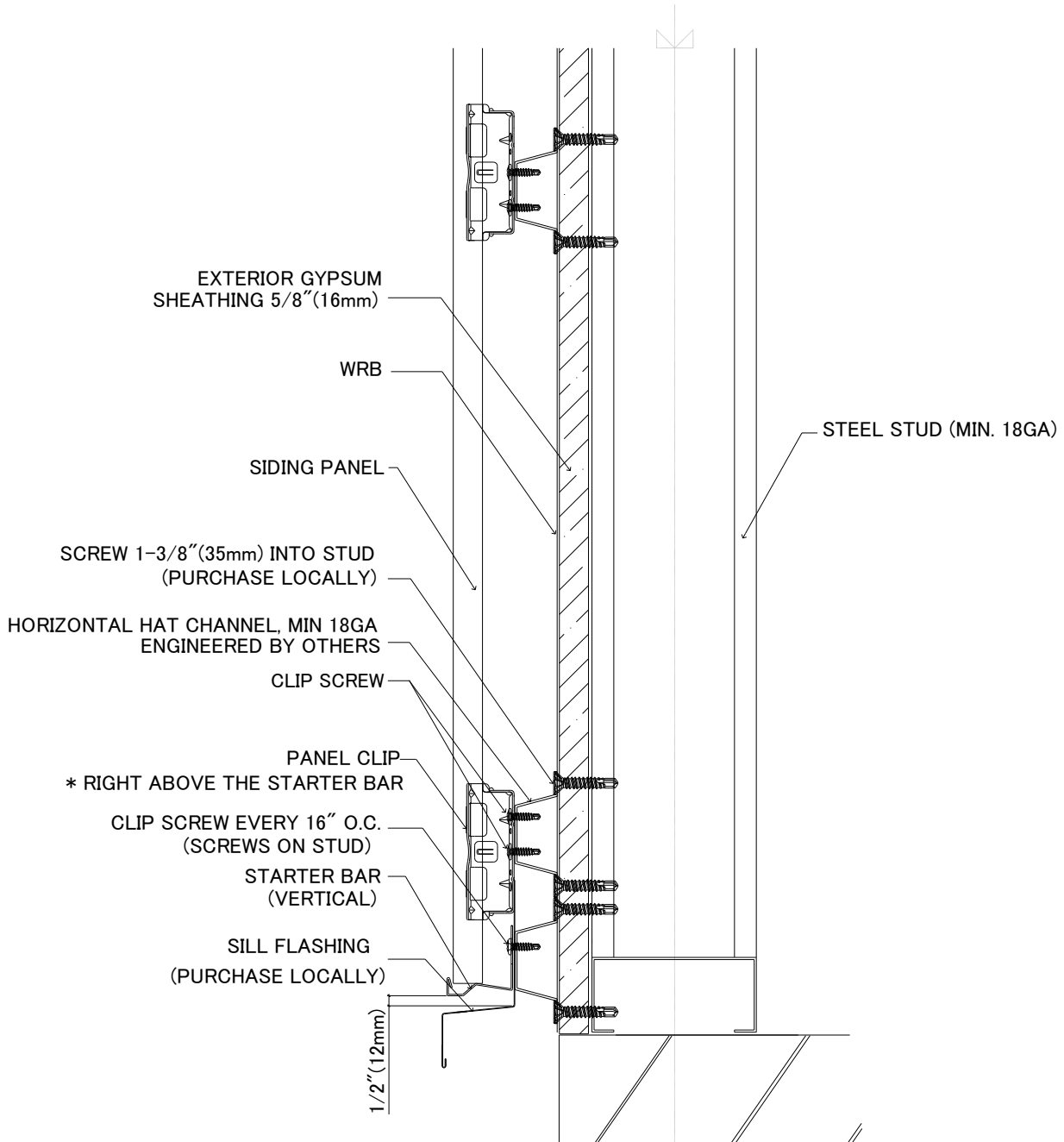
1. Make sure to use starter bars to fully support the siding panels and ensure that the starter bars are fastened onto the structural framing.
 2. The lowest Panel Clip installed on each vertical siding panel must be secured as close to the starter bar as possible, at least within 3".
 3. The highest Panel Clip installed on each vertical siding panel must be secured as close the top of the panel as possible, at least within 3".
- * If it is not possible to install a Panel Clip within 3" of the top or bottom of each panel, install two spacer blocks and face fasteners instead.

7. Steel Frame - Gypsum Sheathing - Vertical Application

<3> Starter Bar Installation

- Ensure that the starter bars are level.
- Attach the starter bar to the structure with screws at 16" on center, attached to studs when possible.
- Fasten the first clip right above the starter bar (and no more than 3" above).
- To fit the preformed corners, use the corner tool included with the starter bars. See the photos on the following page for instructions.

 **Ensure the panels are level at each row.**



Refer to "Precautions for Vertical Installation" (P78).

7. Steel Frame - Gypsum Sheathing - Vertical Application

<3> Starter Bar Installation

- (1) Take out the corner tool from the package. One corner tool is packaged together with five starter bars.



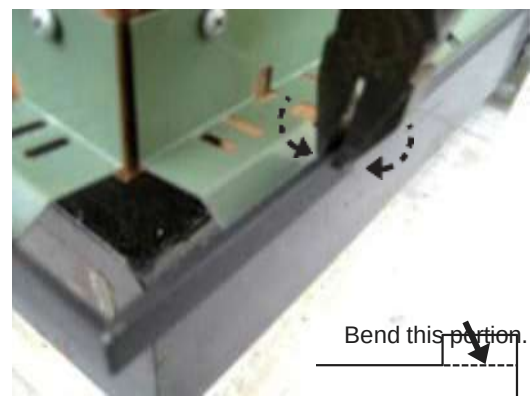
- (2) Bend the corner part at its center.



- (3) Install the bent corner tool onto the corner of the two already installed starter bars, as shown.



- (4) Using pliers, very carefully bend the top lip of the corner tool.



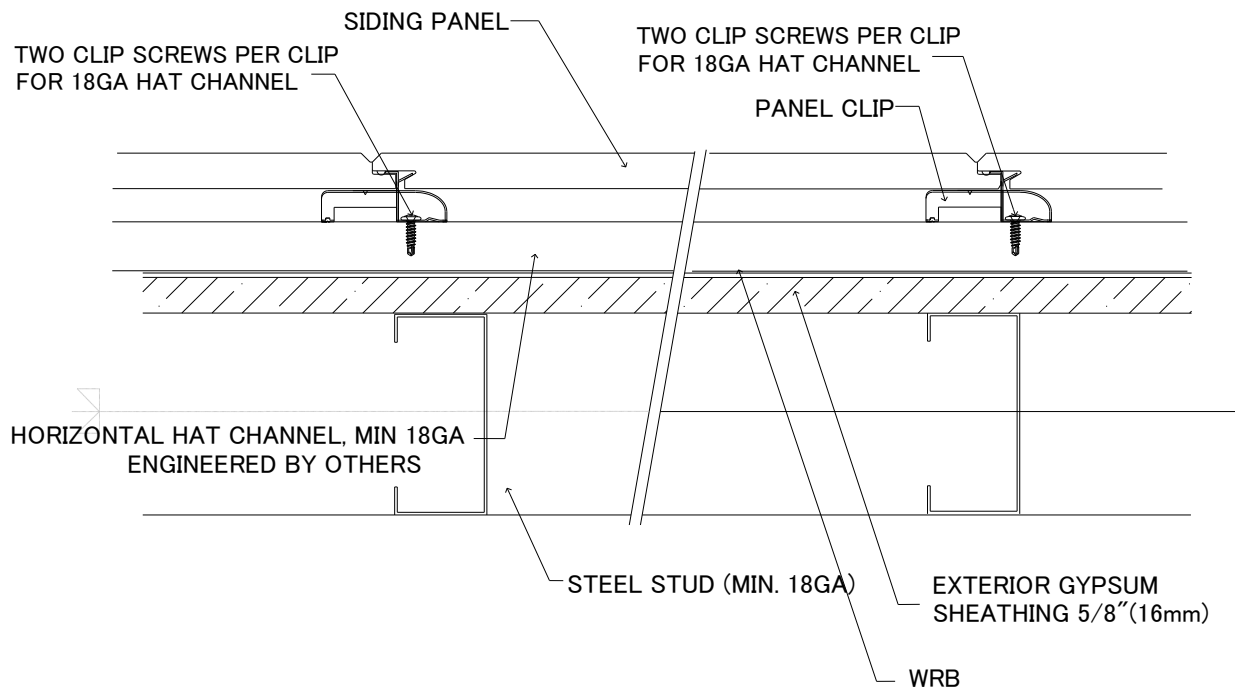
- (5) The finished preformed corner tool should look like this:



7. Steel Frame - Gypsum Sheathing - Vertical Application

<4> Install Panel Clips

- Fasten a **panel clip** securely with **2 screws** at least every 16", going vertically up the panel joint.
- Place a clip within 3" of the top of each panel.

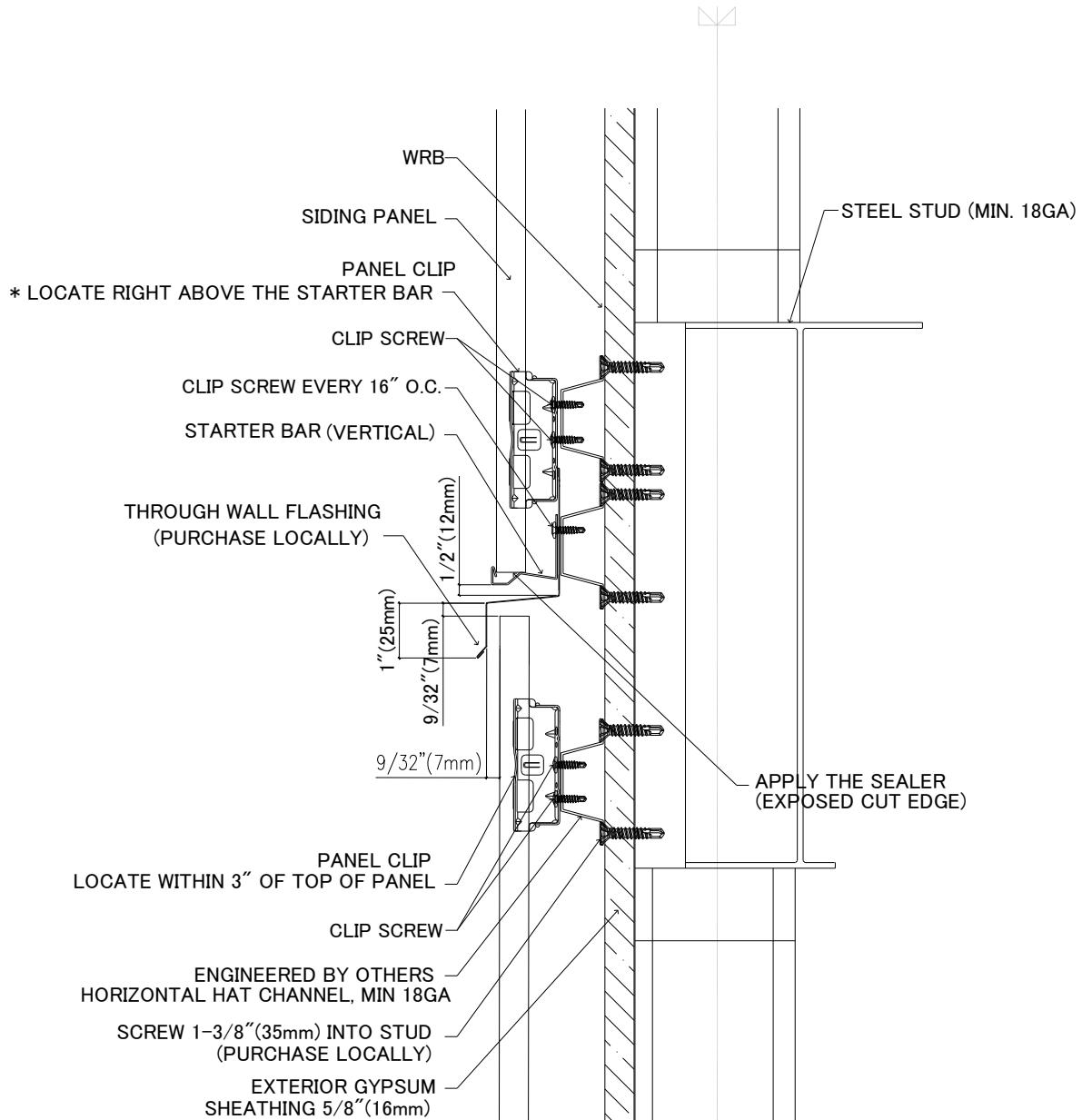


7. Steel Frame - Gypsum Sheathing - Vertical Application

<5> Through Wall Flashing

Refer to "Precautions for Vertical Installation" (P78).

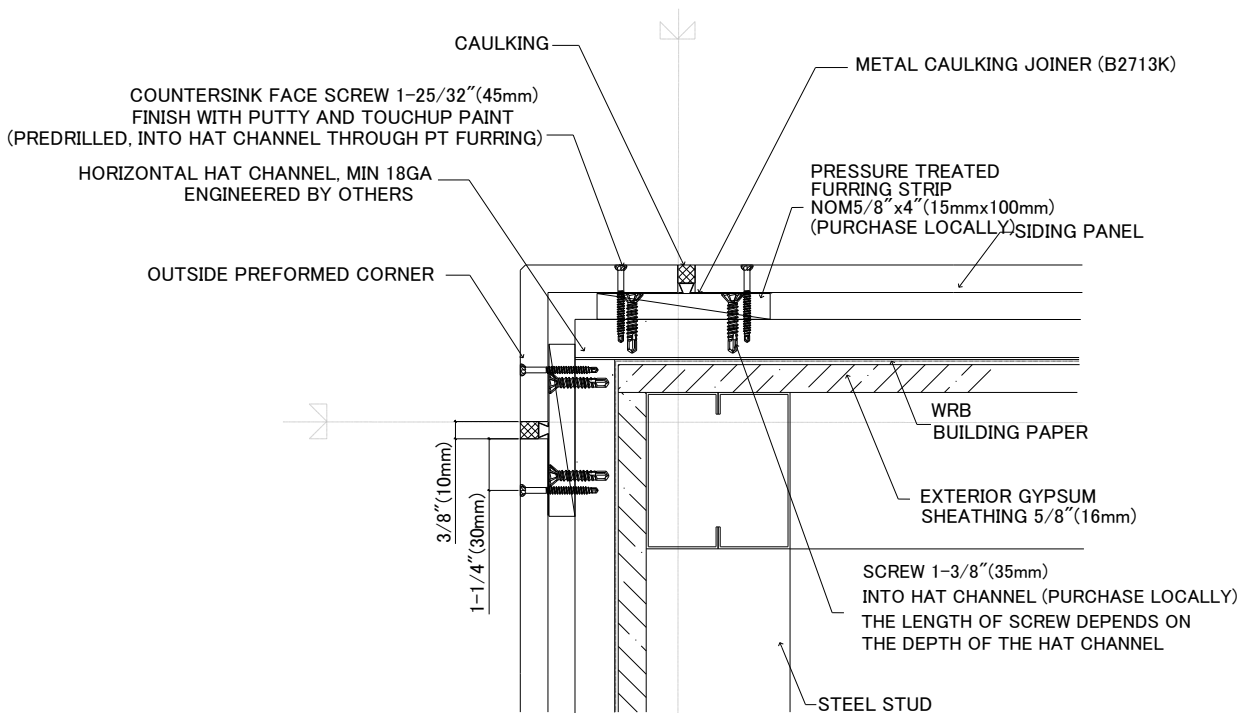
- Install Panel Clip within 3" of the top of each panel.
- Keep 7mm (9/32") space between the upper edge of panel and flashings and install the through wall flashings.



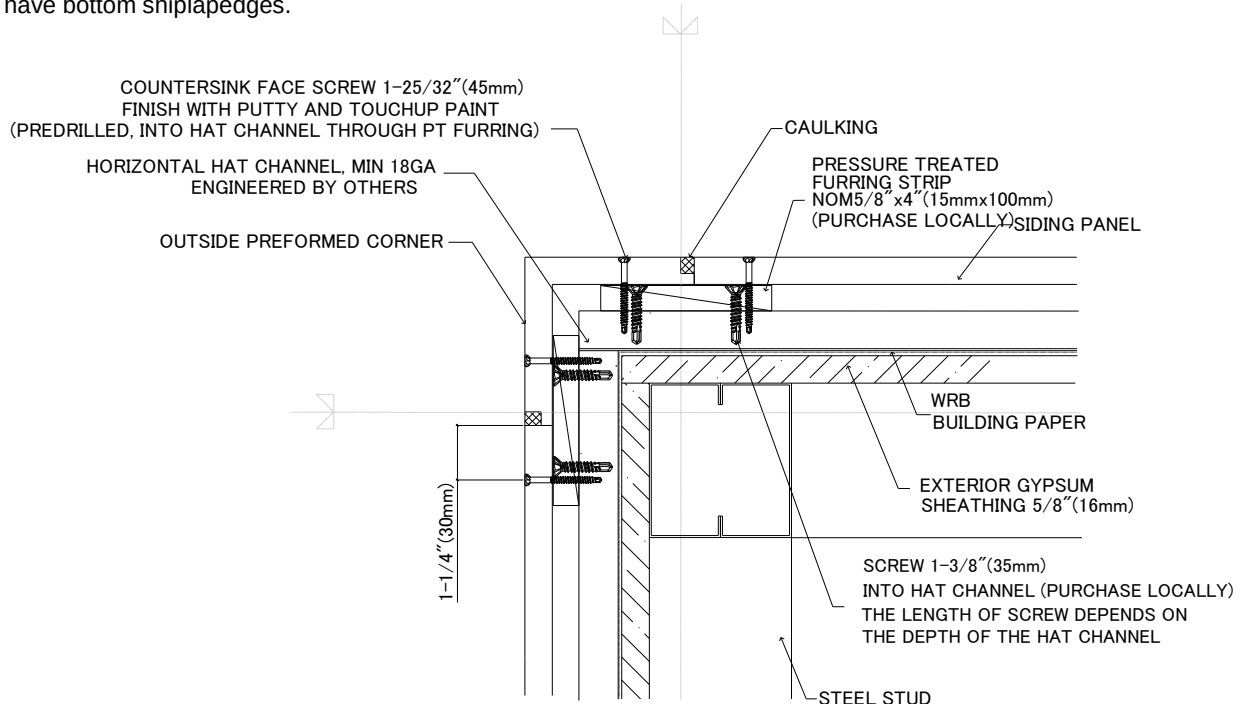
7. Steel Frame - Gypsum Sheathing - Vertical Application

<6> Install Outside Corner (Preformed)

- Panel clips cannot be used for the siding panels adjacent to the outside corners because shiplapped edges must be removed when cutting the panels to size.
- Install pressure treated furring strips, predrill pilot holes and face-screw at least 1-1/4" from any panel edges. Screw spacing is as follows:
 - ① Edge of panel adjacent to outside corner: 16" on center.
 - ② Corner Siding : (a) 20" or less for parallel installation on both sides, (b) 12" or less for staggered installation on both sides.
- After installation, follow directions on page 22 for screw head repair.
- Install starter bars so as to hold both siding and pre-formed corners.



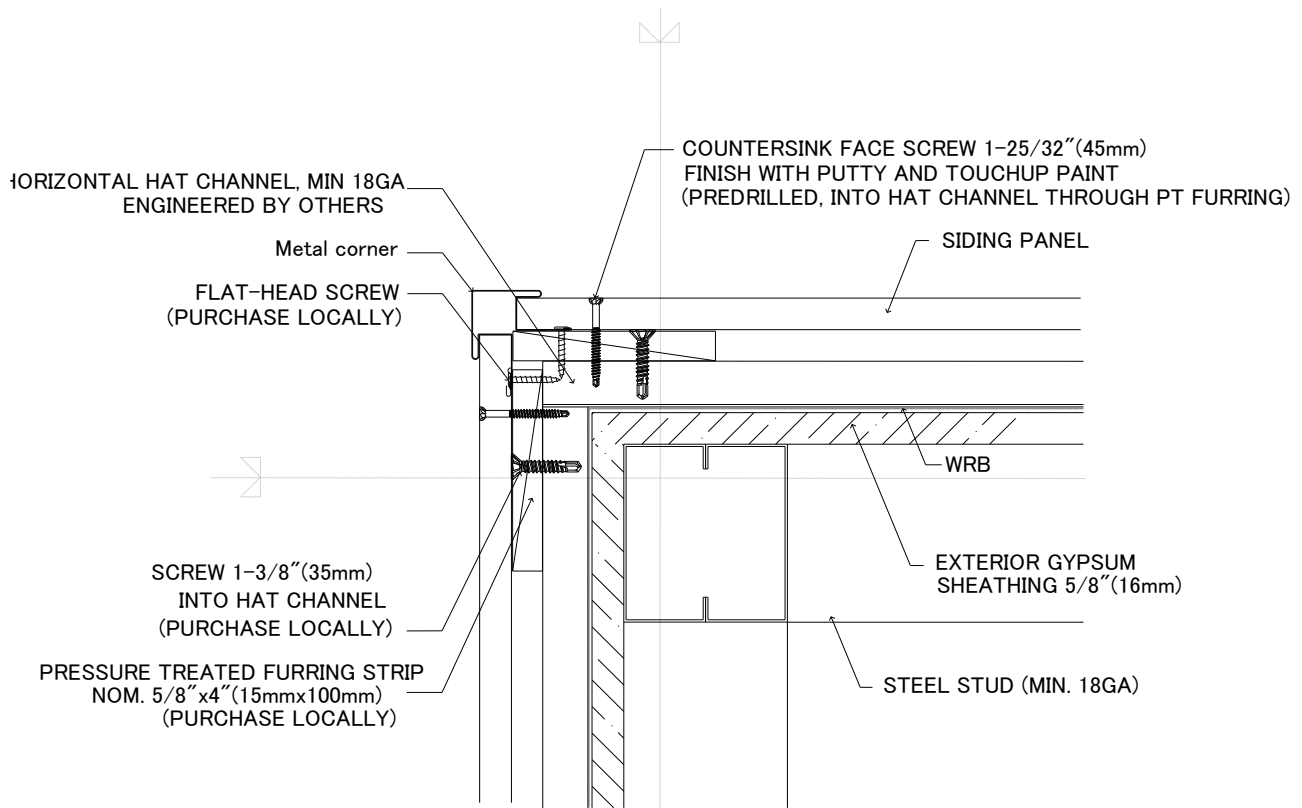
- Pre-formed corners on some products do not need to be used with Metal Caulking Joiners because these textures have bottom shiplapped edges.



7. Steel Frame - Gypsum Sheathing - Vertical Application

<6> Install Outside Corner (Metal)

- Install vertical furring strips (pressure treated) behind both sides of the outside corner.
- Install metal outside corners on the furring strips.
- Install the metal outside corners so as to have approximately 1/2" of space between the sill flashings and the corners.
- Metal outside corners should cover the cut edges of the panels by at least a 3/8".

