Installation Manual

Exterior Cladding

CHAMCLAD®

TRANSFORMING SPACES

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Scan for Installation videos

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1.0 PURPOSE & SCOPE

This Installation Manual provides installers and designers with the essential requirements for proper installation of ChamClad® products. These instructions reflect Best Practices and must be followed to maintain product performance and warranty compliance. For additional advisory information and expanded technical guidance, you must read the ChamClad® Appendices that accompany this manual.

2.0 ADDITIONAL DOCUMENTS (REQUIRED)

This manual is accompanied by the following appendices located at the end of the manual and which must be reviewed prior to installation:

- ***Appendix A: General Information & Advisory***
- ***Appendix B: Tools and Fastener Guide***
- ***Appendix C: Technical Expansion & Contraction Reference***
- ***Appendix D: Care & Maintenance Guide***

These documents provide additional product knowledge, environmental behavior guidelines, compliance references, and long-term maintenance details.

3.0 GENERAL INFORMATION & ADVISORY

- For additional information, refer to *Appendix A: General Information & Advisory*

3.1 Installer's Responsibilities

- **Read this manual completely before starting installation.** Improper installation may void the warranty.
- Always ensure you are using the **most current version** of this manual. Updated manuals, appendices and technical bulletins are available at ChamClad.com.
- It is the responsibility of the installer to observe the requirements of the local Building Code as they relate to installation in any given area.

3.2 Material Inspection

- Inspect all ChamClad® boards, trims, and accessories for damage, colour discrepancies, or defects prior to installation.
- If there are any concerns about material **do not** install. Report issues within 7 days of receipt to info@chamclad.com.

3.3 Handling

- Always carry boards on their narrow edge and support full length.
- Whenever possible avoid using metal banding. Metal banding will cut into the boards if pulled too tight.

3.4 Storage

- Store materials on a flat, fully supported surface.

- Keep products protected from direct sunlight and excessive heat. Note: It is important that product is not stored for long periods where temperatures could exceed 30 degrees Celsius (86 degrees Fahrenheit).
- Do not store on asphalt surfaces.

3.5 Safety Requirements

- Proper PPE is mandatory: eye protection, gloves, hearing protection when cutting.
- When using a circular saw: cut face down.
- When using a cut-off saw: cut face up.
- Use carbide-tipped blades with 84+ teeth.
- Do not score or snap ChamClad® panels.

4.0 TOOLS & FASTENERS

- For additional information, refer to *Appendix B: Tools and Fastener Guide*

4.1 Tools Required

- Circular saw / cut-off saw
- Level, tape measure, chalk line
- Drill/driver with appropriate bits
- Deadblow hammer

4.2 Fasteners Summary

- Use ChamClad® universal self-tapping screws where possible.
- Minimum fastener penetration: 1¼” (32mm) into structural substrate.
- When fastening into metal, pre-drill if using universal screws.
- Leave a 1/32” (0.8mm) gap between fastener head and nail flange.
- Do NOT use: nail guns, staplers, glue.

5.0 INSTALLATION FUNDAMENTALS

- For additional information, refer to *Appendix C: Technical Expansion & Contraction Reference*

5.1 Expansion & Contraction General Rules

- Installation in weather colder than -10°C (14°F) is not recommended due to potential chipping or cracking of the panels. Should that occur warranty may be voided.
- **It is important to acclimate panels and accessories for a <u>minimum of 24 hours prior</u> to installation.**
- Always allow for movement by installing fasteners at the center of nail slots.
- The following are Rules of Thumb for expansion and contraction.

Rule of Thumb – Gap Allowance (ΔT = 60°C / 108°F)

These values are intentionally conservative. For minimum calculated gap requirements based on actual panel length and temperature change, refer to the *Gap Reference Chart in Appendix C*. Based on a net temperature change of 60°C (108°F) (for example: installation at 0°C (32°F) with service temperatures reaching 60°C (140°F), the following general guidelines may be used:

- Panels up to 12 ft (3.7 m): min. gap of 5/16" (8 mm) per side
- Panels over 12 ft up to 16 ft (4.9 m) max: Leave a min. gap of 1/2" (13 mm) per side
- Panels over 16 ft up to 24 ft (7.3 m) max: Leave a min. gap of 5/8" (16 mm) per side
- Panels 25 ft (7.6 m) and longer: Panels must be pinned at the midpoint by fastening directly through the nail rail (not the slot center). To determine the required end gap, use the distance from the pinned midpoint to the panel end (half the total panel length) and refer to the Rules of Thumb above or *Gap Reference Chart in Appendix C.*
- Where required gaps are 5/8" (16 mm) or greater: The use of larger-faced trims is recommended to accommodate expansion and contraction, including 3.5" 2-pc Finish Trim, 3.5" 2-pc Outside Corner, or larger-faced H-Trim**.**