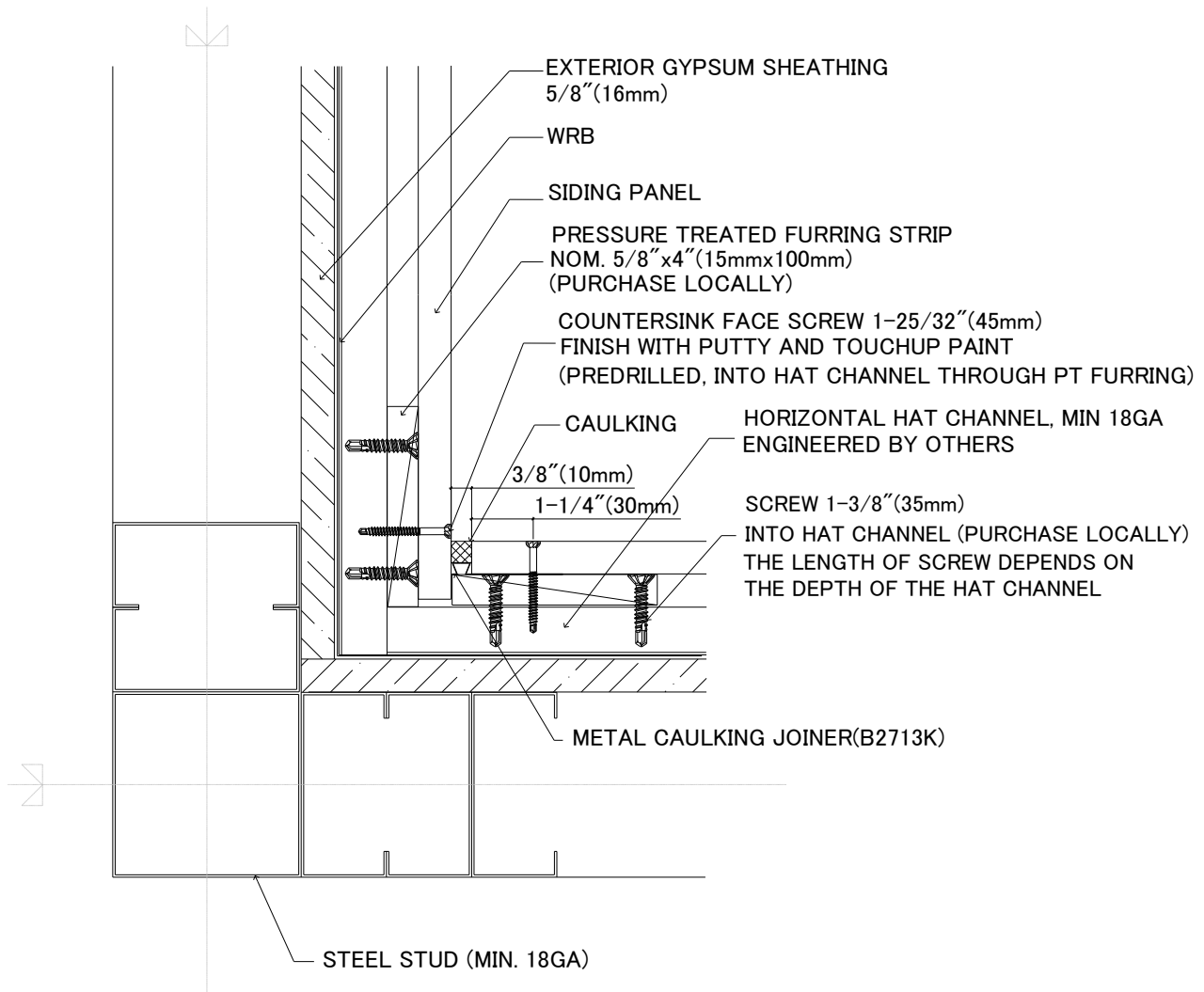


7. Steel Frame - Gypsum Sheathing - Vertical Application

<7> Install Inside Corners

▲ Make sure to remove the shiplapped edge of the siding panels.

- Use pressure treated furring, predrill pilot holes and attach the siding with face screws.
- Screw the panels at least 1-1/4" from any panel edge at 16" on center. After installation, follow directions on page 22 for screw head repair.
- The joiner will provide approximately 3/8" of space for caulking.



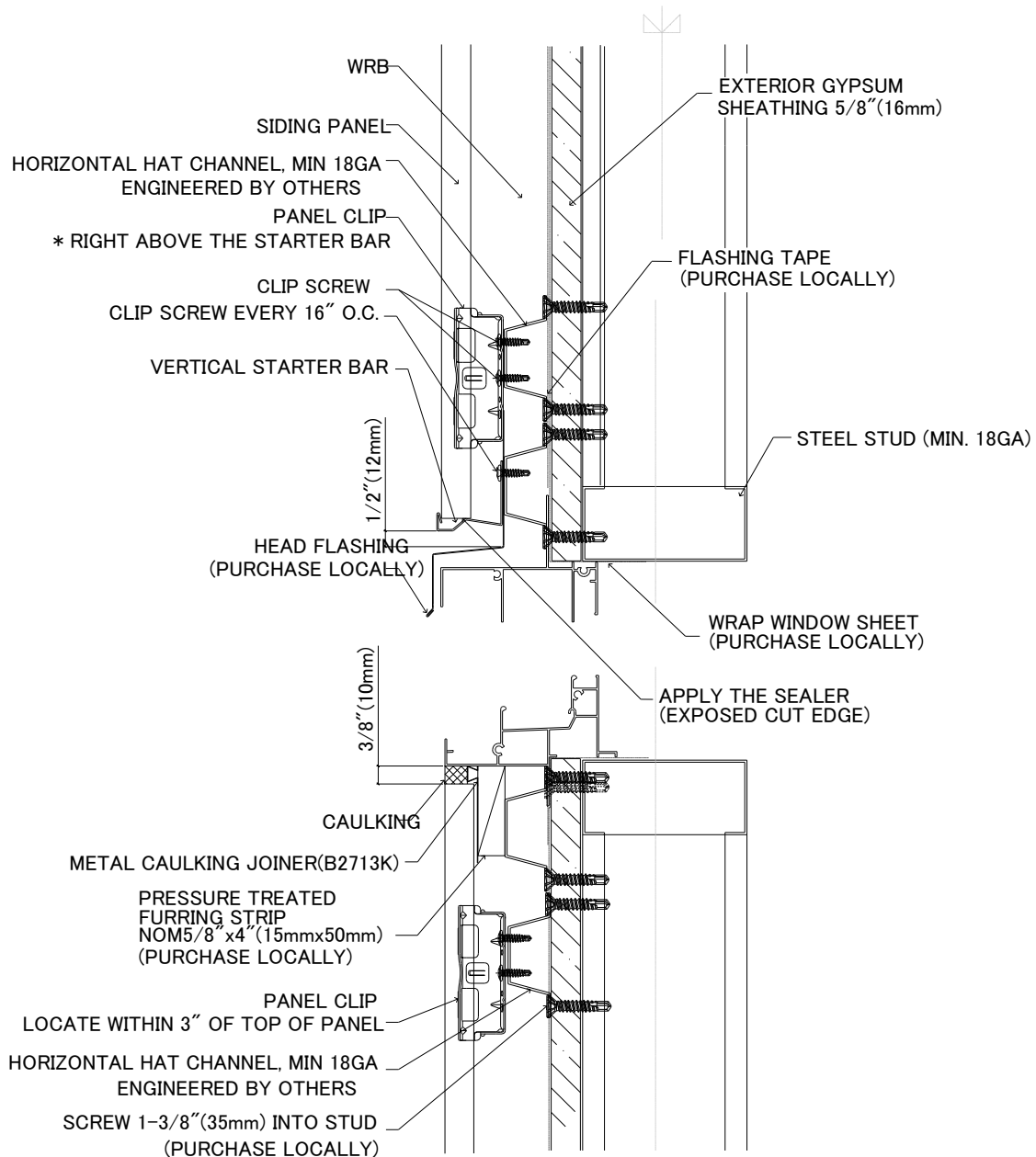
7. Steel Frame - Gypsum Sheathing - Vertical Application

<8a> Openings (Above and Below)



• Use metal caulking joiners or backer rod to provide 3/8" joints between window frames and panels. Butt joints with a triangular bead of caulking can result in sealant failure.

- Install the starter bars above the openings with clip screws at 16" on center.
- Fasten the panels with panel clips above and below the opening.



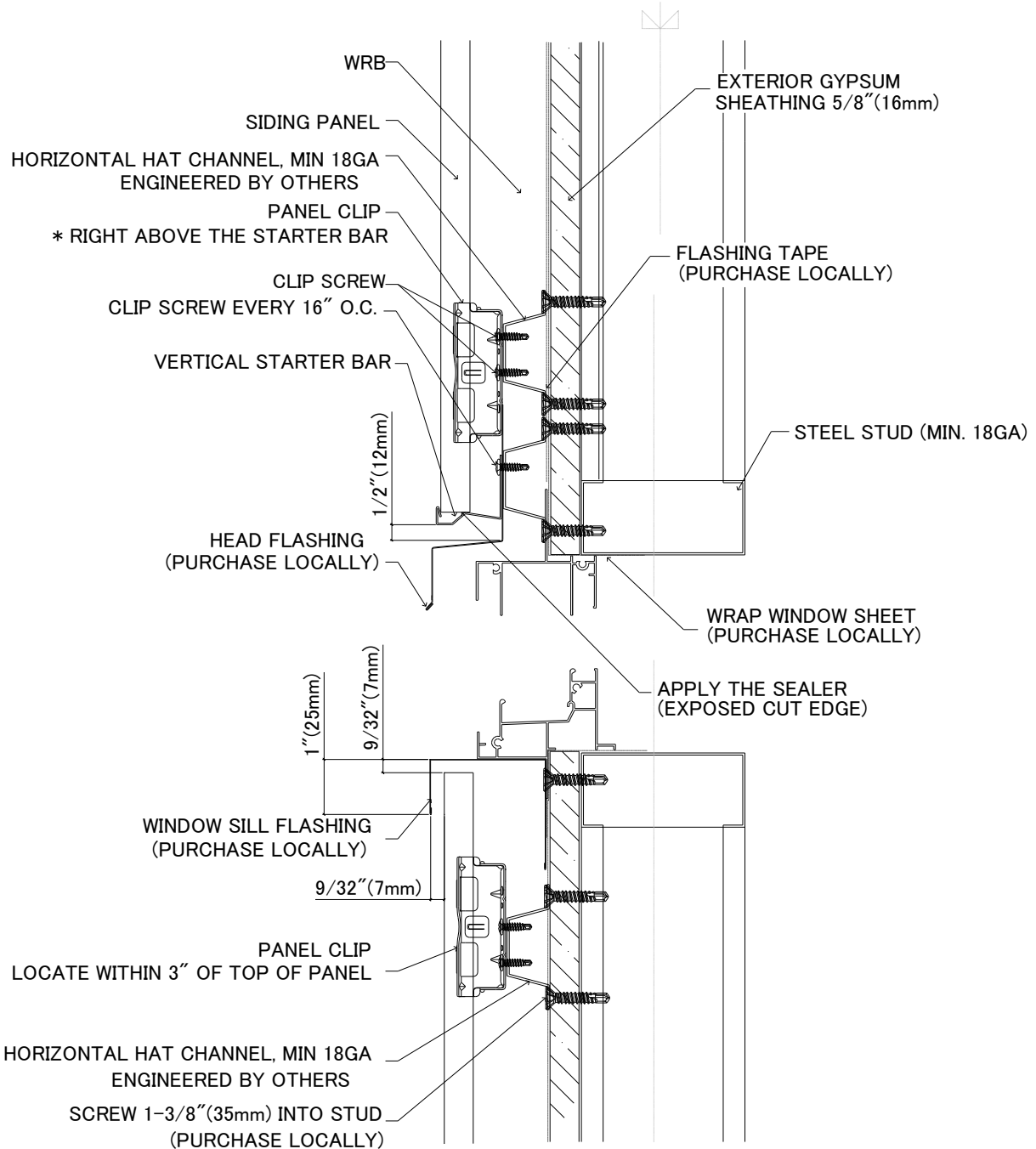
Refer to "Precautions for Vertical Installation" (P78).

7. Steel Frame - Gypsum Sheathing - Vertical Application

<8a> Openings (Above and Below)

When finishing the below of openings with flashing

- Install the starter bars above the openings using clip screws at 16" on center.
- Fasten the panels with panel clips.

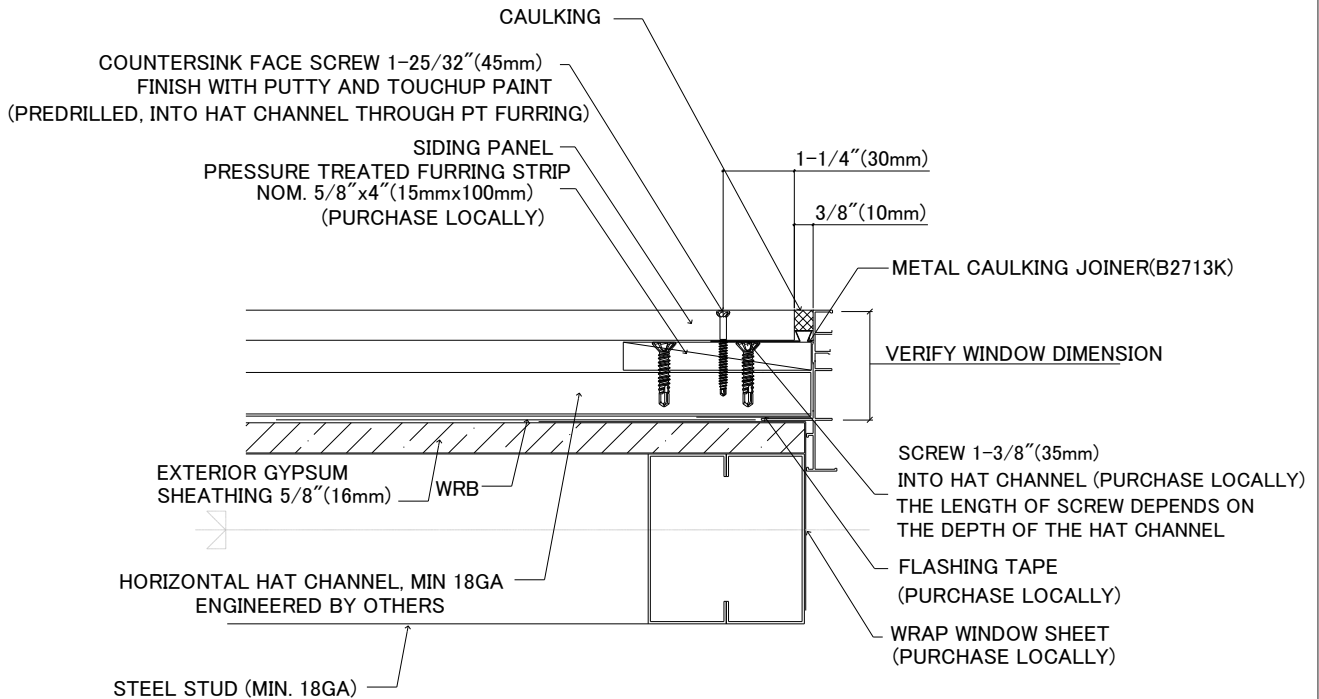


7. Steel Frame - Gypsum Sheathing - Vertical Application

<8b> Openings (Sides/Jambs)

- Install a metal caulking joiner to provide a profile for a sealant joint.
- Use a furring strip, predrill holes and screw at least 1-1/4" from any panel edges at 16" on center.
- Refer to page 22 for repair of screw heads.

 **Make sure to remove the shiplapped edges of the panels.**

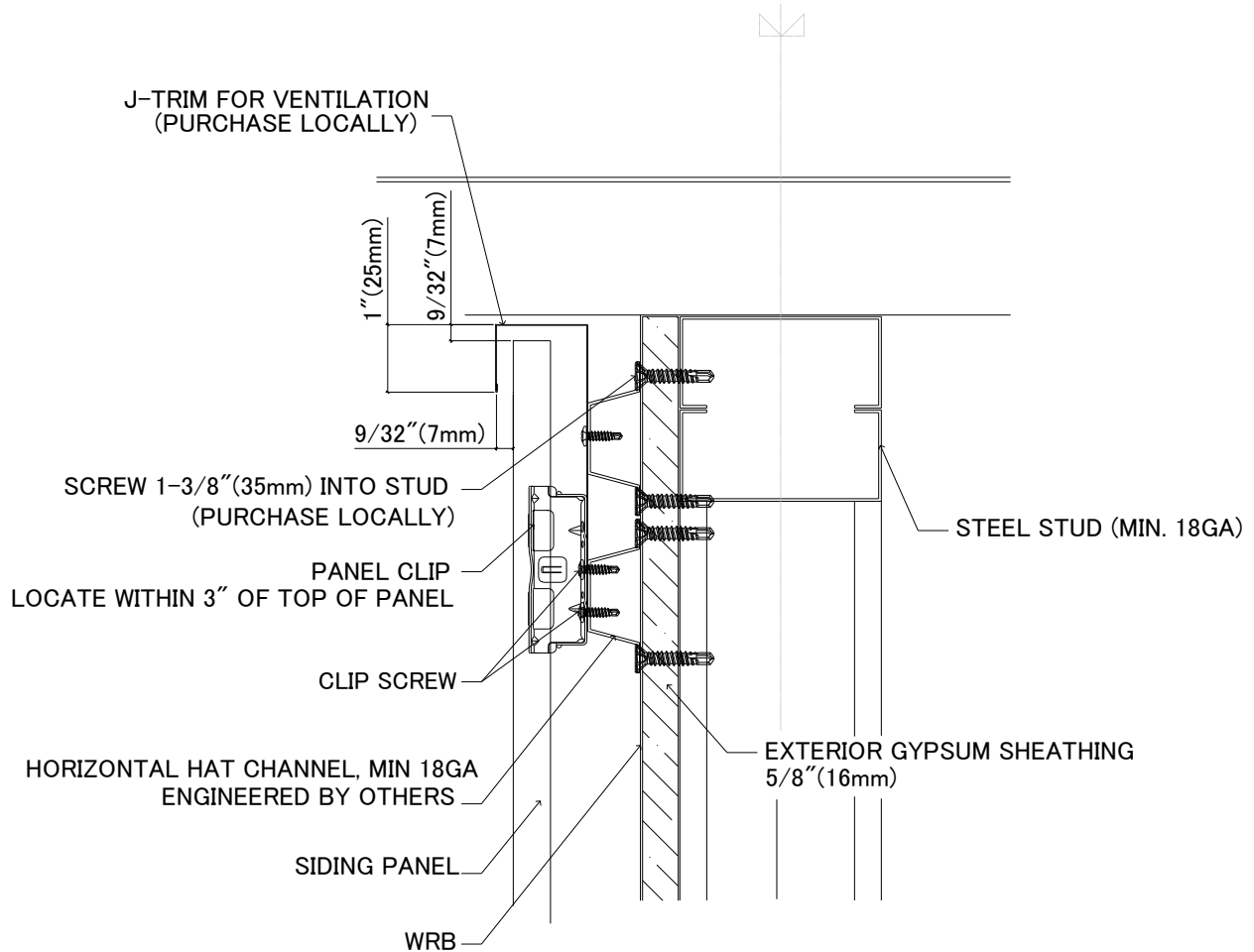


7. Steel Frame - Gypsum Sheathing - Vertical Application

<9> Top of Wall

- Install the panels so as to have 9/32" space between the soffit flashing and the panel as shown on the figure below.
- Install top panel clip within 3" of the top of each panel.

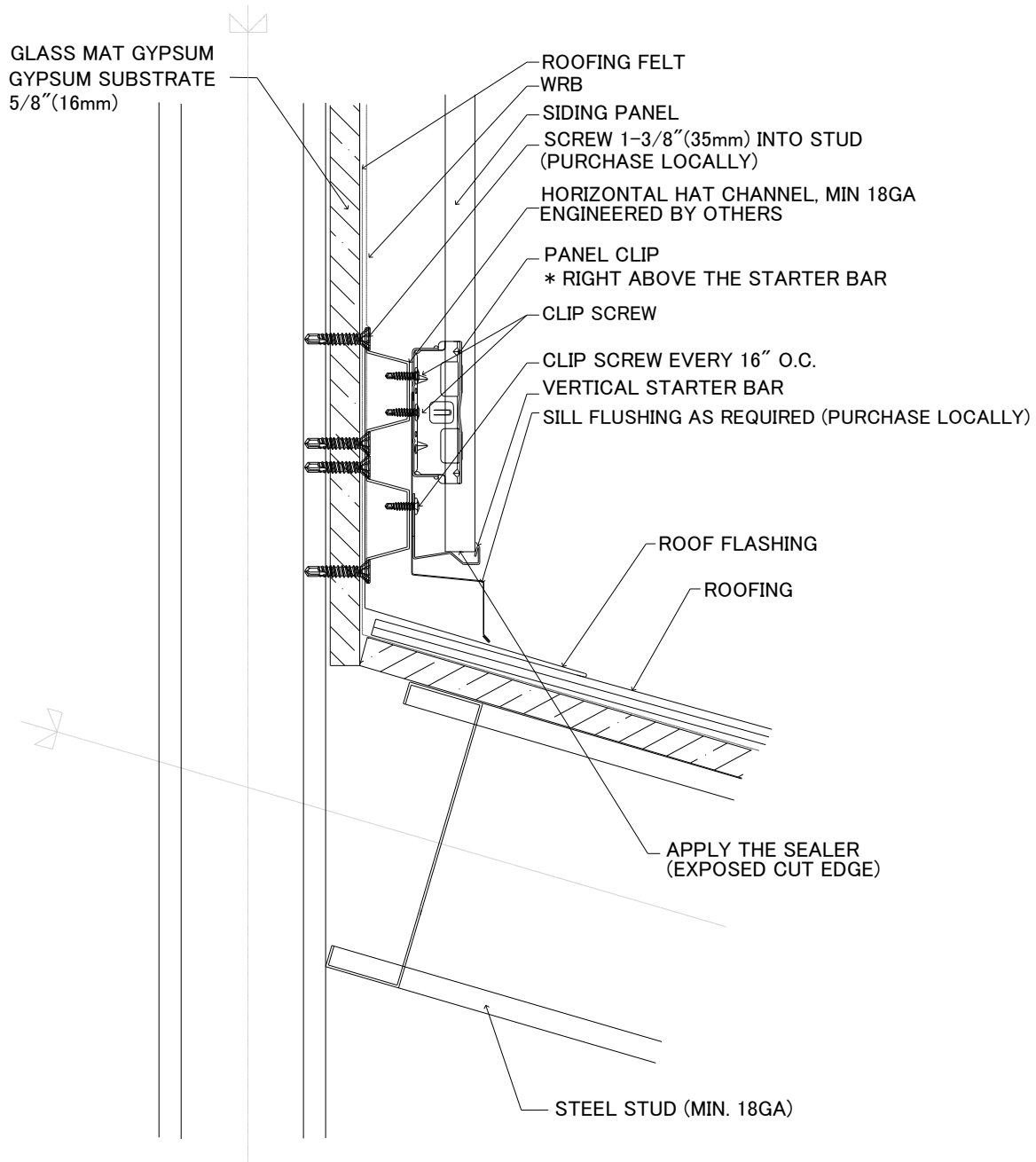
▲ When soffit flashing is not feasible (for gable walls, etc.): Apply caulking between the top of the siding panels and the soffit so that the air coming through the air cavity is exhausted through the soffit or attic.



7. Steel Frame - Gypsum Sheathing - Vertical Application

<10a> Intersection With Roof (Ridge Side)

- Keep 1/2" space between the roof flashings and siding panels for ventilation of the rain screen system.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).

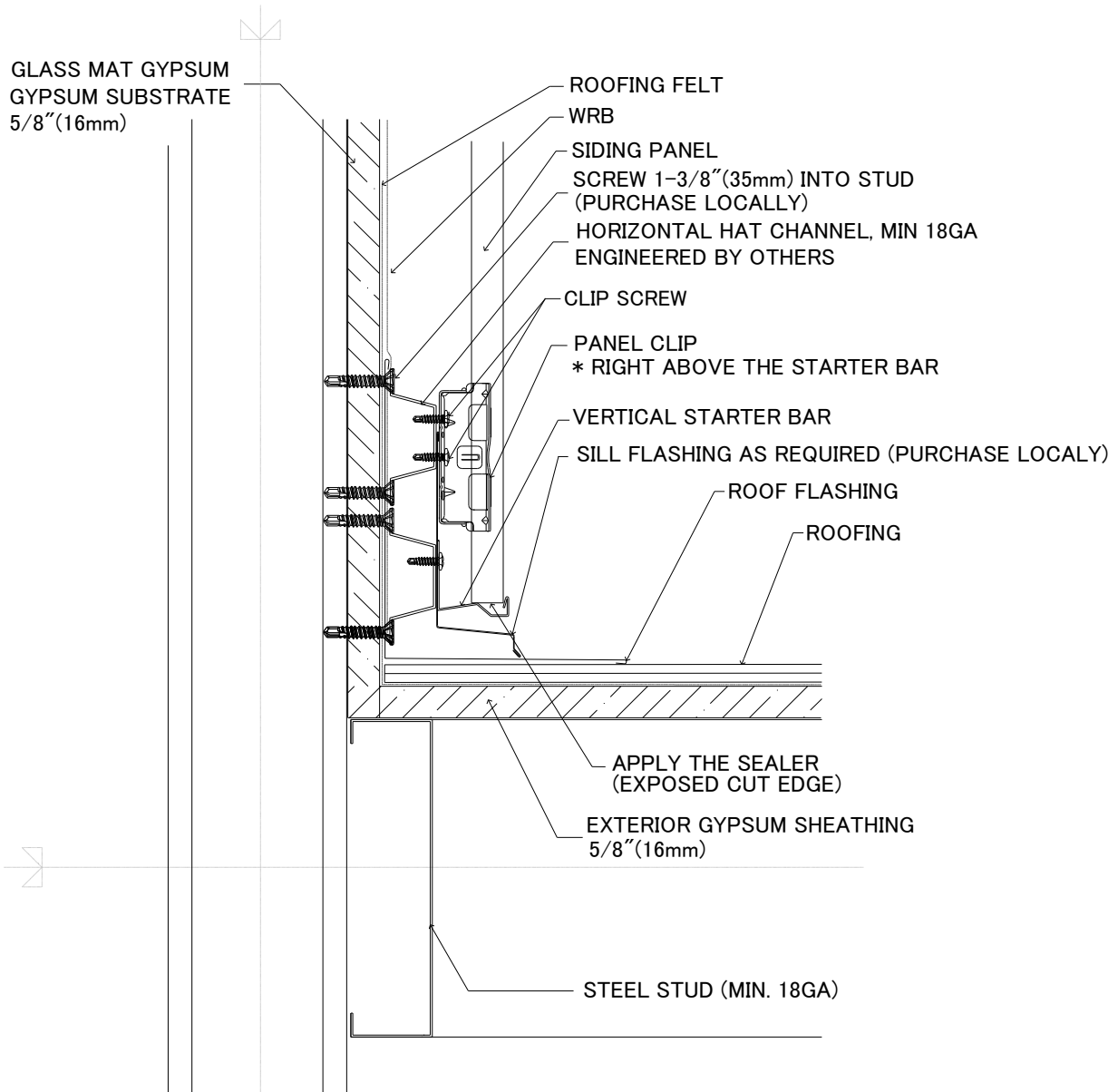


Refer to "Precautions for Vertical Installation" (P78).

7. Steel Frame - Gypsum Sheathing - Vertical Application

<10b> Intersection With Roof (Slope Side)

- Keep 1/2" space between the roof flashings and siding panels for ventilation of the rain screen system.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).



8. Continuous Insulation (CI) - Horizontal Application

<1> Siding Panel Installation Accessories

<2> Installation Overview

<3> Starter Bar Installation

<4> Install Panel Clips

<5> Installation of Vertical Joint

<6> Through Wall Flashing

<7> Install Outside Corner (Preformed)

Install Outside Corner (Metal)

<8> Install Inside Corners

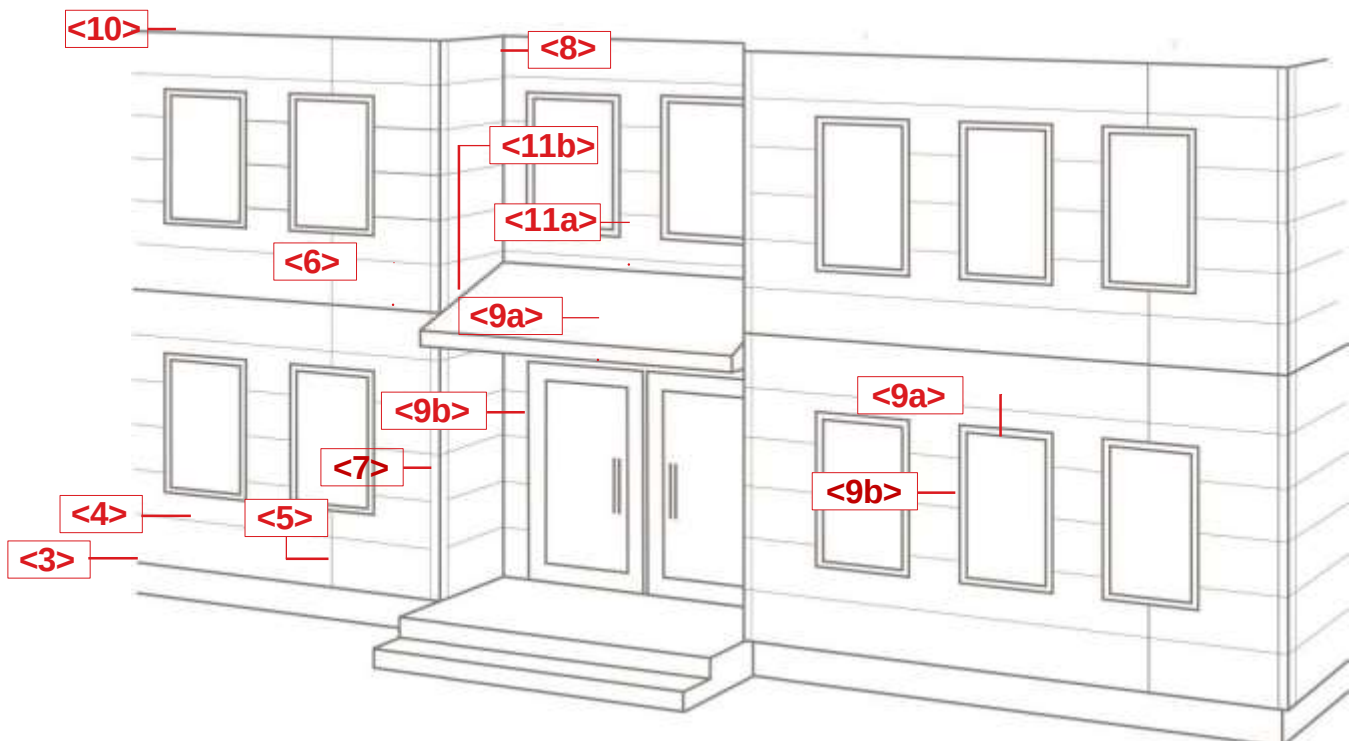
<9a> Openings (Above and Below)

<9b> Openings (Sides/Jambs)

<10> Top of Wall

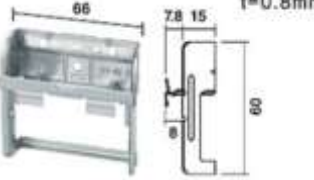
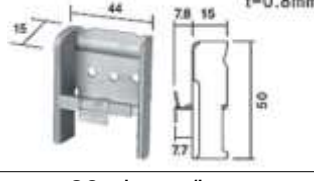
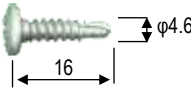
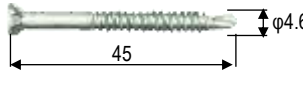
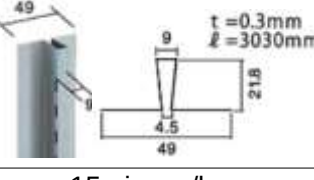
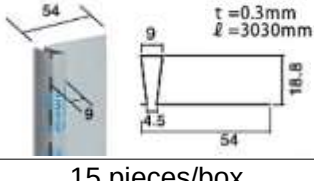
<11a> Intersection With Roof (Ridge Side)

<11b> Intersection With Roof (Slope Side)



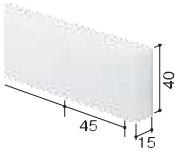
8. Continuous Insulation (CI) - Horizontal Application

<1> Siding Panel Installation Accessories

Name (SKU)	Photo	Material	Places of application
Starter bar for horizontal application (B101152)	 4 pieces/box	Hot-dip zinc-aluminum-magnesium alloy coated steel	Serve as a support for the first panels in the case of horizontal installation. Applied on the sill of the building before the installation of the panel.
Panel clip (B10115)	 30 pieces/bag	Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the panel to a wood substructure
Corner Clip (B101153)	 20 pieces/bag	Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the preformed corners
Long clip (B10155)	 6 pieces/box	Hot-dip zinc-aluminum-magnesium alloy coated steel	It is used for fastening the panel to a wood substructure at increased wind loads
Clip screw 16 for steel substructure (B885116)	 500 pieces/box	Stainless steel	Used for attaching clips to a wood substructure
Face screw 45 for steel substructure (B885245)	 200 pieces/box	Stainless steel	It is used to fasten the panel in places where the use of clips is impossible or necessary to strengthen the fastening
Metal Caulking Joiner (B2722)	 15 pieces/box	Zinc/aluminum coated steel	It is used on vertical joints of panels
Metal Caulking Joiner One-side (B2719K)	 15 pieces/box	Zinc/aluminum coated steel	It is applied on the inside corners, between the opening flashing and the panels

8. Continuous Insulation (CI) - Horizontal Application

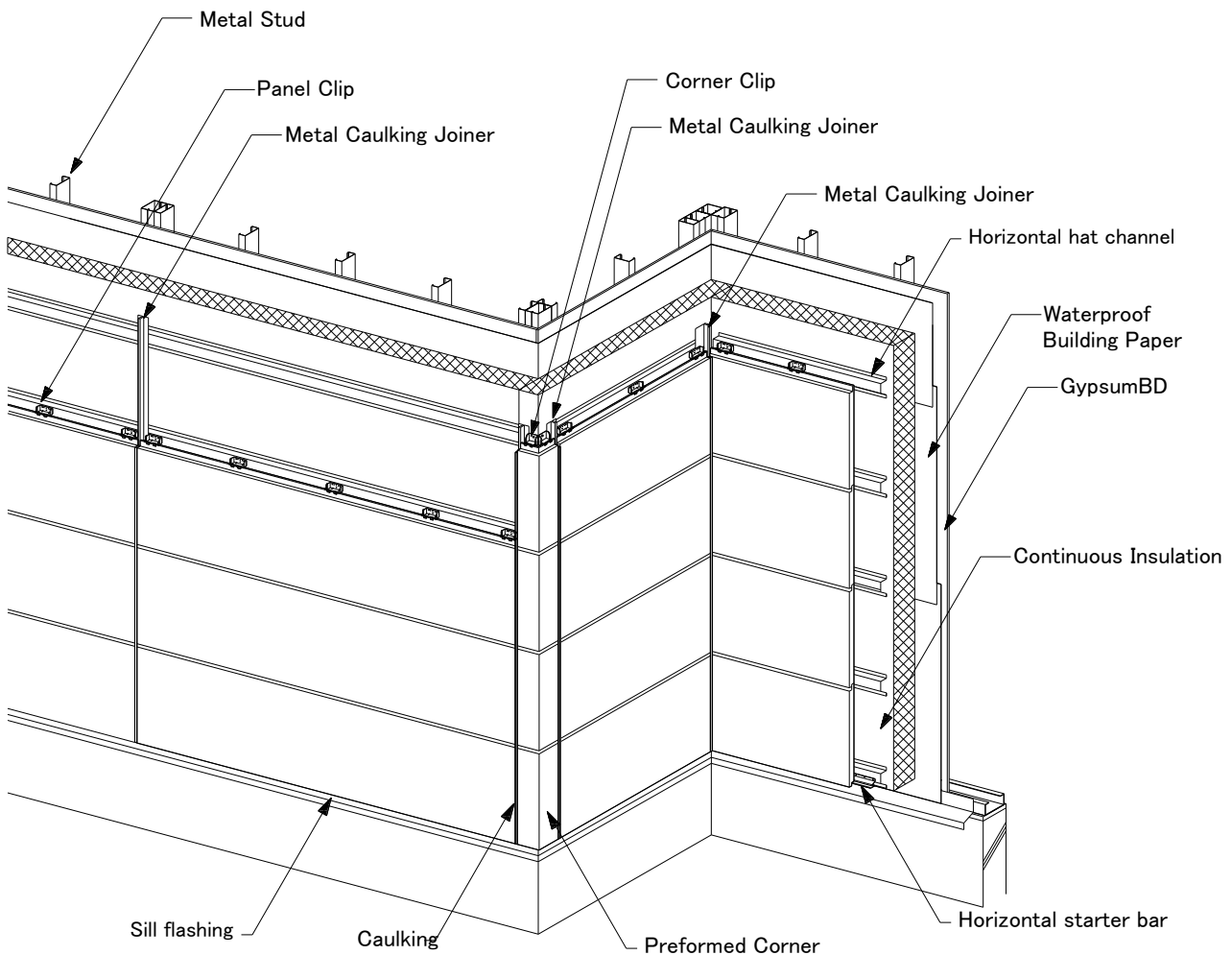
<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Spacer 15 (RY82S15)		Polypropylene	Used as backing for face fastener locations to eliminate deflection of the panel.
	22 blocks/strip 6 strips/box		
Water proof sealer (LTKMB3103C)		Silane water repellent	It is applied on the cut edges
	1 piece		
Repair putty (B4901)		Acrylic emulsion	It is used for scratches, chips and holes from face screws.
	1 piece		
Repair paint (Different for each SKU)		—	It is used on spots where putty is applied and scratches.
	1 set/box		

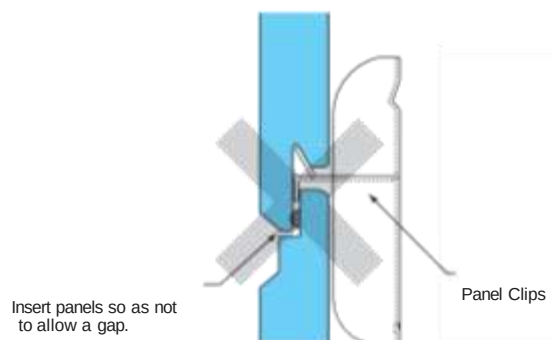
8. Continuous Insulation (CI) - Horizontal Application

<2> Installation Overview

- Install starter bars at the base of the wall.
- Install starter bars so as to hold both siding panels and pre-formed corners.
- Install siding panels with panel clips and pre-formed corners with corner clips.
- Clips have several holes for screws. Fasten clips at 16" (400mm) on center with two screws per clip.
- At the top of a wall, below or above an opening, or in any situation where the panel's shiplaps have been removed, clips cannot be used. Install nom. 5/8" PT furring behind the areas to fasten, predrill pilot holes and install face screws with a minimum distance of 1-1/4" from the siding panel edge. After installation, follow directions on page 22 for screw head repair.



- Install siding panels so as not to allow gaps between them.



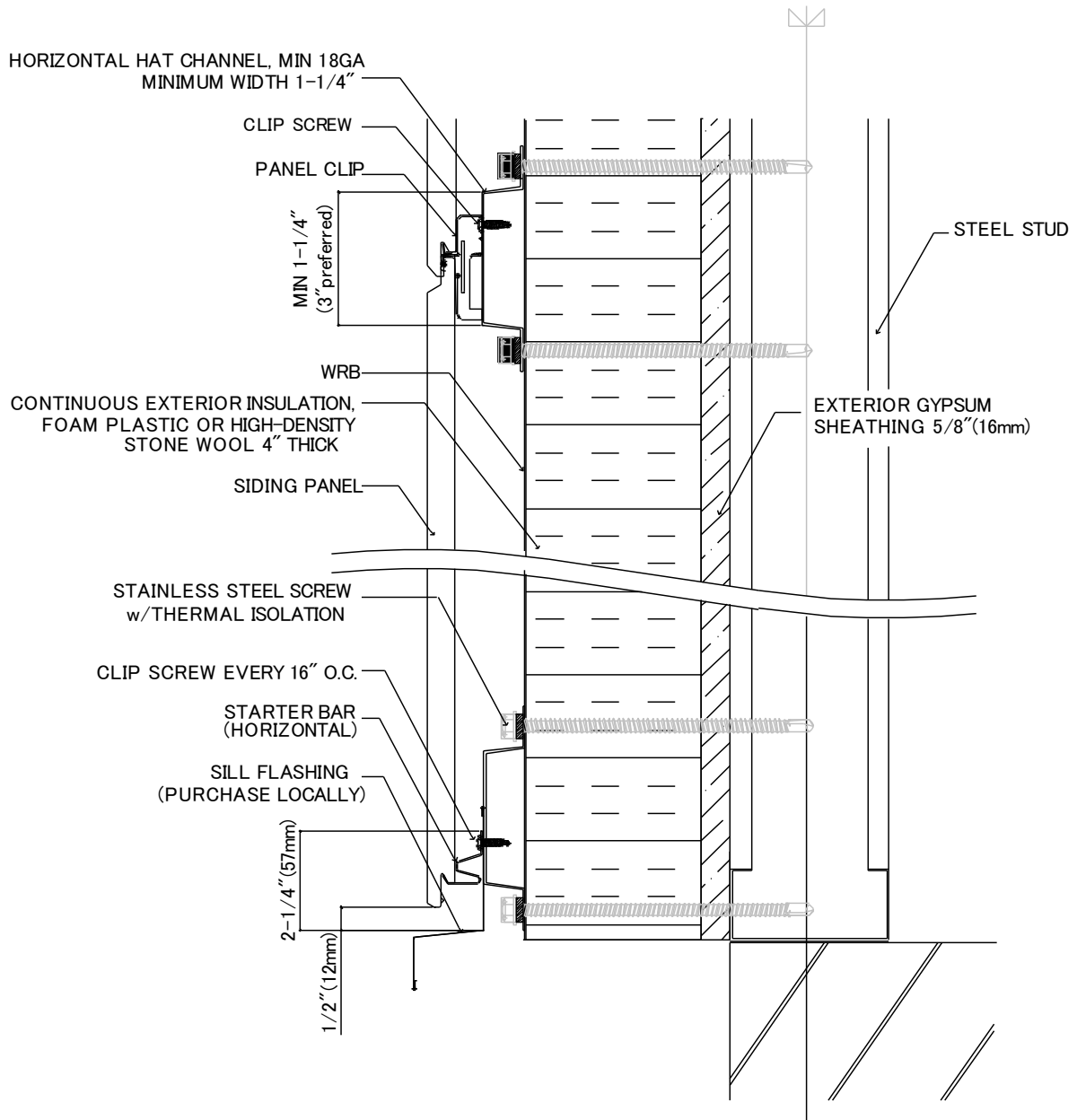
8. Continuous Insulation (CI) - Horizontal Application

<3> Starter Bar Installation

- Starter Bars at the base of the wall serve as the reference for the CERACLAD installation so ensure they are level.

 **Make sure that siding panels are level at each row.**

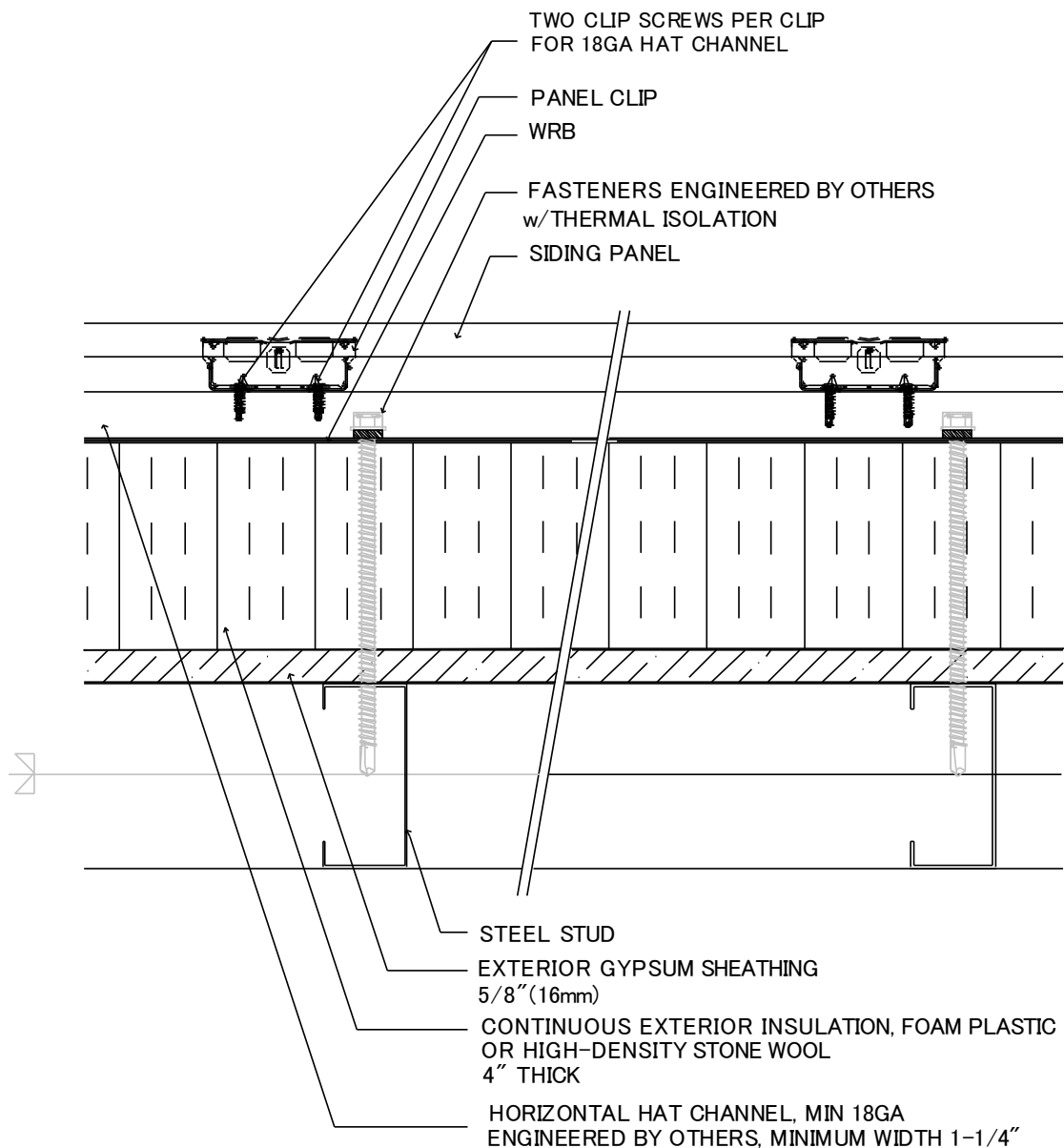
- Fasten the starter bars with clip screws at 16" on center into studs.
- Fasten the starter bars so as to allow approximately a 1/2" gap between the sill flashings and siding panels.



8. Continuous Insulation (CI) - Horizontal Application

<4> Install Panel Clips

- Fasten a **Panel Clip** securely at 16" on center with **2 screws** per clip.



8. Continuous Insulation (CI) - Horizontal Application

<5> Installation of Vertical Joint

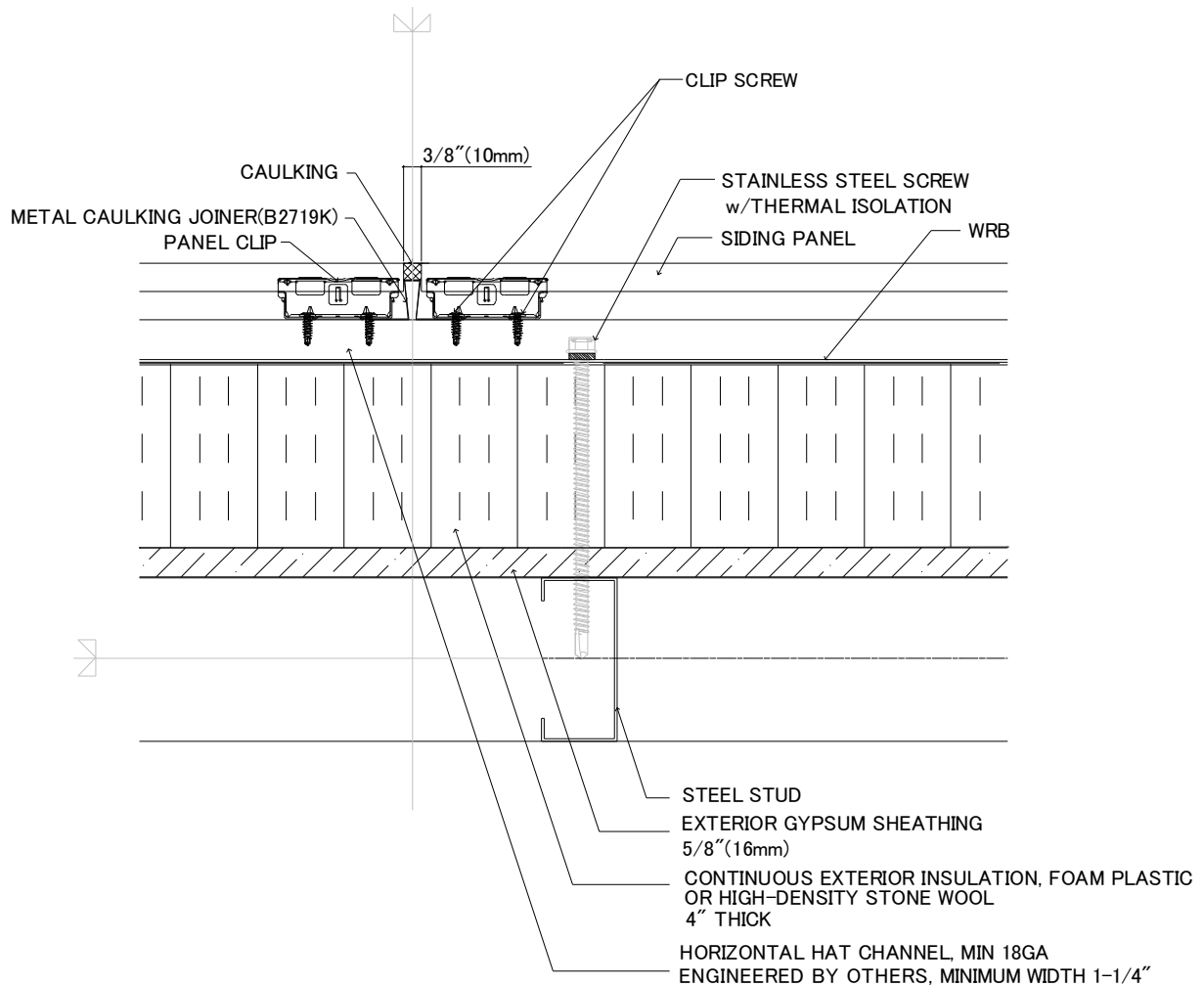
- Use the double sided metal caulking joiners for vertical joints to establish the proper profile for a sealant joint.