5.2 Cavity & Substructure Requirements

- ChamClad® exterior wall panels should be installed over a vented wall cavity assembly with furring strips/ strapping, galvanized steel Z-girts (min. 20 ga.), or a continuous 3-dimensional membrane, in accordance with local Building Code requirements. To ensure proper installation and meet warranty requirements, refer to CCMC/ICCES evaluations for assembly requirements.
- When installing over rigid insulation, fasteners must penetrate through to the structural substrate.

5.3 Flashings & Penetrations

- Follow local codes for window, door, and penetration flashing.
- When using sealant, ChamClad® recommends LePage Quadmax or equivalent to ASTM 920.

5.4 Panel Trims and Notes

- ChamClad® patterns repeat approximately every 48” (1.2m). Mix boards to avoid pattern repetition.
- Classic tongue-and-groove system with product stacking from bottom.
- For a U-Channel profile, insert to the first stop. For a V-Groove profile tap to the next stop.

6.0 CARE & MAINTENANCE

- For full maintenance guidelines, refer to *Appendix D: Care & Maintenance Guide*
- Clean every 12–18 months (or 8–12 months in high exposure areas).
- Use mild detergent with soft cloth or brush.
- Maximum pressure wash: 1500 PSI.
- Do not use solvents or abrasive cleaners

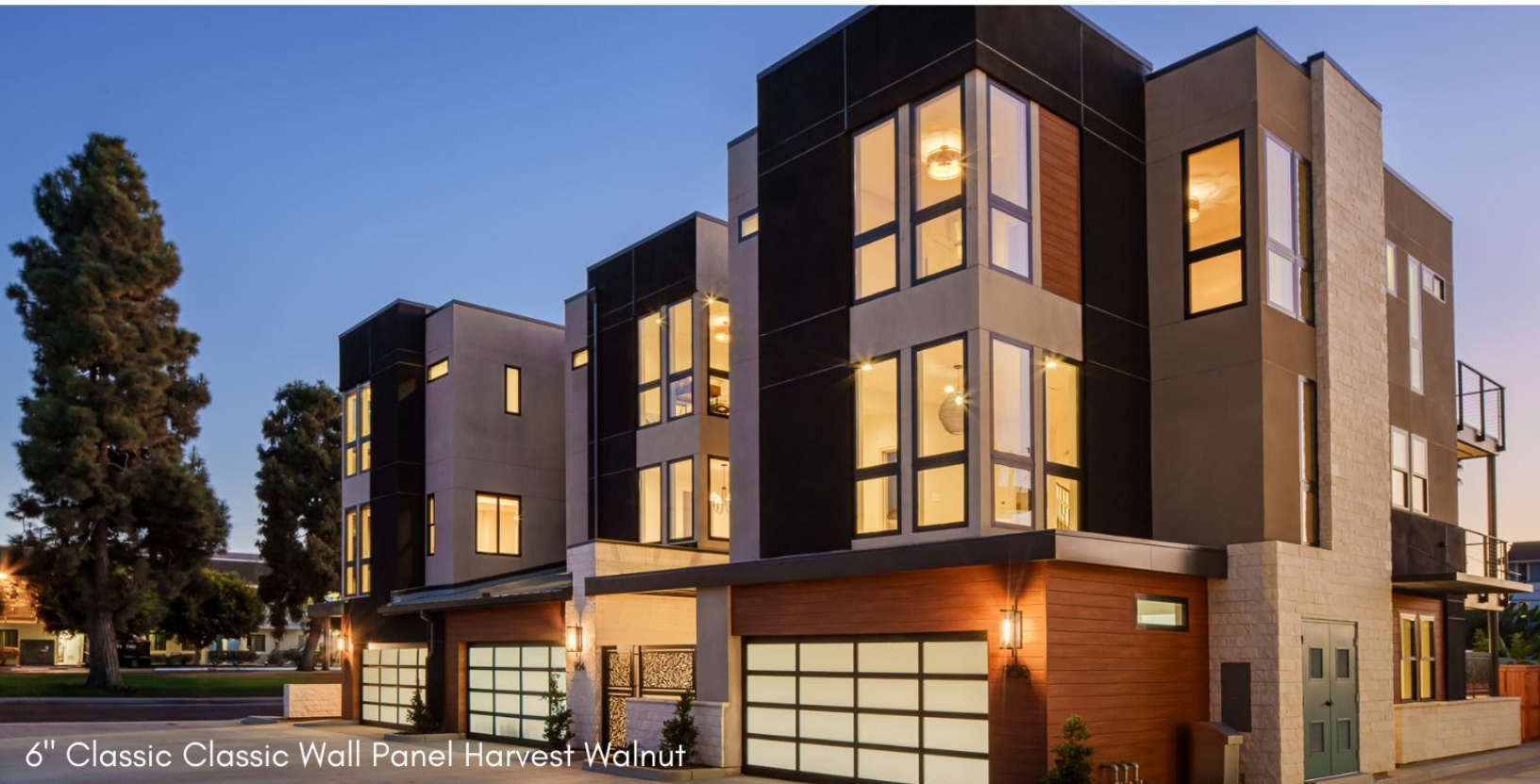
If you require further guidance or project-specific recommendations, contact engineering@chamclad.com