▲ **Attach the caulking joiner with screws staggered at 24" on center.**

- Install panel clips on the panels within 3" of the panel end and adjacent to the joiner as shown below.

- Fasten a **Panel Clip** securely with **2 screws**.

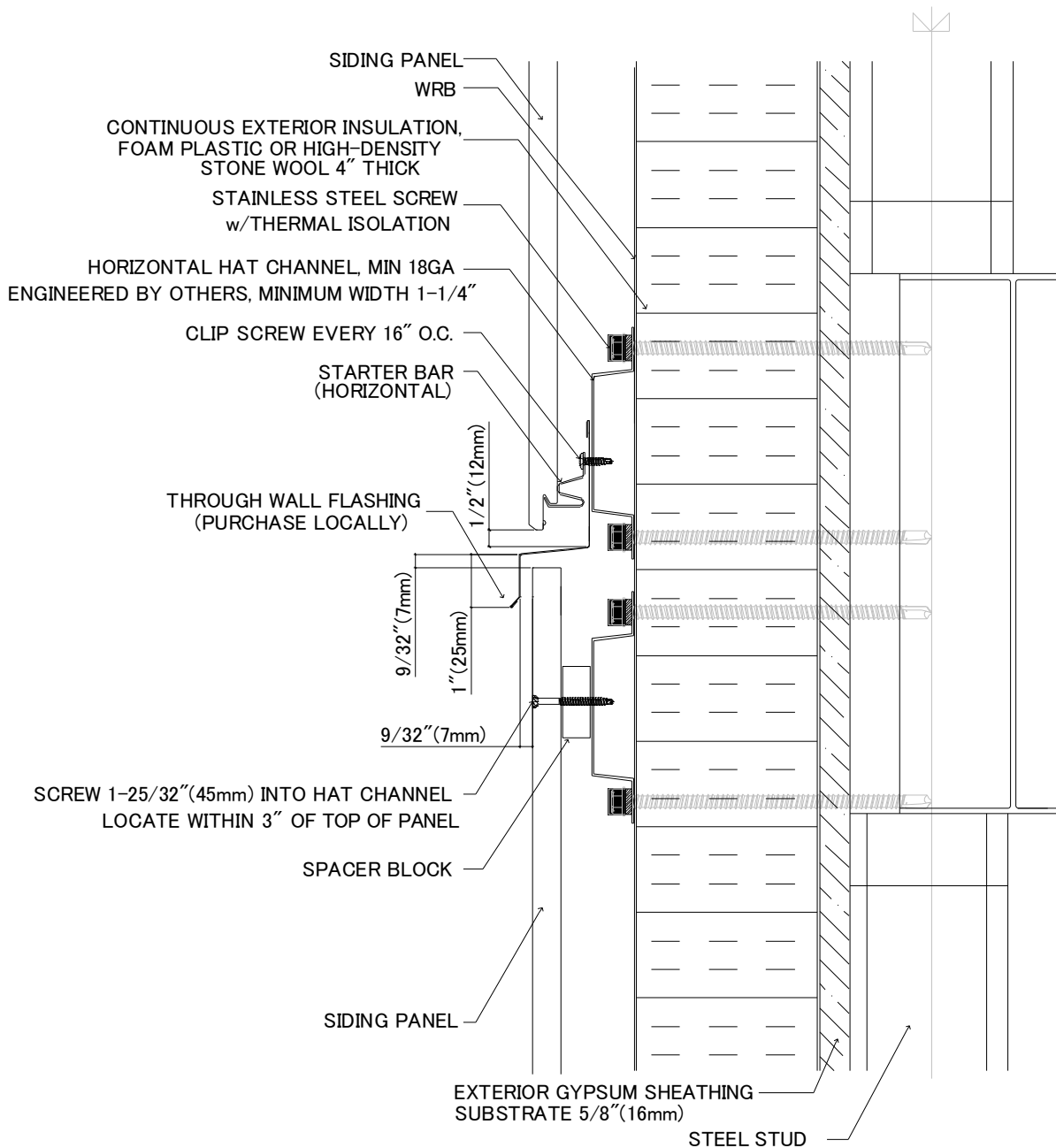
▲ **Panel clips may be installed on top of the metal caulking joiner's flange.**



8. Continuous Insulation (CI) - Horizontal Application

<6> Through Wall Flashing

- Install furring blocks behind the siding panels above which the through wall flashings will be installed, predrill pilot holes, and fasten the panels with face screw every 16" at least 1-1/4" from the panel's edge. Finish screw heads according to directions on Pg. 22.
- Keep 9/32"(7mm) space between the upper edge of panel and flashing and install the through wall flashing.



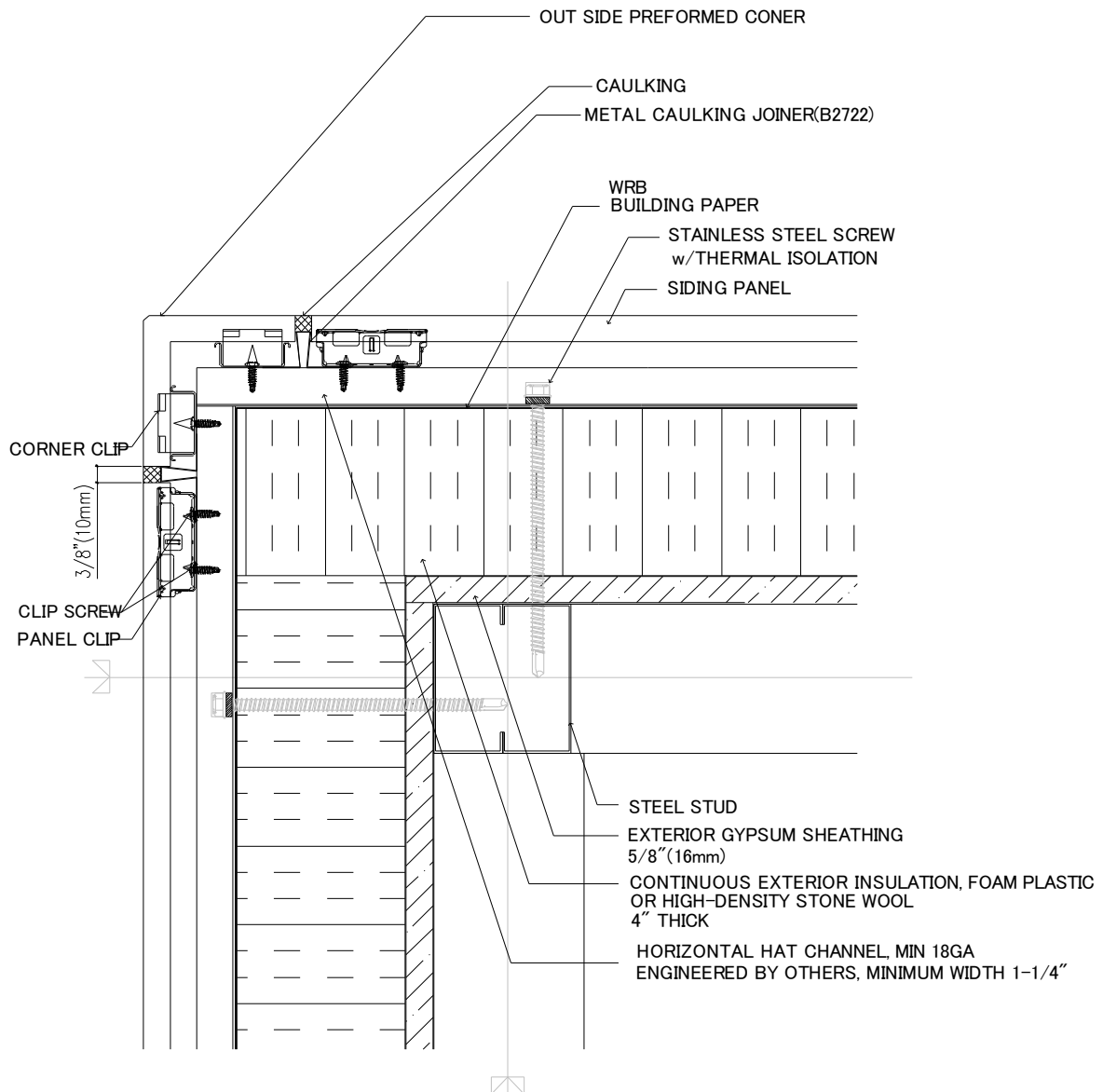
8. Continuous Insulation (CI) - Horizontal Application

<7> Install Outside Corner (Preformed)

- Install a preformed outside corner with two corner clips.
- Install corner clip securely with one clip screw.
- Install metal caulking joiners between the preformed outside corners and the panels.

▲ **Attach the caulking joiner with screws staggered at 24" on center.**

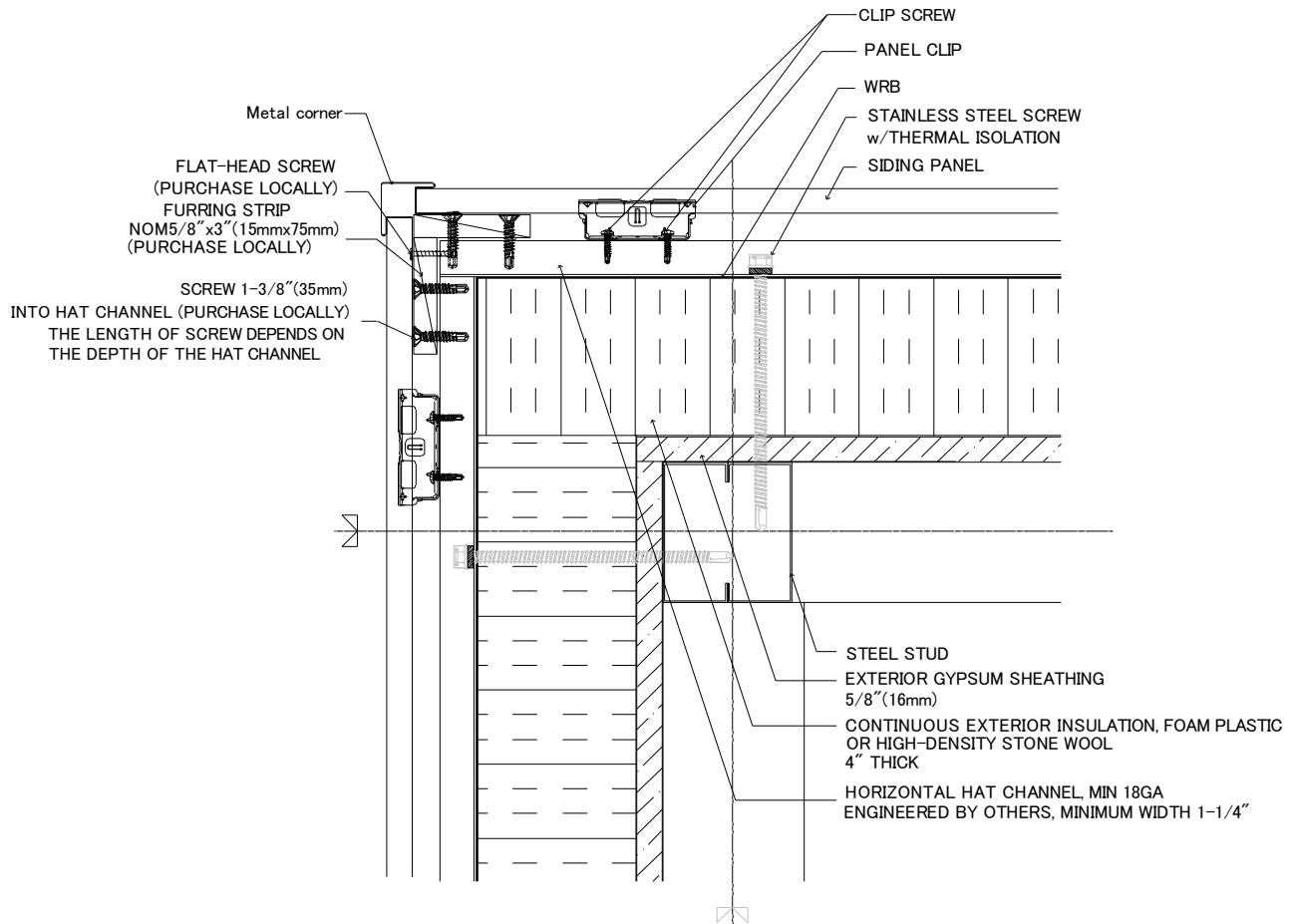
- Install preformed corners to be level with the siding panels.



8. Continuous Insulation (CI) - Horizontal Application

<7> Install Outside Corner (Metal)

- Install vertical furring strips (pressure treated) behind both sides of the outside corner.
- Install metal outside corners on the furring strips.
- Install the metal outside corners so as to have approximately 1/2" of space between the sill flashings and the corners.
- Metal outside corners should cover the cut edges of the panels by 3/8" or more.

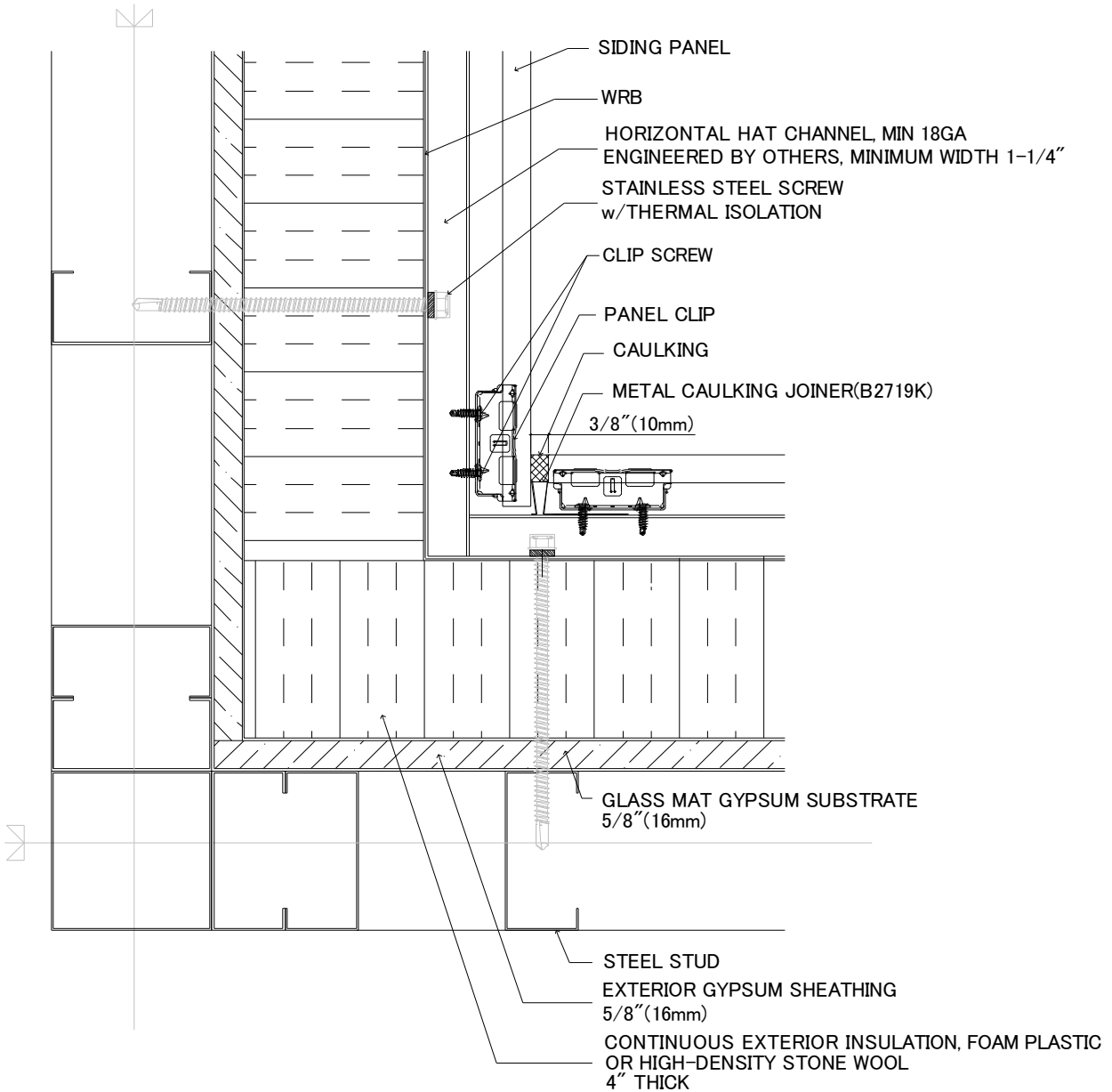


8. Continuous Insulation (CI) - Horizontal Application

<8> Install Inside Corners

 Install a metal caulking joiner to provide a profile for a sealant joint.

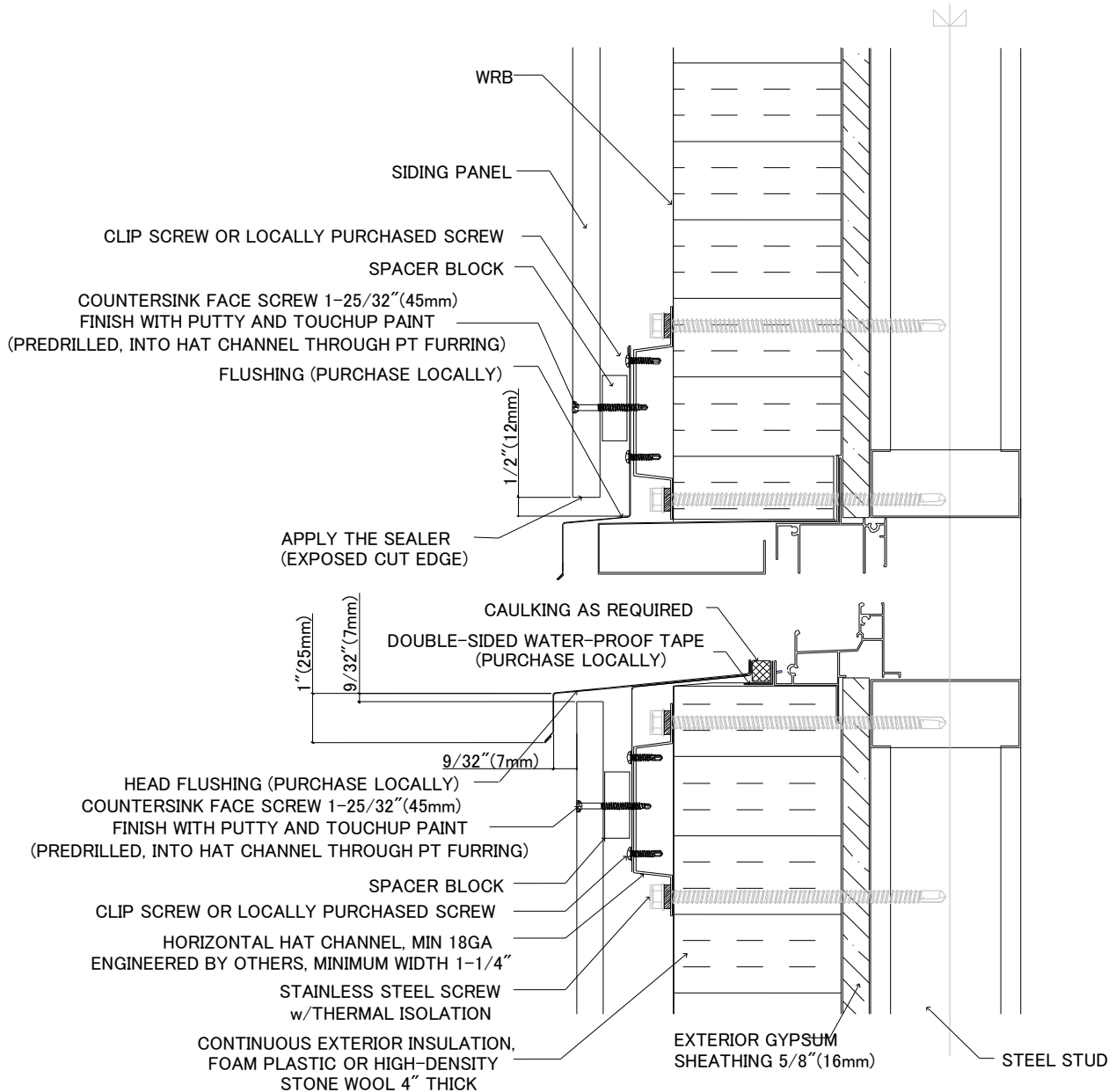
- The joiner will provide approximately 3/8" of space for caulking.



8. Continuous Insulation (CI) - Horizontal Application

<9a> Openings (Above and Below)

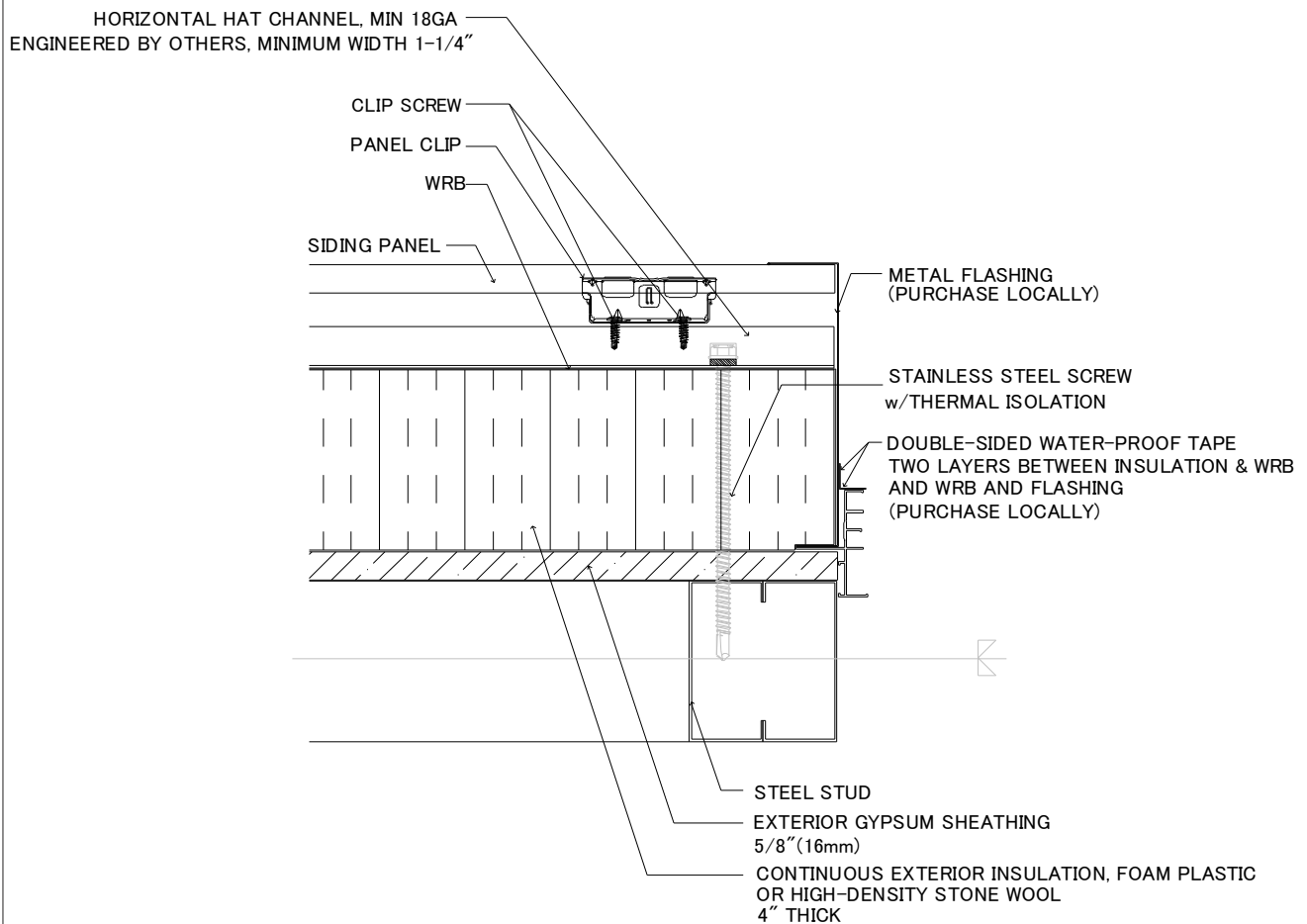
- Unevenness caused by window flashing should be adjusted with shims.
- Install furring strips above and below openings, predrill pilot holes, and fasten the panels with face screws at least 1-1/4" from the panel's edge.
- Refer to page 22 for screw head repair.



8. Continuous Insulation (CI) - Horizontal Application

<9b> Openings (Sides/Jambs)

Install a metal caulking joiner to provide a profile for a sealant joint.

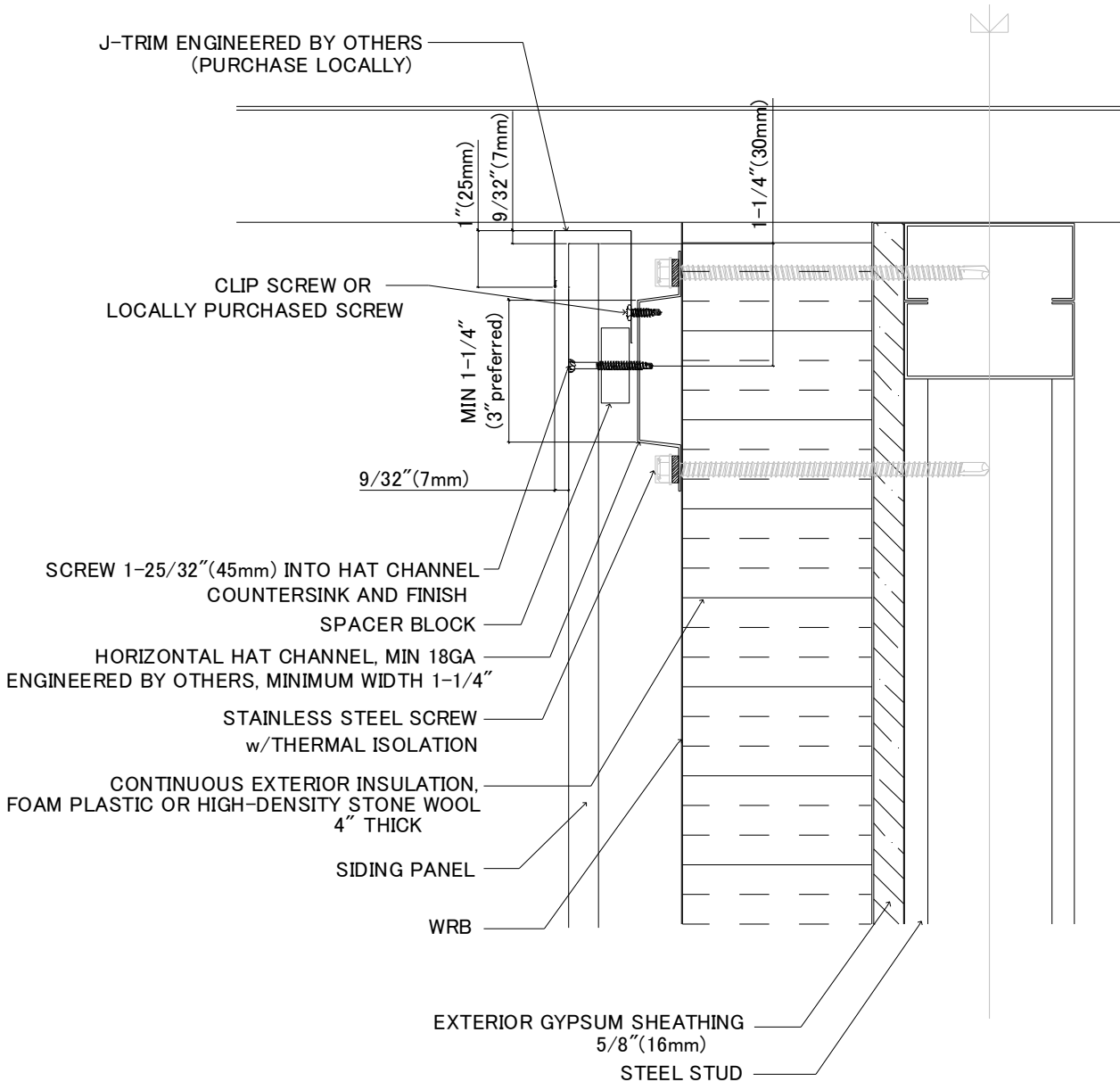


8. Continuous Insulation (CI) - Horizontal Application

<10> Top of Wall

- Install the panels so as to have 9/32" space between the soffit flashing and the panel as shown on the figure below.
- Install furring strips, predrill pilot holes and fasten the panel with stainless steel face screws.
- Fasten the top of the panel every 16" at least 1-1/4" from the panel edge. Refer to page 22 for screw head repair.

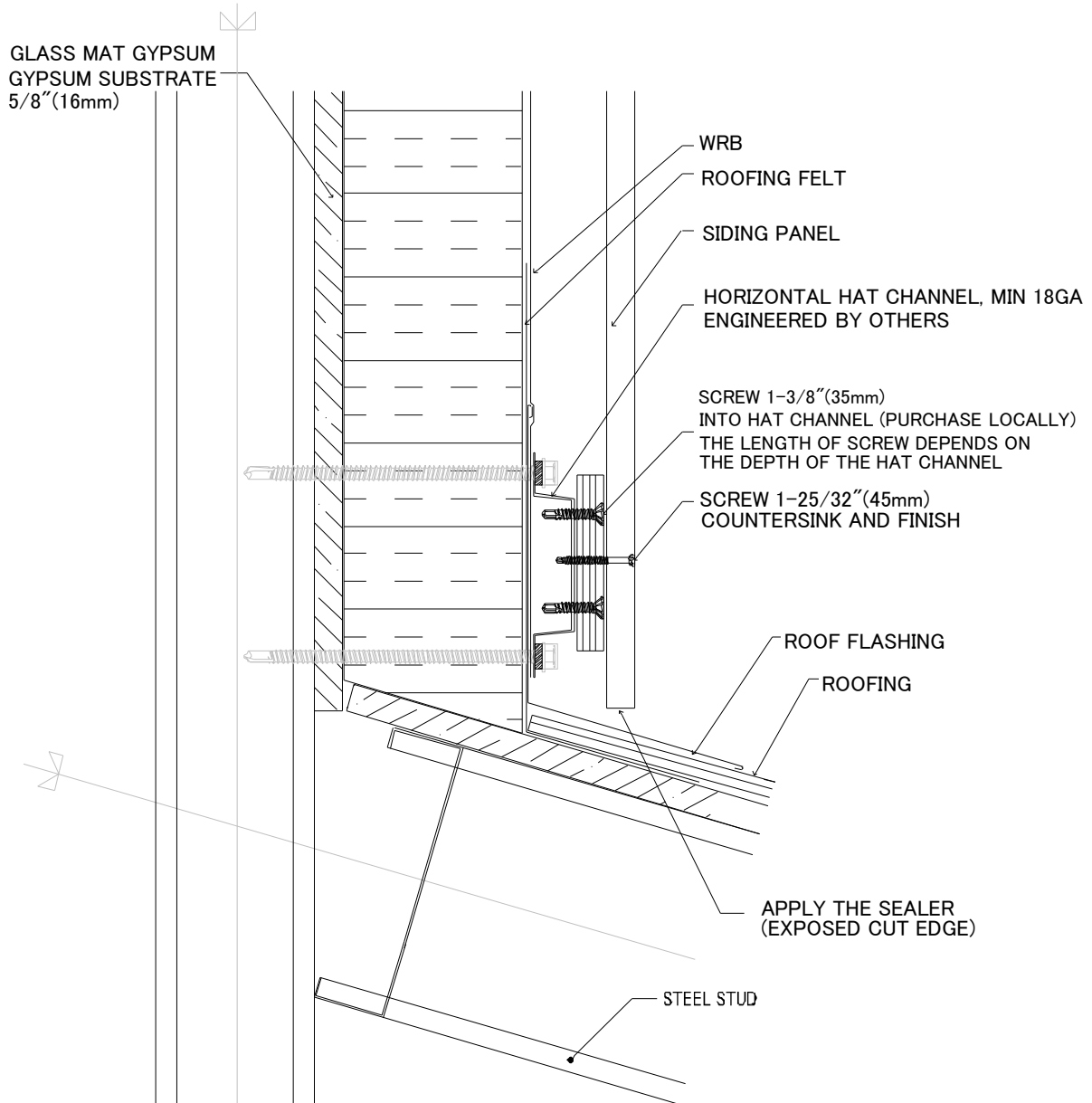
▲ **When soffit flashing is not feasible (for gable walls, etc.): Apply caulking between the top of the siding panels and the soffit so that the air coming through the air cavity is exhausted through the soffit or attic.**



8. Continuous Insulation (CI) - Horizontal Application

<11a> Intersection with Roof (Ridge Side)

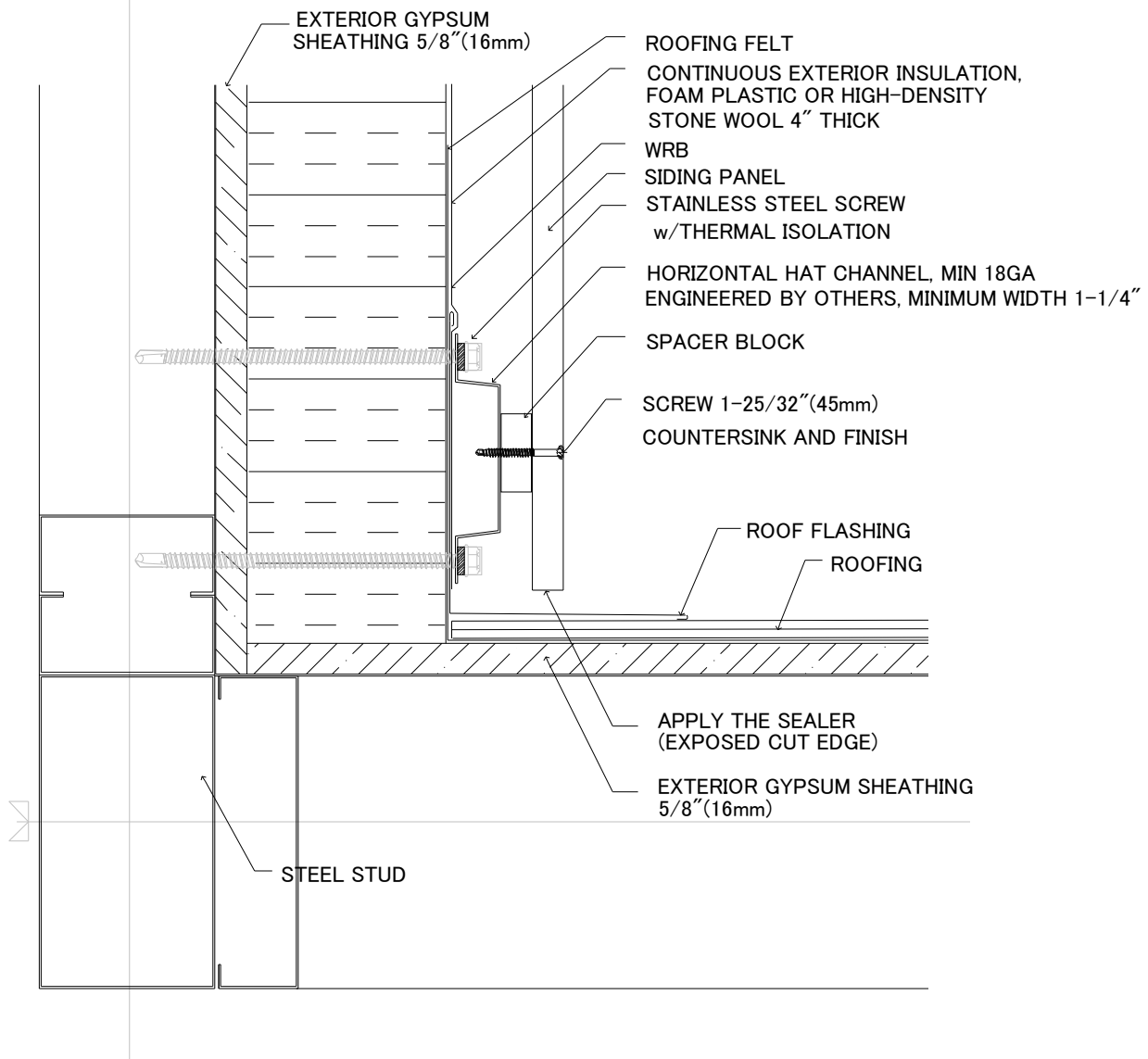
- Keep 1/2" space between the roof flashings and siding panels for draining dew condensation water and intake of the rain screen system.
- If using furring strips instead of blocks, make a 1-1/4" gap every 6' on the pressure treated furring strips for air circulation.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).



8. Continuous Insulation (CI) - Horizontal Application

<11b> Intersection with Roof (Slope Side)

- Keep 1/2" space between the roof flashings and siding panels for draining dew condensation water and intake of the rain screen system.
- If using furring strips instead of blocks, make a 1-1/4" gap every 6' on the pressure treated furring strips for air circulation.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).



9. Continuous Insulation (CI) - Vertical Application

<1> Siding Panel Installation Accessories

<2> Installation Overview

<3> Starter Bar Installation

<4> Install Panel Clips

<5> Through Wall Flashing

<6> Install Outside Corner (Preformed)

Install Outside Corner (Metal)

<7> Install Inside Corners

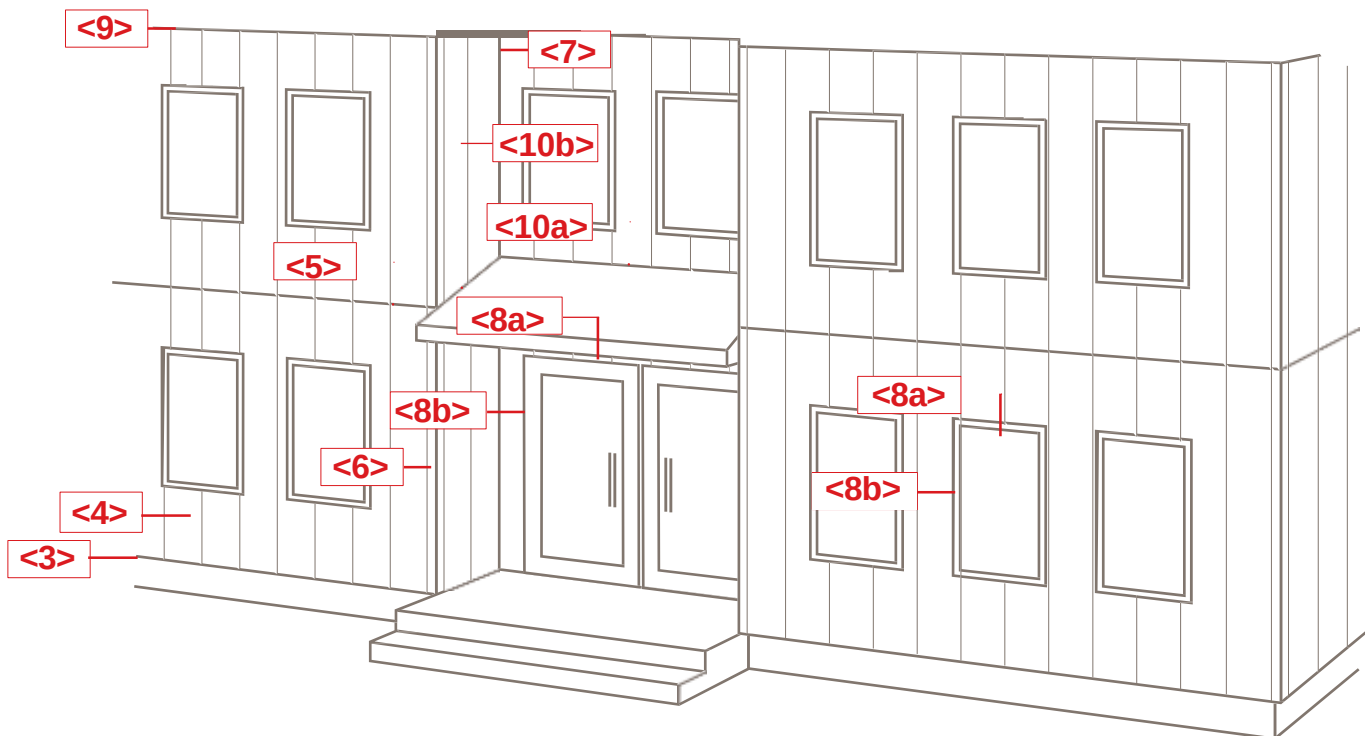
<8a> Openings (Above and Below)

<8b> Openings (Sides/Jambs)

<9> Top of Wall

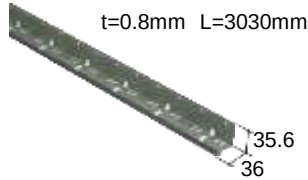
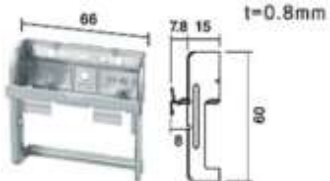
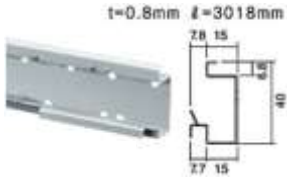
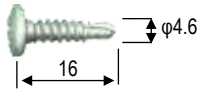
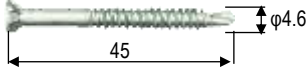
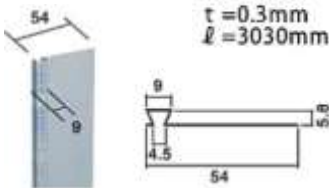
<10a> Intersection With Roof (Ridge Side)

<10b> Intersection With Roof (Slope Side)



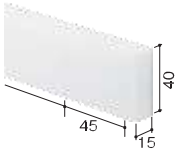
9. Continuous Insulation (CI) - Vertical Application

<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Starter bar for vertical Application (B10157HG)		Hot-dip zinc/aluminum coated steel with a polyester paint finish	Serve as a support for the first panels in the case of vertical installation. Applied on the sill of the building before the installation of the panel.
	5 pieces/box		
Cap vertical application starter bar, used for outside corner (B291W1D)		Coated galvanized steel (Zn, Al)	Attaches to a vertical application starter bar
	10 pieces/bag		
Panel clip (B10115)		Hot-dip zinc-aluminum-magnesium alloy coated steel	Used for fixing the panel to a wood substructure
	30 pieces/bag		
Long clip (B10155)		Hot-dip zinc-aluminum-magnesium alloy coated steel	It is used for fastening the panel to a wood substructure at increased wind loads
	6 pieces/box		
Clip screw 16 for steel substructure (B885116)		Stainless steel	Used for attaching clips to a wood substructure
	500 pieces/box		
Face screw 45 for steel substructure (B885245)		Stainless steel	It is used to fasten the panel in places where the use of clips is impossible or necessary to strengthen the fastening
	300 pieces/box		
Metal Caulking Joiner One-side (B2719K)		Zinc/aluminum coated steel	It is applied on the outside and inside corners, between the opening flashing and the panels
	15 pieces/box		

9. Continuous Insulation (CI) - Vertical Application

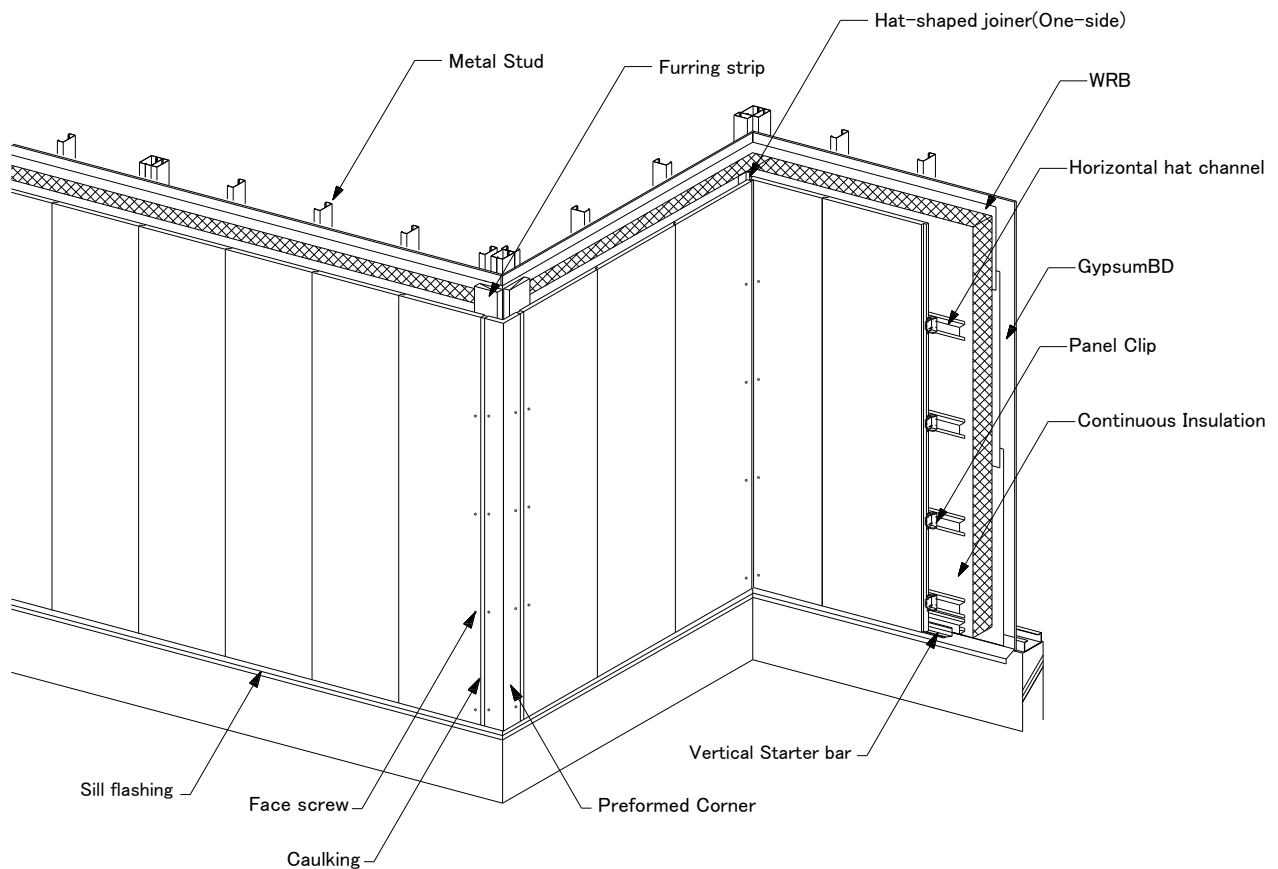
<1> Siding Panel Installation Accessories

Name (SKU)	photo	Material	Places of application
Spacer 15 (RY82S15)		Polypropylene	Used as backing for face fastener locations to eliminate deflection of the panel.
	22 blocks/strip 6 strips/box		
Water proof sealer (LTKMB3103C)		Silane water repellent	It is applied on the cut edges
	1 piece		
Repair putty (B4901)		Acrylic emulsion	It is used for scratches, chips and holes from face screws.
	1 piece		
Repair paint (Different for each SKU)		—	It is used on spots where putty is applied and scratches.
	1 set/box		

9. Continuous Insulation (CI) - Vertical Application

<2> Installation Overview

- Install starter bars at the base of each wall.
- Install starter bars so as to hold both siding panels and pre-formed corners.
- Install siding panels with panel clips.
- Clips have several holes for screws. Fasten clips at 16"(400mm) on center with two screws per clip.
- In any situation where the panel's shiplapped edges have been removed, such as the end of the wall, clips cannot be used. Install pressure treated furring, predrill holes, and fasten with face screws at least 1-1/4" from the panel edges at 16" on center.
- After installation, follow directions on page 22 for screw head repair.