6" Classic Classic Wall Panel Toffee

CHAMCLAD® EXTERIOR CLADDING

Horizontal & Vertical



6" Classic Classic Wall Panel Harvest Walnut

6.0 EXTERIOR ARCHITECTURAL WALL PANELS

6.1 PRODUCTS- 6” Classic Wall Panel ½” and Shadowline Series 1/2”

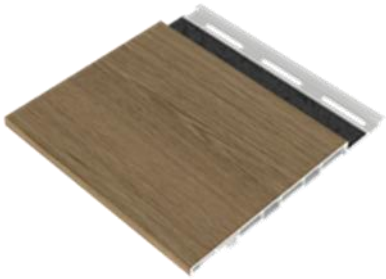




6” Classic Wall Panel 1/2”
12’, 16’ & 20’ Lengths
150mm x 13mm



6” Classic Wall Panel 1/2”
is one panel with two profiles.
U Channel & V Groove



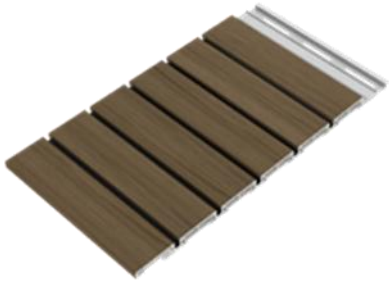


6” Shadowline Wall Panel 1/2”
12’, 16’ & 20 Lengths
150mm x 13mm





6” Shadowline with
3” Reveal Wall Panel 1/2”
12’, 16’ & 20’ Lengths
150mm x 13mm





12” Shadowline with
2” Reveal Wall Panel1/2”
12’ & 16’ Lengths
300mm x 13mm



12” Seamless Shadowline Wall Panel 1/2”
12’ & 16’ Lengths
300mm x 13mm

6.2 Exterior Wall Trims



*2PC Exterior J-Trim 2”
12’ & 20’ Lengths



*2PC Exterior J-Trim 3.5”
12’ & 20’ Lengths



1PC Exterior Inside Corner Trim 4”
10’, 12’, & 20’ Lengths



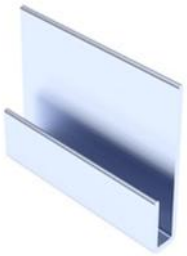
*2PC Exterior Outside
Corner Trim 2”
10’ & 20’ Lengths



*2PC Exterior Outside
Corner Trim 3.5”
10’ & 20’ Lengths



2PC Exterior H-Trim 2.75”
12’ & 20’ Lengths



Aluminum Starter Strip 1/2”
12’, 16’, & 20’ Lengths

***THESE TRIMS ARE AVAILABLE IN ALL ALUMINUM OR HYBRID COMBINATIONS**

Metric Conversion Chart

Feet	Meters
10’	3m
12’	3.6m
16’	4.9m
20’	6.1m

Inches	Millimeters
1.5”	38mm
2”	50mm
2.75”	70mm

6.3 Accessories



Spray Bombs
Colour matched Spray Paint.
Recommended for use with the Column Wrap Trims or any larger surface areas.



Touch Up Pens

PREPARATION: The areas to be touched up must be dry and free from dust, dirt, and grease. Before each use, shake Pen for approximately 30 seconds. Rattle of mixing balls must clearly be heard.

DE-AERATION: Due to exterior influences (heat) an overpressure may develop. To prevent blotching, the pen must be de-aerated. Put pen with tip pointing downwards onto a solid, non-soaking surface and press down – hold for 2 seconds, release and repeat procedure until tip is filled with touch- up (7-10 times may be necessary).