- Install siding panels so as not to allow gaps between them.



Precautions For Vertical Installation:

Follow these important guidelines:

1. Make sure to use starter bars to fully support the siding panels and ensure that the starter bars are fastened onto the structural framing.
2. The lowest Panel Clip installed on each vertical siding panel must be secured as close to the starter bar as possible, at least within 3".
3. The highest Panel Clip installed on each vertical siding panel must be secured as close the top of the panel as possible, at least within 3".

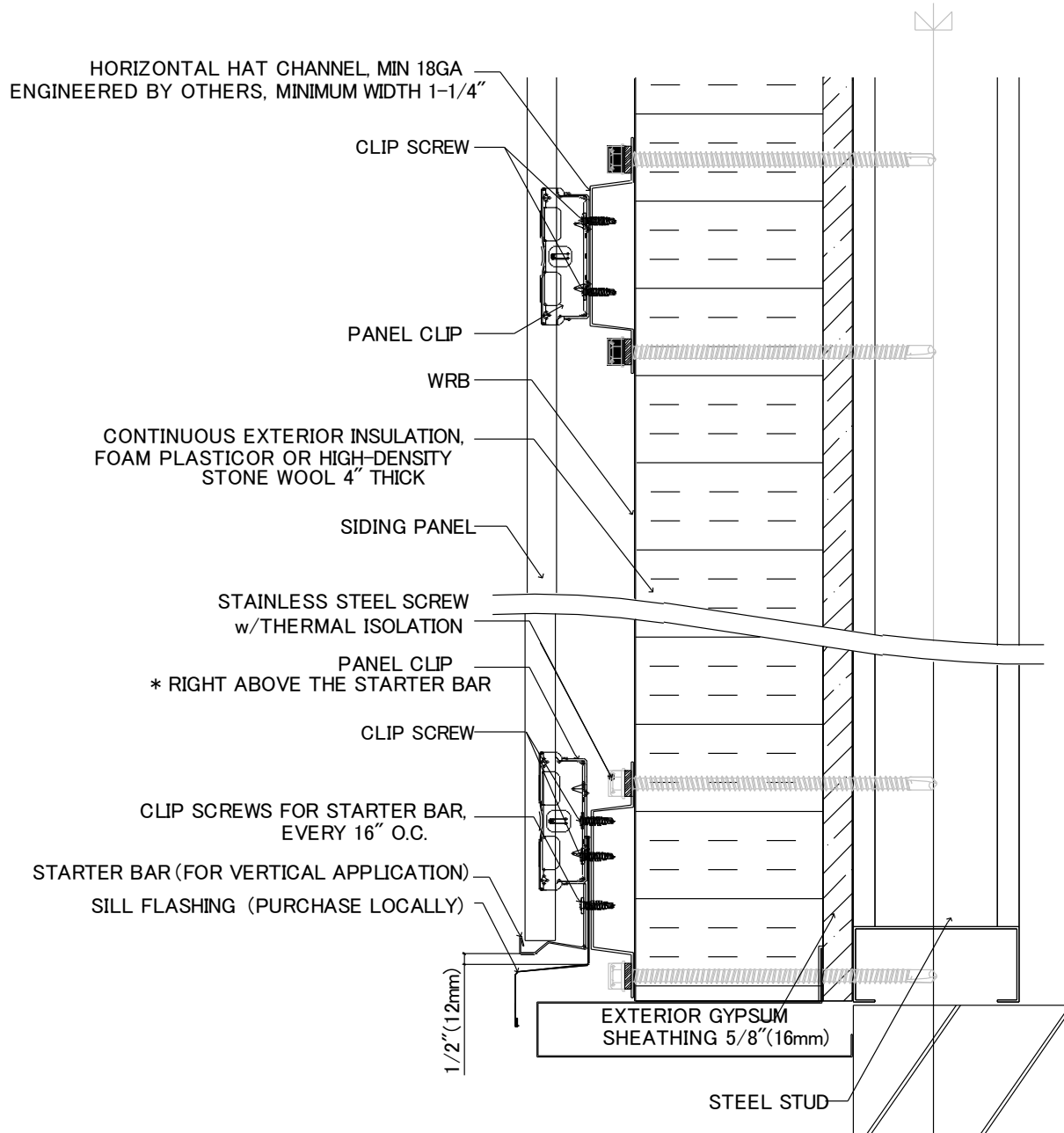
* If it is not possible to install a Panel Clip within 3" of the top or bottom of each panel, install two spacer blocks and face fasteners instead.

9. Continuous Insulation (CI) - Vertical Application

<3> Starter Bar Installation

- Ensure that the starter bars are level.
- Attach the starter bar to the structure with screws at 16" on center, attached to studs when possible.
- Fasten the first clip right above the starter bar (and no more than 3" above).
- To fit the preformed corners, use the corner tool included with the starter bars. See the photos on the following page for instructions.

 **Ensure the panels are level at each row.**



Refer to "Precautions for Vertical Installation" (P111).

9. Continuous Insulation (CI) - Vertical Application

<3> Starter Bar Installation

- (1) Take out the corner tool from the package. One corner tool is packaged together with five starter bars.



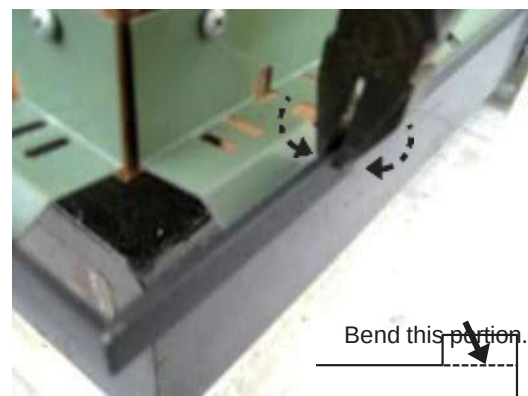
- (2) Bend the corner part at its center.



- (3) Install the bent corner tool onto the corner of the two already installed starter bars, as shown.



- (4) Using pliers, very carefully bend the top lip of the corner tool.



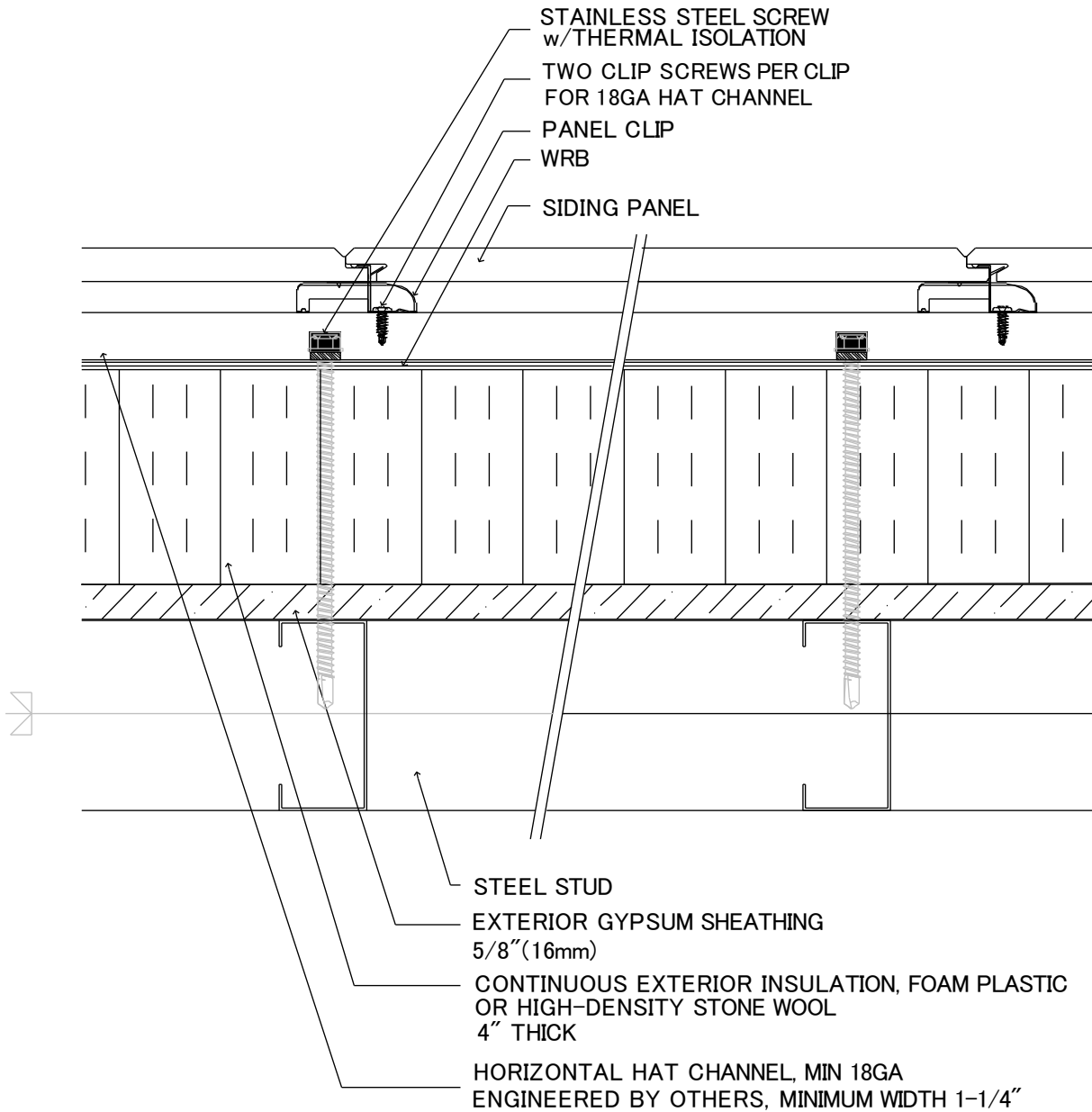
- (5) The finished preformed corner tool should look like this:



9. Continuous Insulation (CI) - Vertical Application

<4> Install Panel Clips

- Fasten a **panel clip** securely with **2 screws** at least every 16", going vertically up the panel joint.
- Place a clip within 3" of the top of each panel.

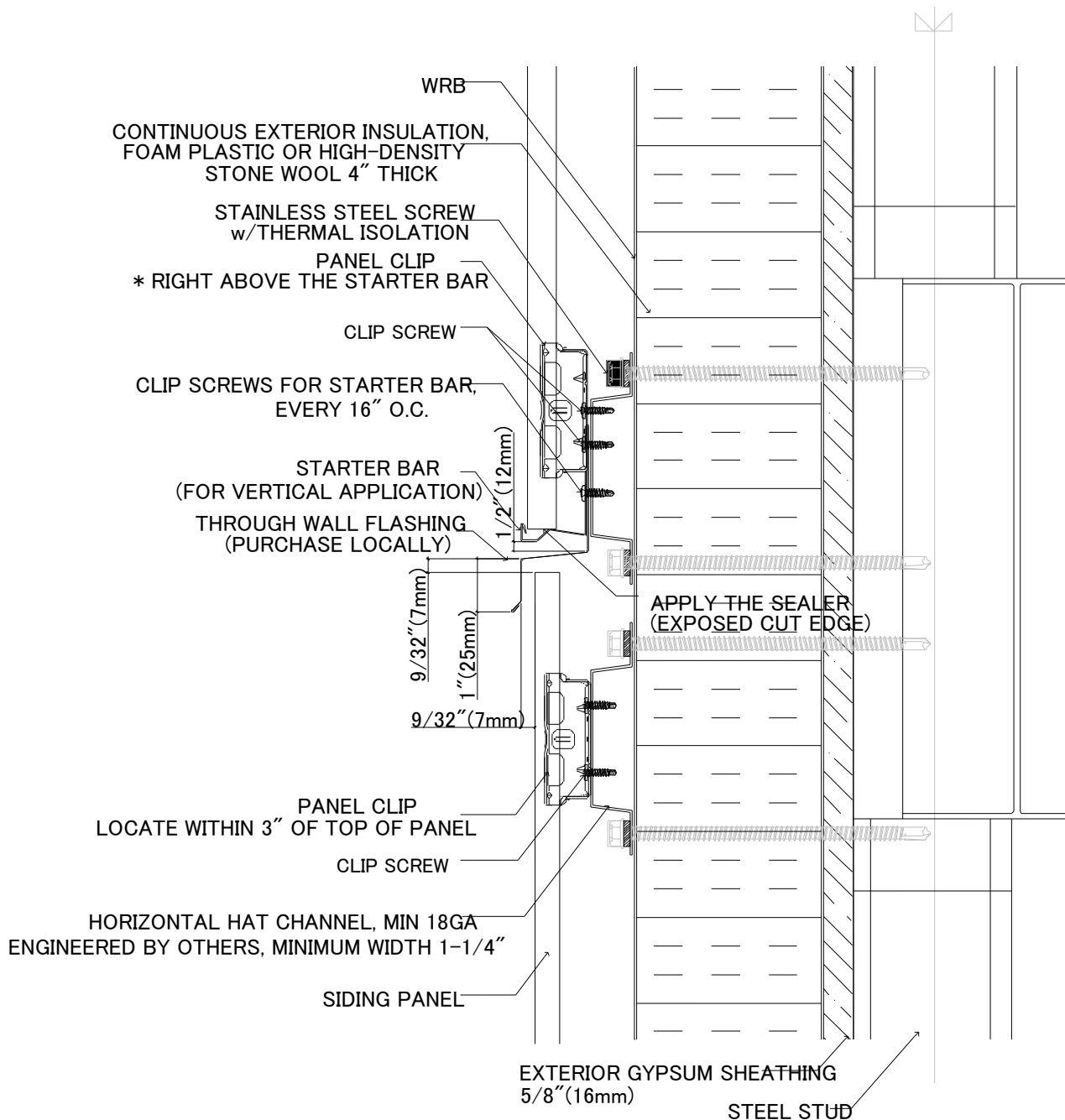


9. Continuous Insulation (CI) - Vertical Application

<5> Through Wall Flashing

Refer to "Precautions for Vertical Installation" (P111).

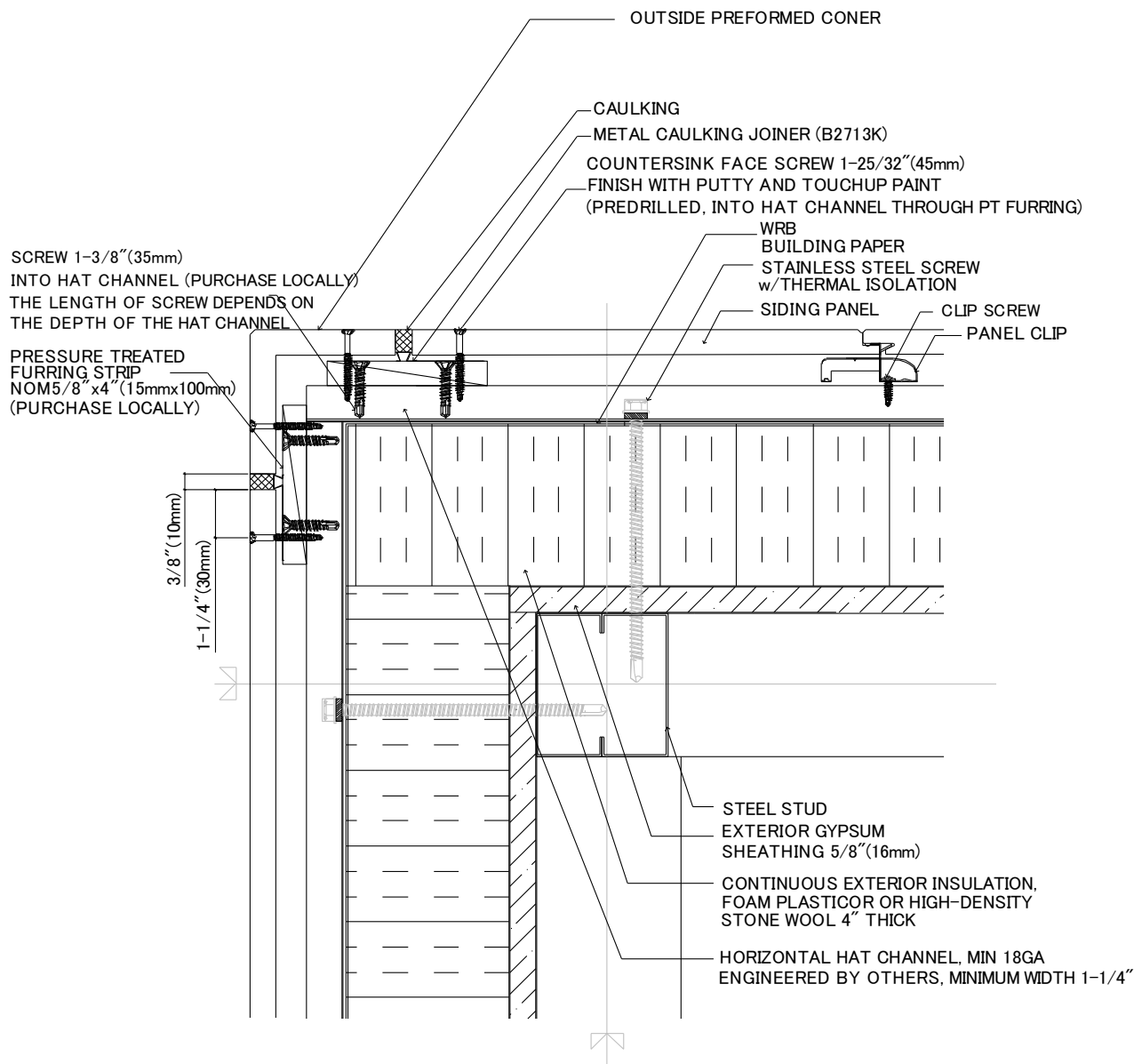
- Install Panel Clip within 3" of the top of each panel.
- Keep 7mm (9/32") space between the upper edge of panel and flashings and install the through wall flashings.



9. Continuous Insulation (CI) - Vertical Application

<6> Install Outside Corner (Preformed)

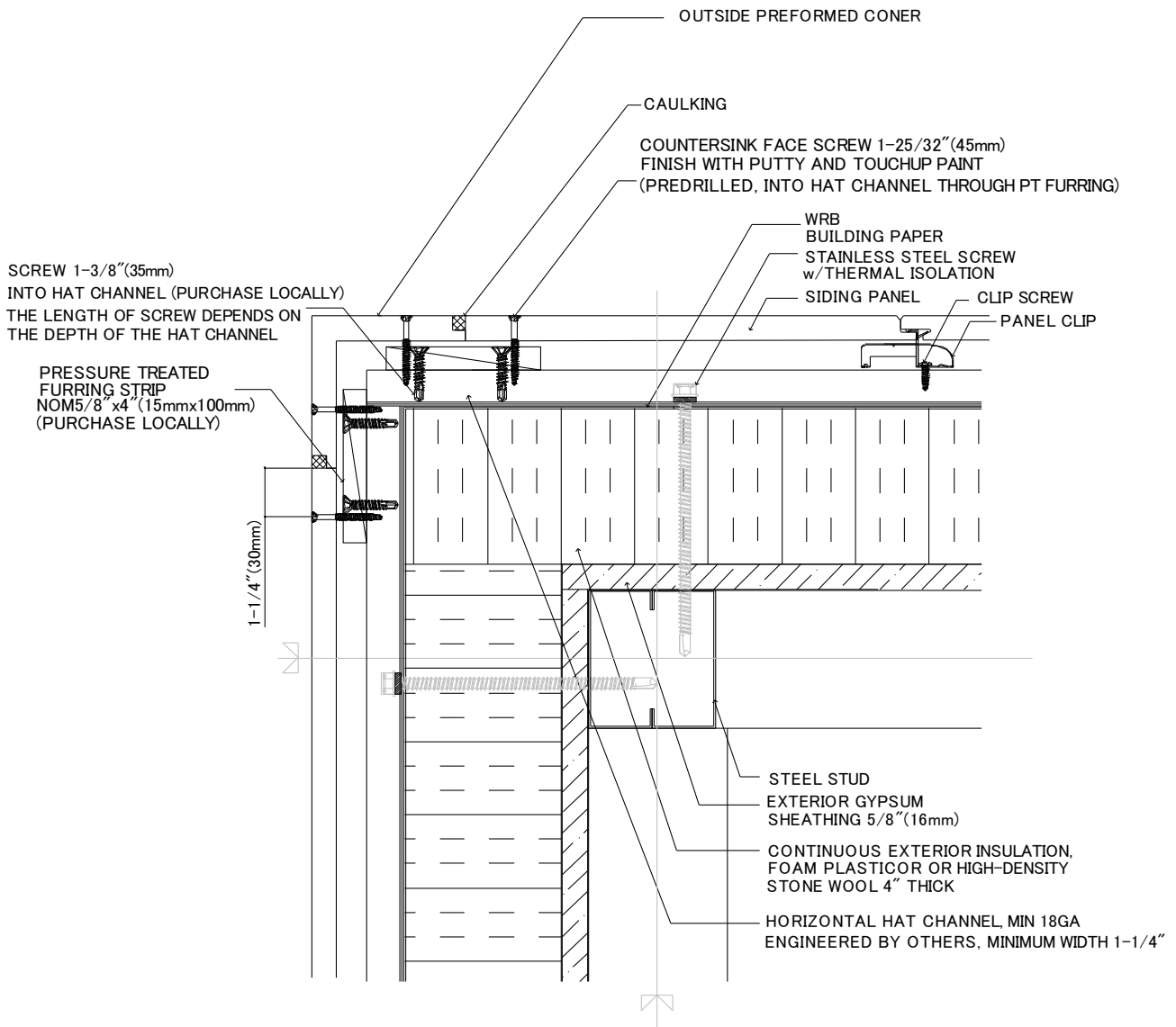
- Panel clips cannot be used for the siding panels adjacent to the outside corners because shiplapped edges must be removed when cutting the panels to size.
- Install pressure treated furring strips, predrill pilot holes and face-screw at least 1-1/4" from any panel edges. Screw spacing is as follows:
 - ① Edge of panel adjacent to outside corner: 16" on center.
 - ② Corner Siding : (a) 20" or less for parallel installation on both sides, (b) 12" or less for staggered installation on both sides.
- After installation, follow directions on page 22 for screw head repair.
- Install starter bars so as to hold both siding and pre-formed corners.



9. Continuous Insulation (CI) - Vertical Application

<6> Install Outside Corner (Preformed)

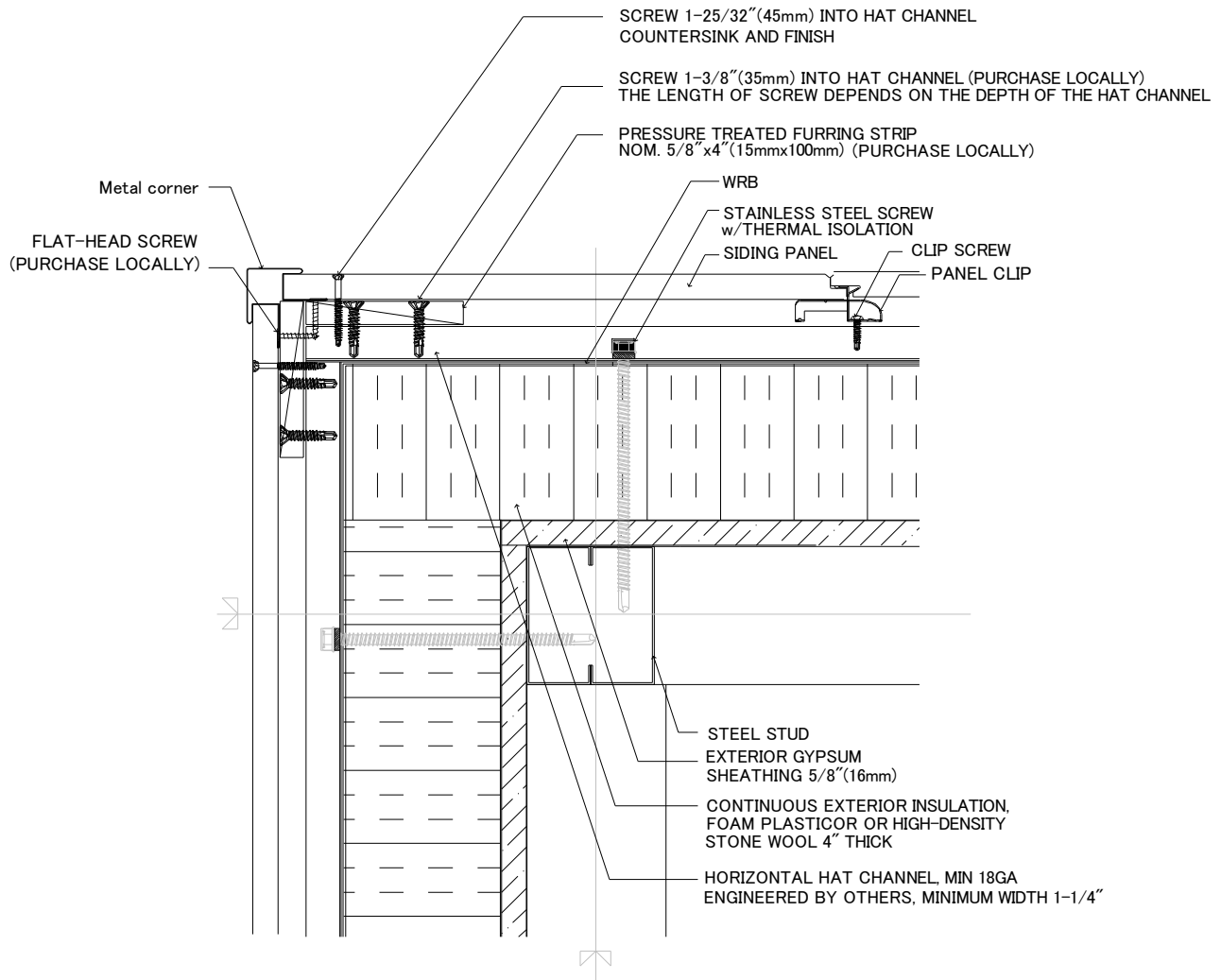
- Pre-formed corners on some products do not need to be used with Metal Caulking Joiners because these textures have bottom shiplapedges.



9. Continuous Insulation (CI) - Vertical Application

<6> Install Outside Corner (Metal)

- Install vertical furring strips (pressure treated) behind both sides of the outside corner.
- Install metal outside corners on the furring strips.
- Install the metal outside corners so as to have approximately 1/2" of space between the sill flashings and the corners.
- Metal outside corners should cover the cut edges of the panels by at least a 3/8" (see detail).

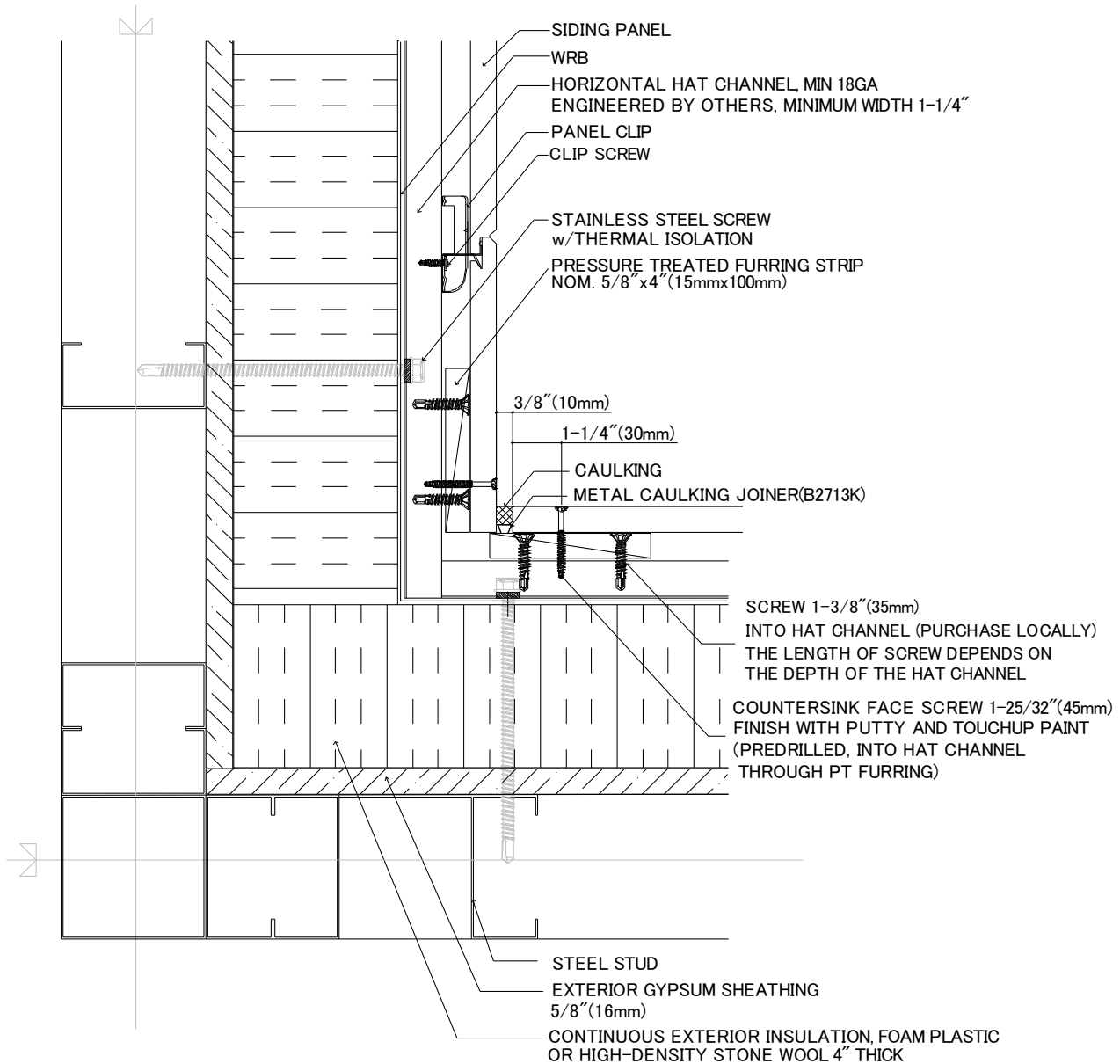


9. Continuous Insulation (CI) - Vertical Application

<7> Install Inside Corners

▲ Make sure to remove the shiplapped edge of the siding panels.

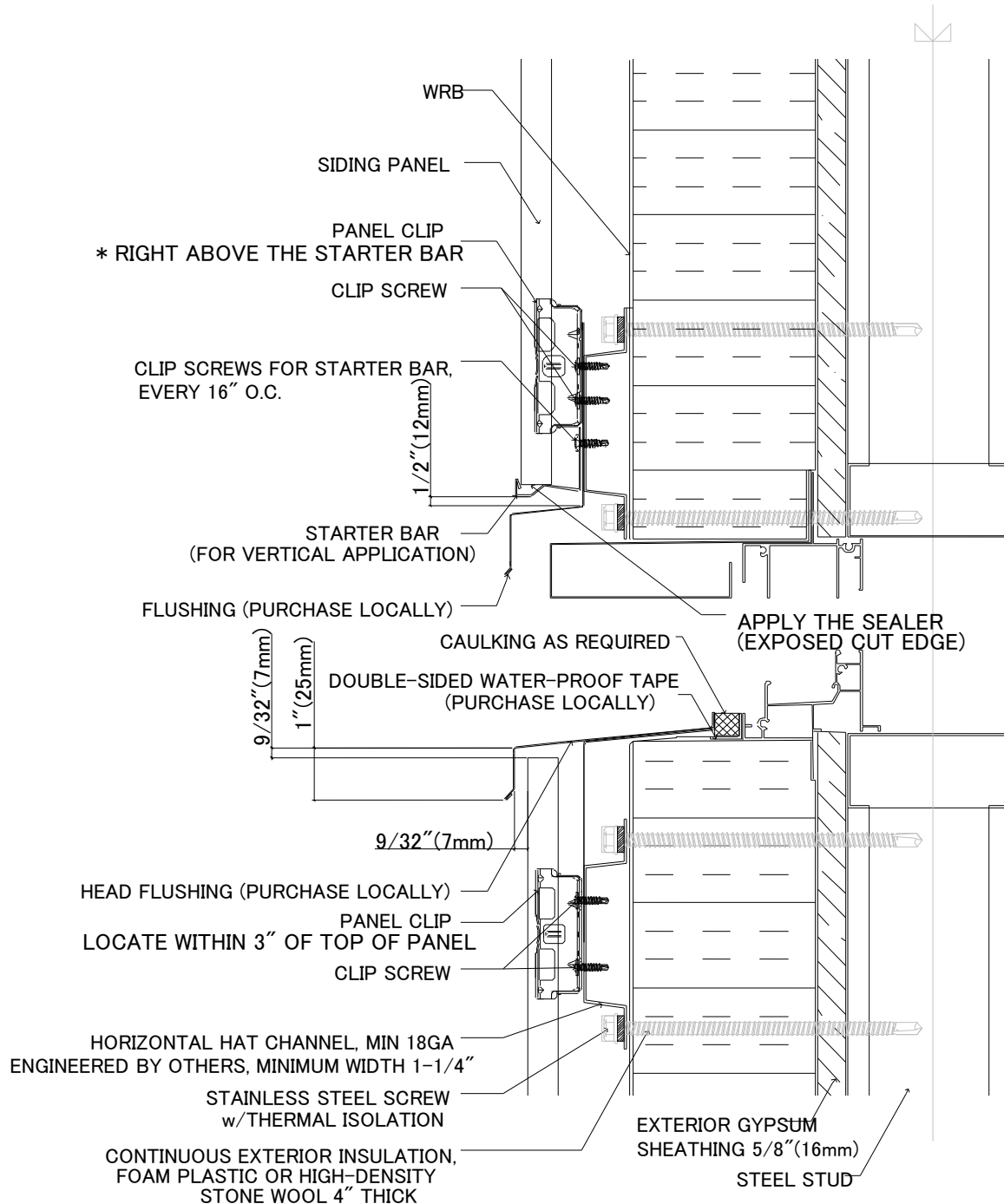
- Use pressure treated furring, predrill pilot holes and attach the siding with face screws.
- Screw the panels at least 1-1/4" from any panel edge at 16" on center. After installation, follow directions on page 22 for screw head repair.
- The joiner will provide approximately 3/8" of space for caulking.



9. Continuous Insulation (CI) - Vertical Application

<8a> Openings (Above and Below)

- Install the starter bars above the openings with clip screws at 16" on center.
- Fasten the panels with panel clips above and below the opening.



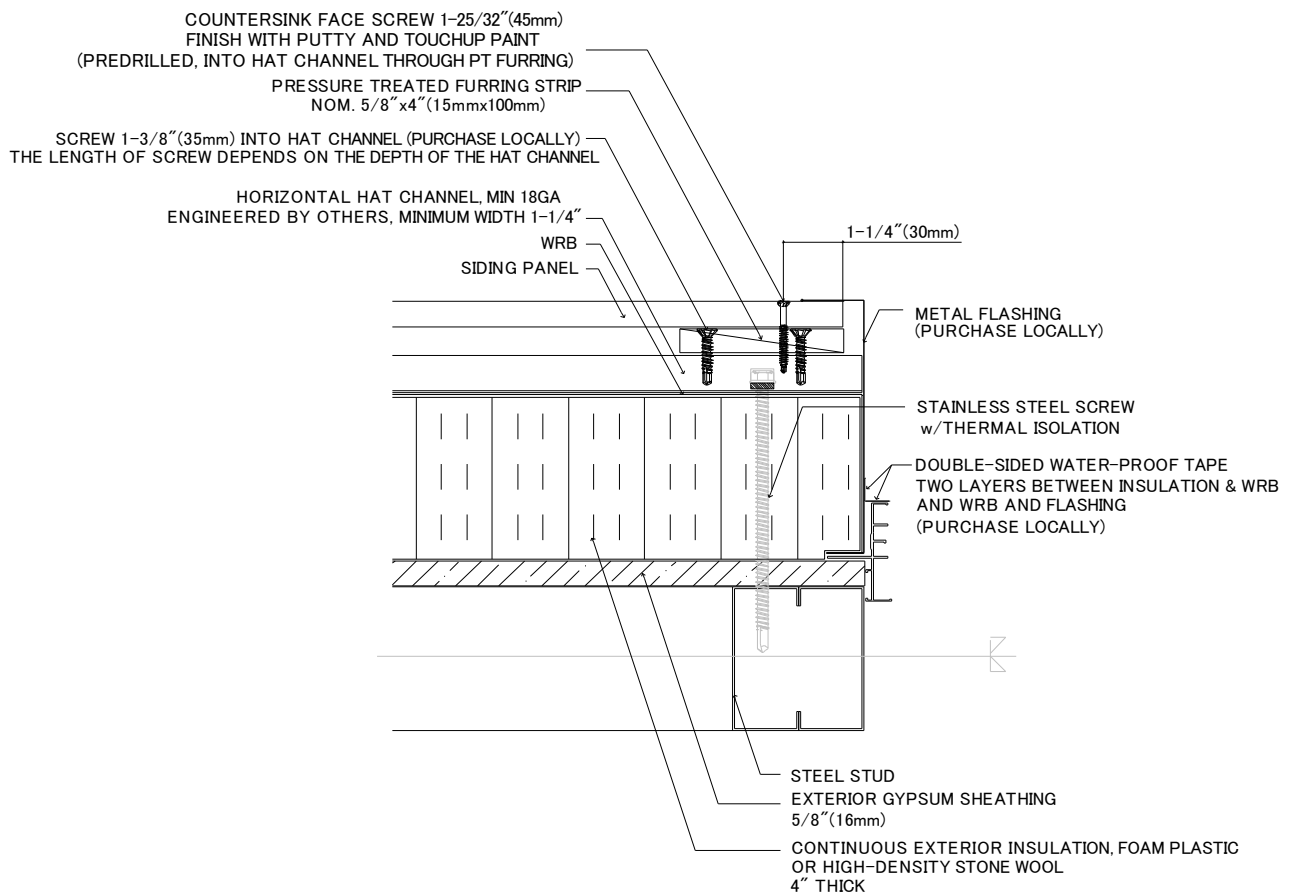
Refer to "Precautions for Vertical Installation" (P111).

9. Continuous Insulation (CI) - Vertical Application

<8b> Openings (Sides/Jambs)

- Install a metal caulking jointer to provide a profile for a sealant joint.
- Use a furring strip, predrill holes and screw at least 1-1/4" from any panel edges at 16" on center.
- Refer to page 22 for repair of screw heads.

 **Make sure to remove the shiplapped edges of the panels.**

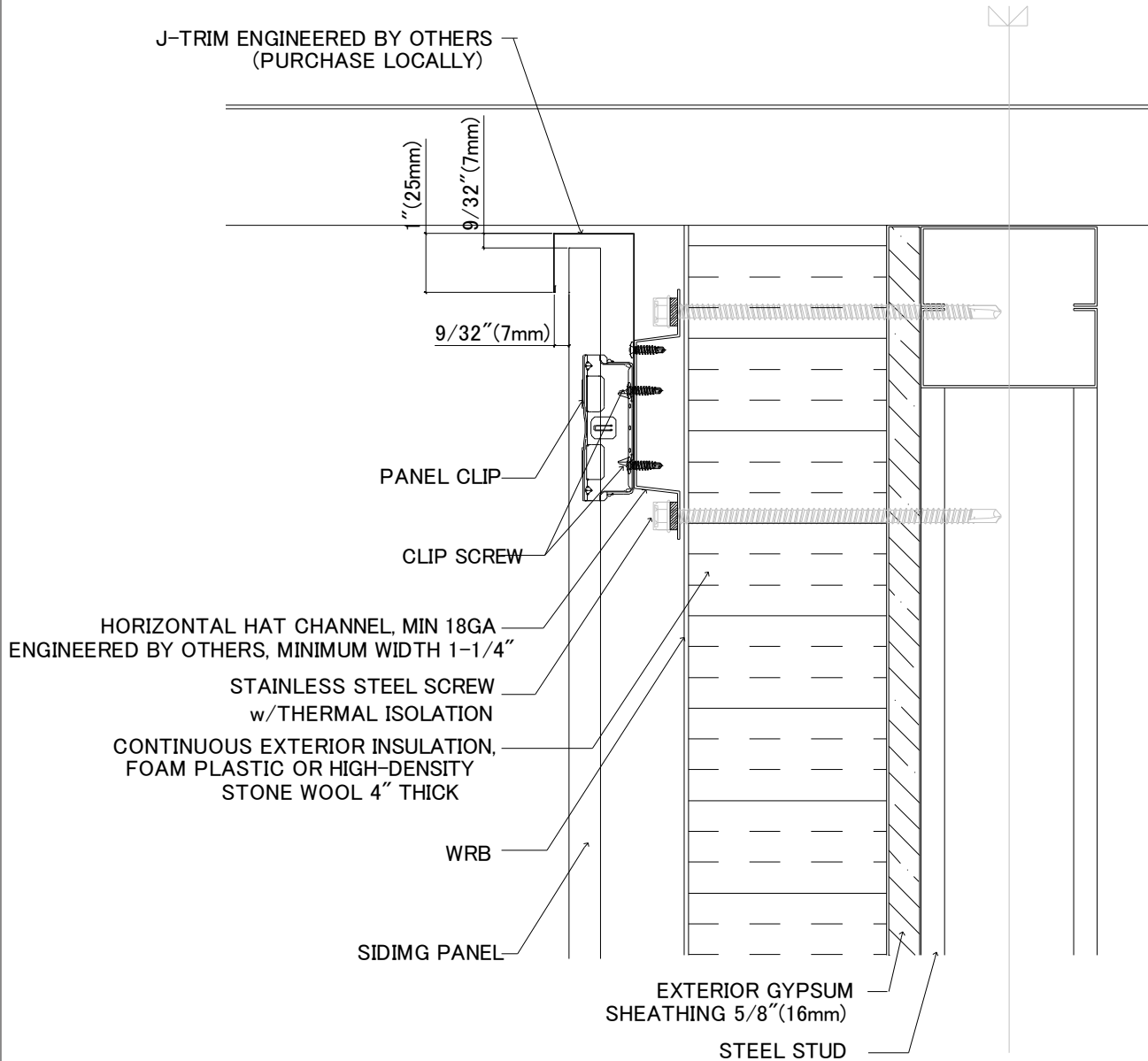


9. Continuous Insulation (CI) - Vertical Application

<9> Top of Wall

- Install the panels so as to have 9/32" space between the soffit flashing and the panel as shown on the figure below.
- Install top panel clip within 3" of the top of each panel.

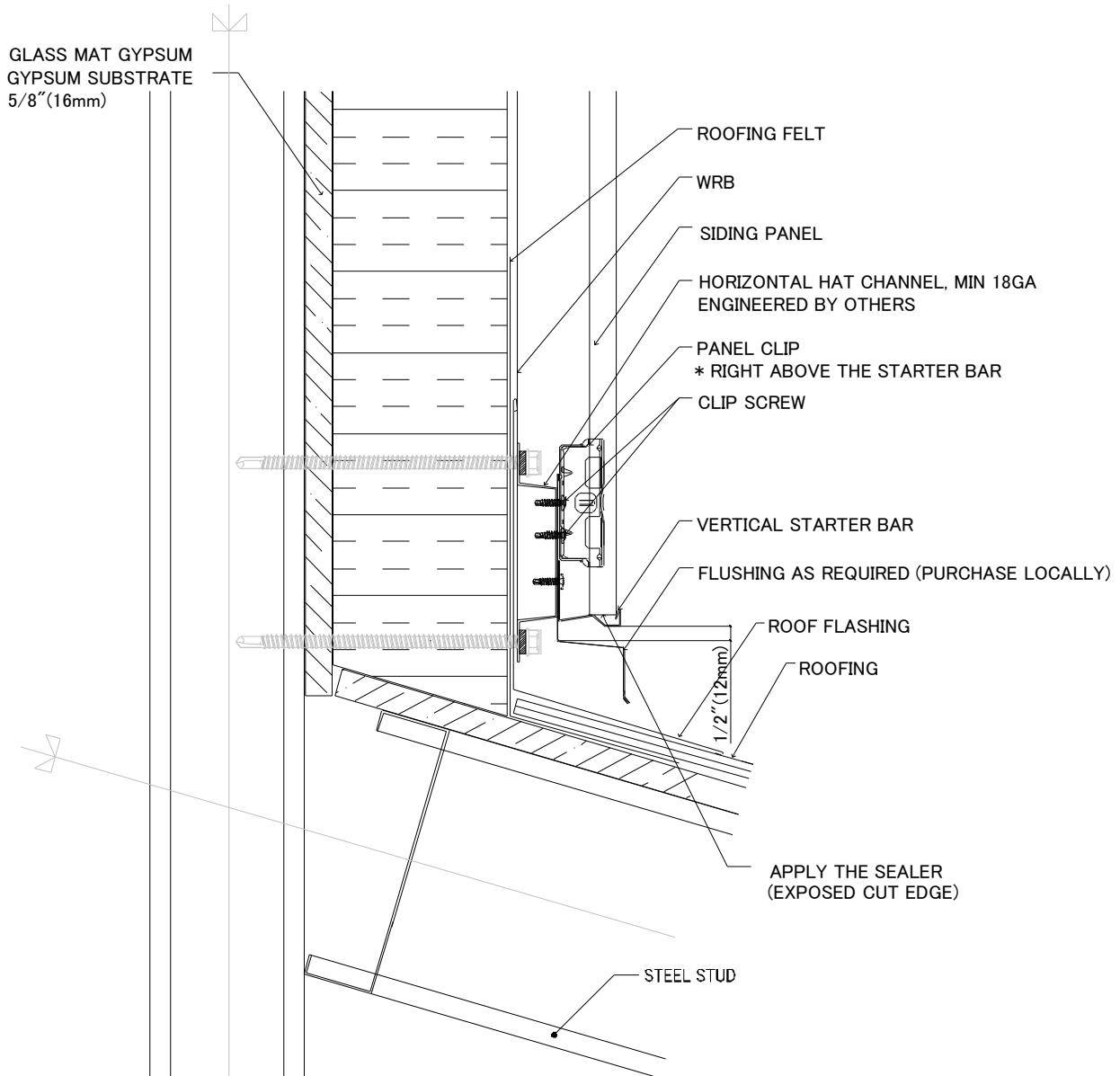
▲ When soffit flashing is not feasible (for gable walls, etc.): Apply caulking between the top of the siding panels and the soffit so that the air coming through the air cavity is exhausted through the soffit or attic.



9. Continuous Insulation (CI) - Vertical Application

<10a> Intersection With Roof (Ridge Side)

- Keep 1/2" space between the roof flashings and siding panels for ventilation of the rain screen system.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).

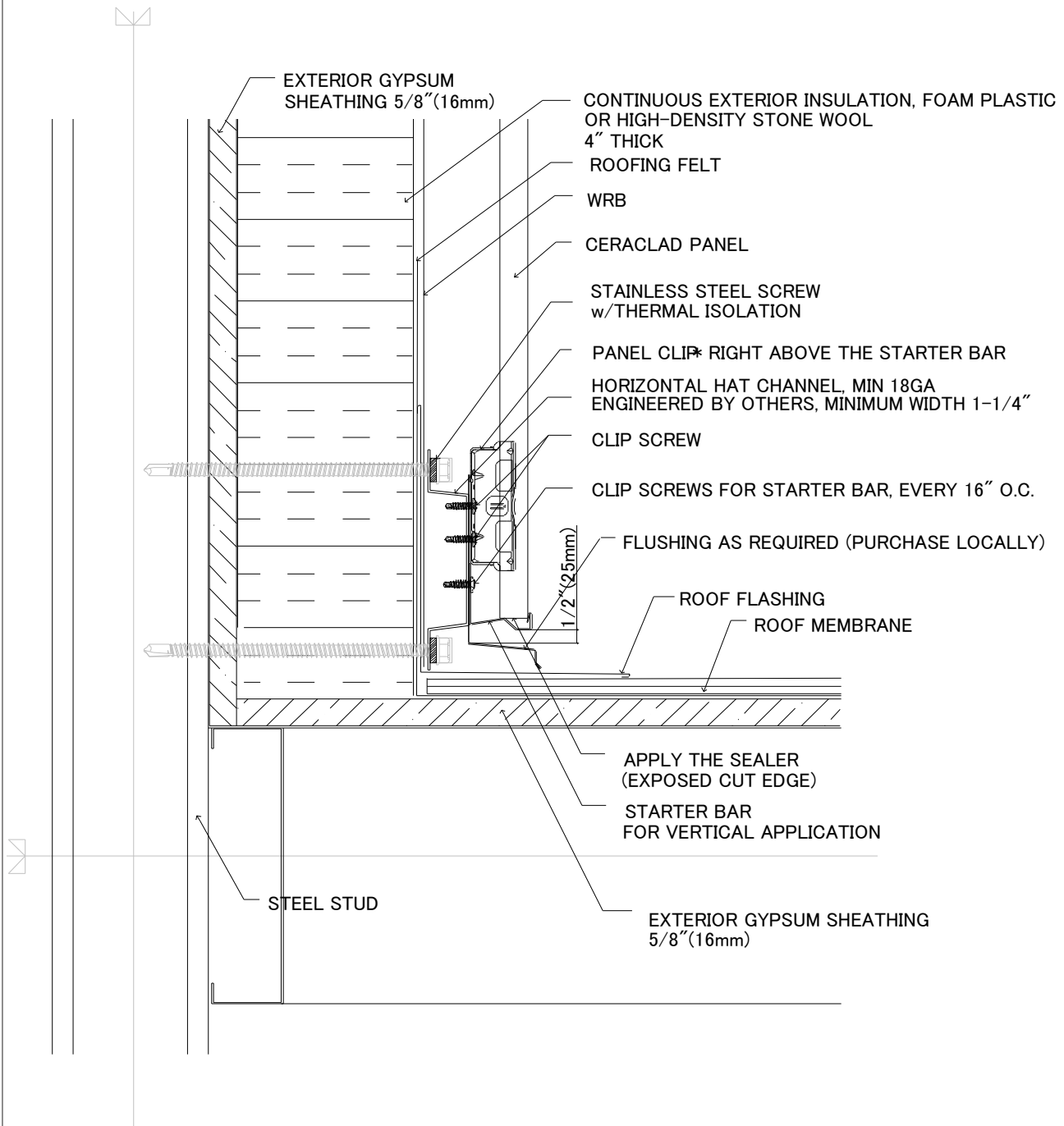


Refer to "Precautions for Vertical Installation" (P111).

9. Continuous Insulation (CI) - Vertical Application

<10b> Intersection With Roof (Slope Side)

- Keep 1/2" space between the roof flashings and siding panels for ventilation of the rain screen system.
- Install the siding panels so that the bottom of panel is level.
- Cover the top of the roof flashing with the waterproof building paper (see detail).



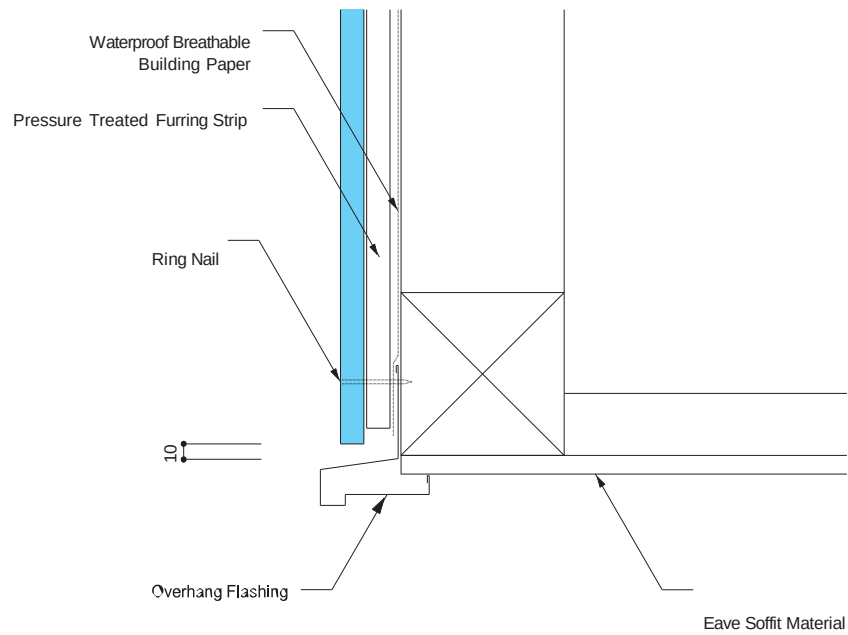
10. Other Details

- <1> Overhang
- <2> Obtuse Angle Installation
- <3> Installation Around Ventilation Ducts
- <4> Junctions With Other Materials

10. Other Details

<1> Overhangs

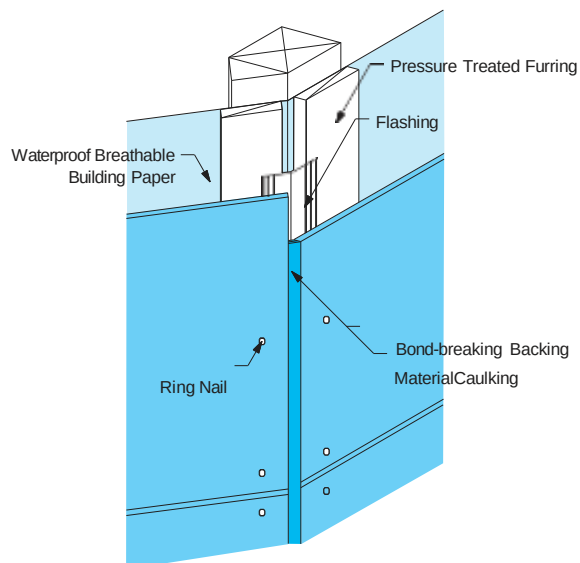
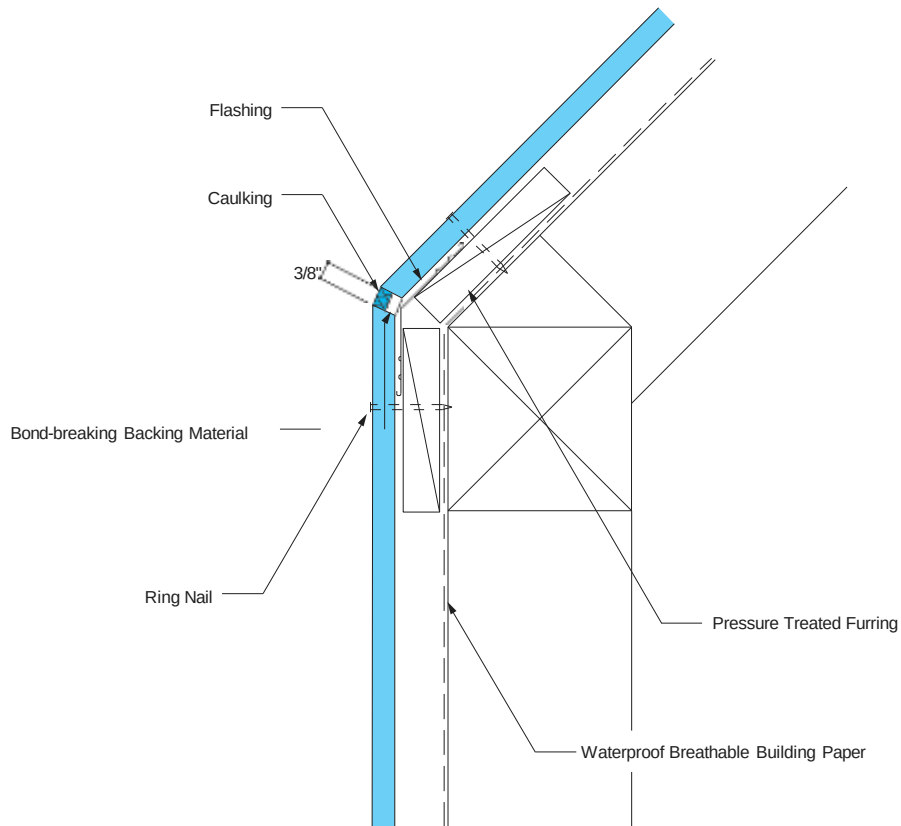
- Install overhang flashings at overhangs.
- Keep 10mm space between the overhang flashing and siding.



10. Other Details

<2> Obtuse Angle Installation

- Install flashings and then install siding panels.
- Drive nails into furring strips, avoiding the flashing.
- Keep 10mm space at the joint, install bond-breaking backer material and apply caulking (caulking bead must be at least 3/8" wide and 3/8" deep.)



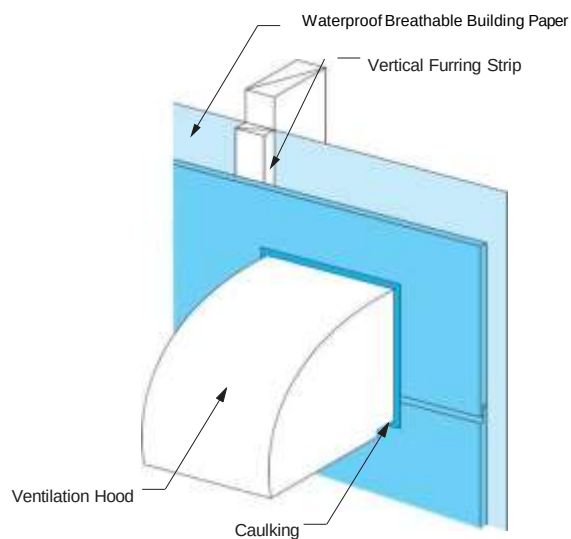
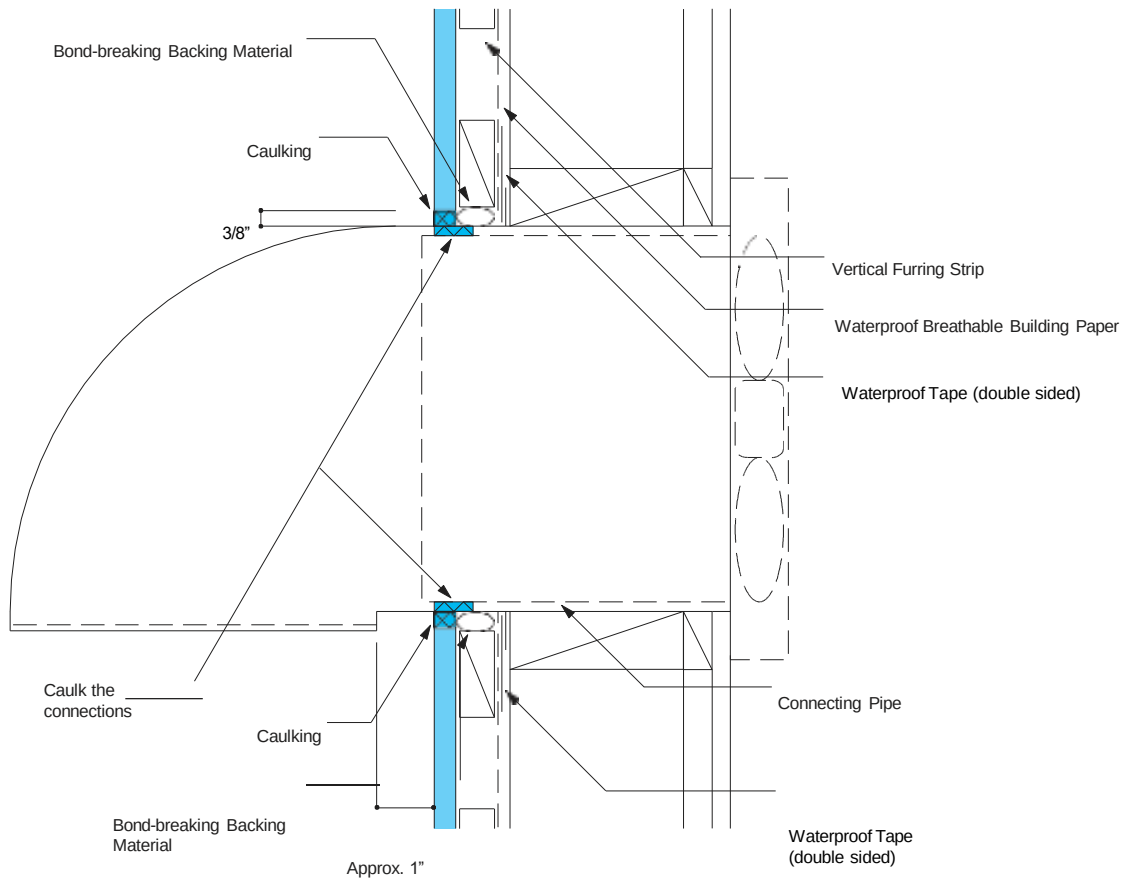
10. Other Details

<3> Installation Around Ventilation Ducts

- Keep 3/8" of space between the hoods and the panels and apply caulking.
- Separate the exhaust opening at least 1" from the siding panel surface.



- Securely apply caulking on the connection of the pipe and hood to prevent humid air from entering the air cavity.



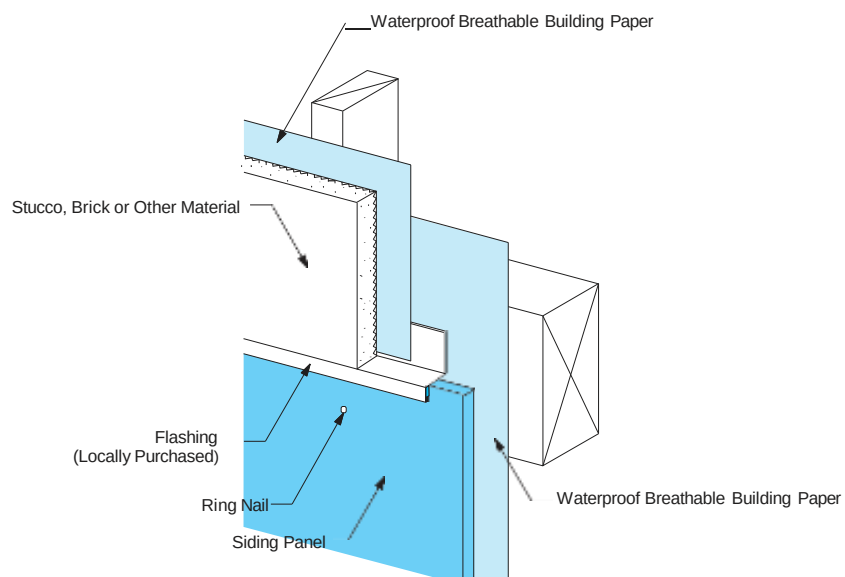
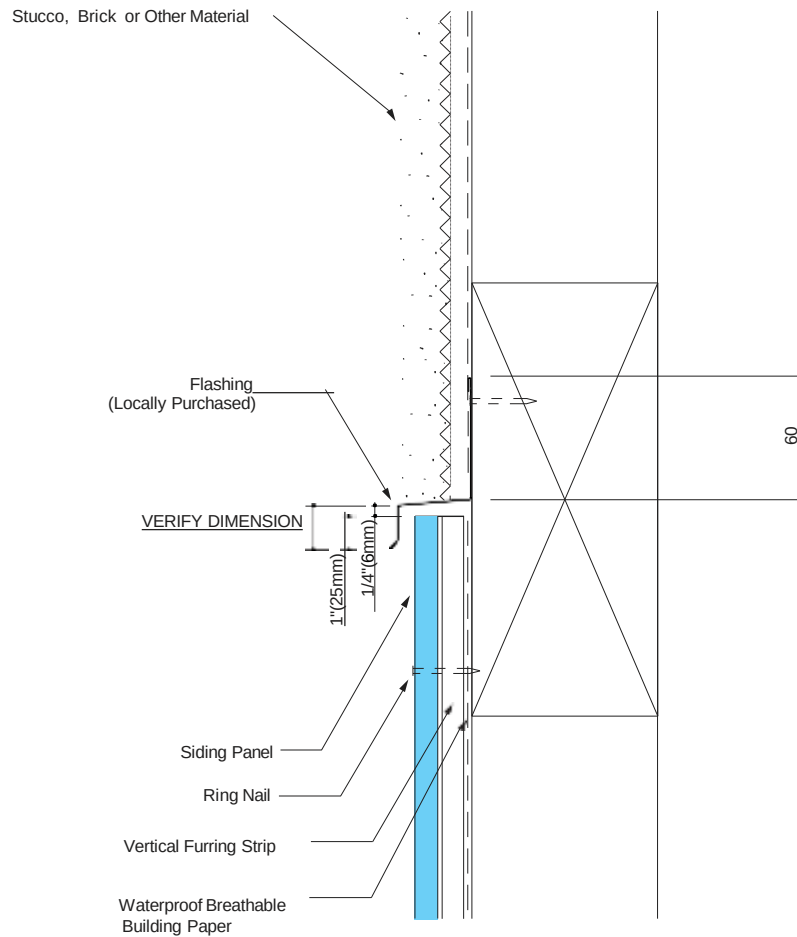
10. Other Details

<4> Junctions With Other Materials

① Horizontal Junction

▲ **Make sure to use flashing because the joints may fail if the siding panels are installed next to other materials without any separation.**

- Overlap the flashing approximately 2" and apply caulking on the overlaps.

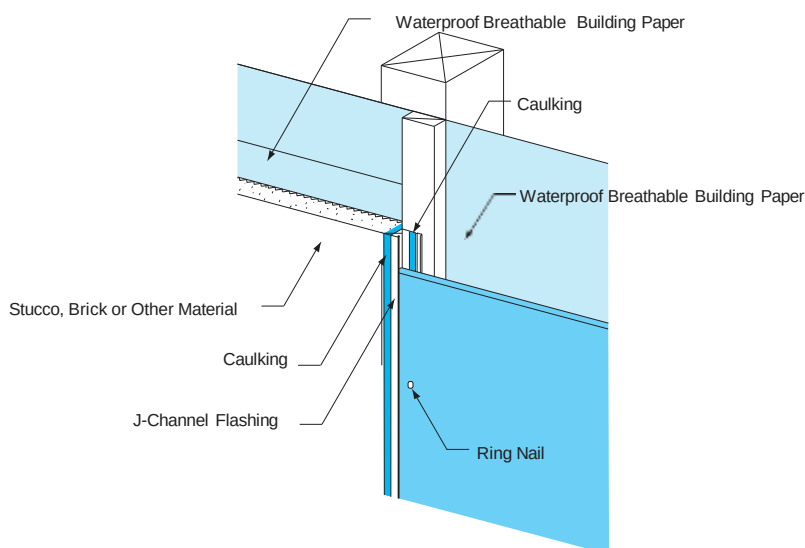
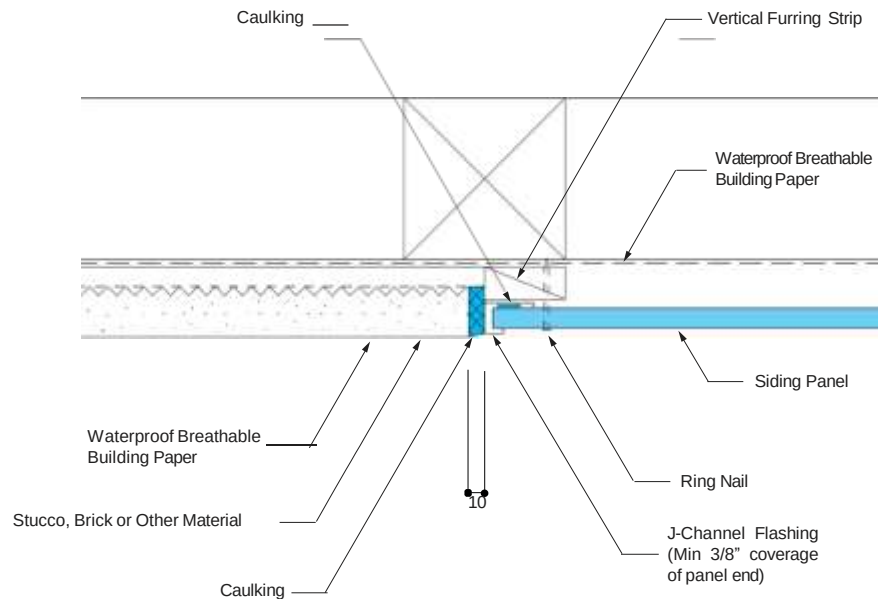


10. Other Details

<4> Junctions with Other Materials

② Side by Side Vertical Junction

- Use a J-channel flashing to separate the siding panels and the other material.
- Create a sealant joint between the flashing and the other material.



J channels should cover panel edge by a 3/8" or more.

11. Repair

11. Repair

1. How to repair damage and cracks

- Repair minor cracks and dents in siding panels with KMEW repair putty.
- Apply putty to cover screw heads exposed after installation. ✖ For best results, use putty sparingly.
- ✖ **Major damage will require panel replacement.**

Repair Instructions with KMEW Putty (B4901)



- Don't use caulking for repairing screw/nail heads or other touch-up. The caulking's appearance will fade over time.

Repair Order	Repairing Method	Image
1) Check the weather before starting	• Make sure that the panel surfaces are completely dry prior to putty application. • Do not apply putty in the following conditions: ① Outdoor temperature below 40 degrees F. ② Panel surface temperature above 120 degrees F. ③ If precipitation is expected.	
2) Cleaning damaged portions	• Clean the damaged portions with a toothbrush ✖ Apply painter's tape to mask around the area if necessary.	
3) Putty application	• Apply the putty evenly onto the damaged area. Use a soft and flat tool to smooth the surface. ✖ Remove any painter's tape carefully.	
4) Apply Touch-up Paint	• Apply touch-up paint with a brush after the putty hardened. ✖ Prime the putty before painting.	

- These repair instructions are only a general guide and additional steps may be required.

11. Repair

2. Replacing a single panel.



- Replacement panels must be fastened with nails or screws, rather than clips.

Order	Content of Work	Images
1) Remove	• Use a utility knife to remove the caulking. • Cut the center of the panel with a power saw and remove the panel. ✘ Be careful not to damage the sheathing, waterproof building paper, and adjacent panels.	
2) Prepare the replacement panel.	• Remove the part Ⓐ (figure, right) of the placement panel. Without removing this portion of the shiplapped edge the replacement panel will not fit.	
3) Installation	• Apply caulking to shiplapped edges to ensure a waterproof seal. • Attach spacer blocks where the panel will be nailed (or screwed). • Insert the replacement panel.	
	• Predrill pilot holes and nail or screw the panel into place. • Apply touch-up paint to the nail or screw heads. • Replace the caulking where it had been removed.	

- These repair instructions are only a general guide and additional steps may be required.

Technical Information

- Installation Instructions
- Reports and Certifications
- Specifications
- Technical Bulletins
- Technical Data Sheet
- Warranty
- Health, Safety and Sustainability



- Technical Services Support

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