APPLICATION: Touch down pen tip at a flat angle (about 45 degrees) using light pressure. The valve opens and touch-up flows continuously. With the new designed tip, you can work precisely on hard-to- reach areas. Different stroke widths can be easily applied. Touch up rapidly with one stroke using light pressure. **Important: Do not apply another coat of touch up until first coat has dried (approximately 3-5 minutes).** If opacity decreases, shake pen again and de-aerate as described above. If touch-up flow decreases, simply pump again. Put cap on immediately after use – cap has to snap with a “click”. Over time, tip may become blocked with pigment sediments. If this occurs, replace tip with a new one, shake Pen well and repump. ***Do not let pens freeze**

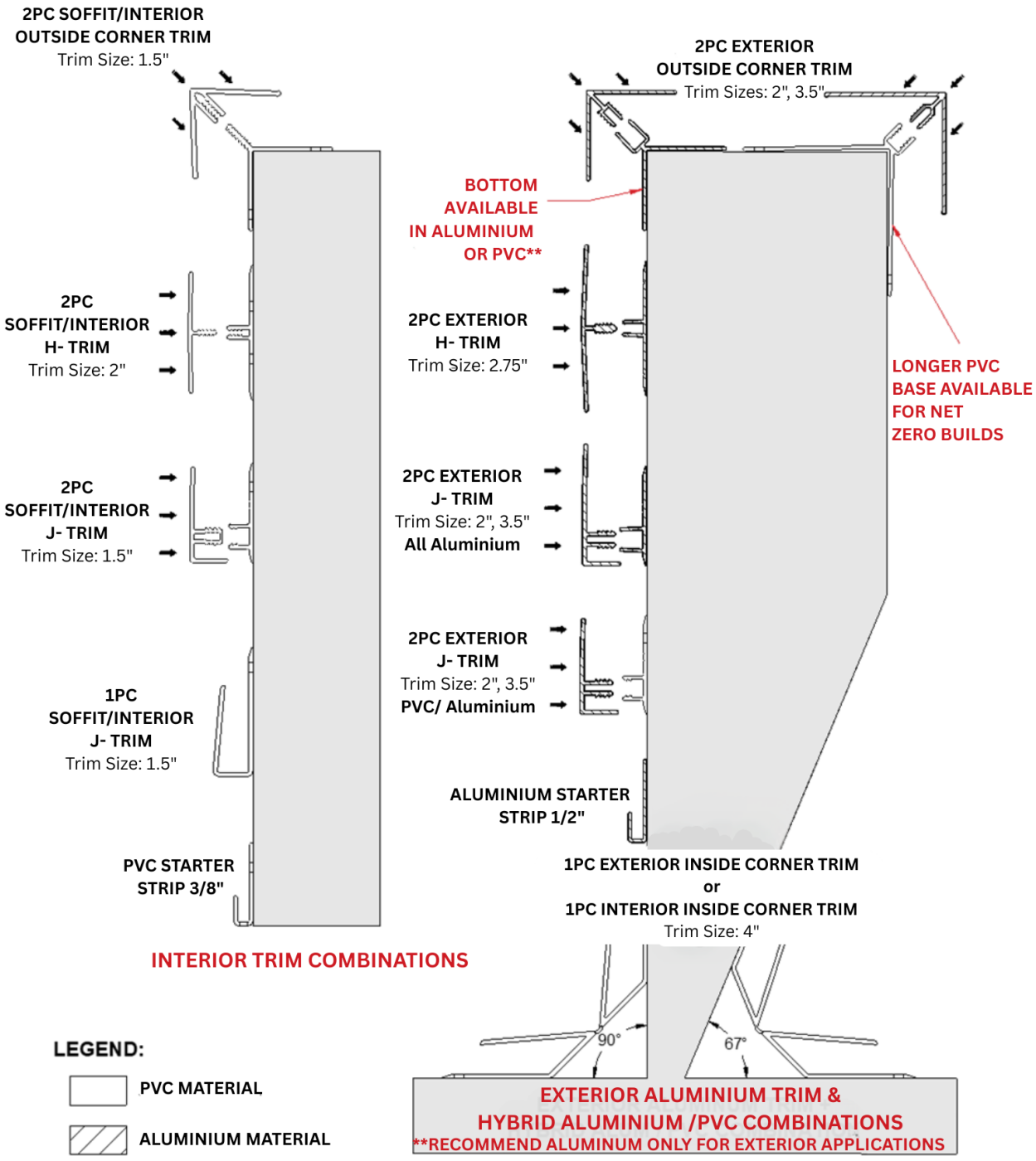


Product Cleaner

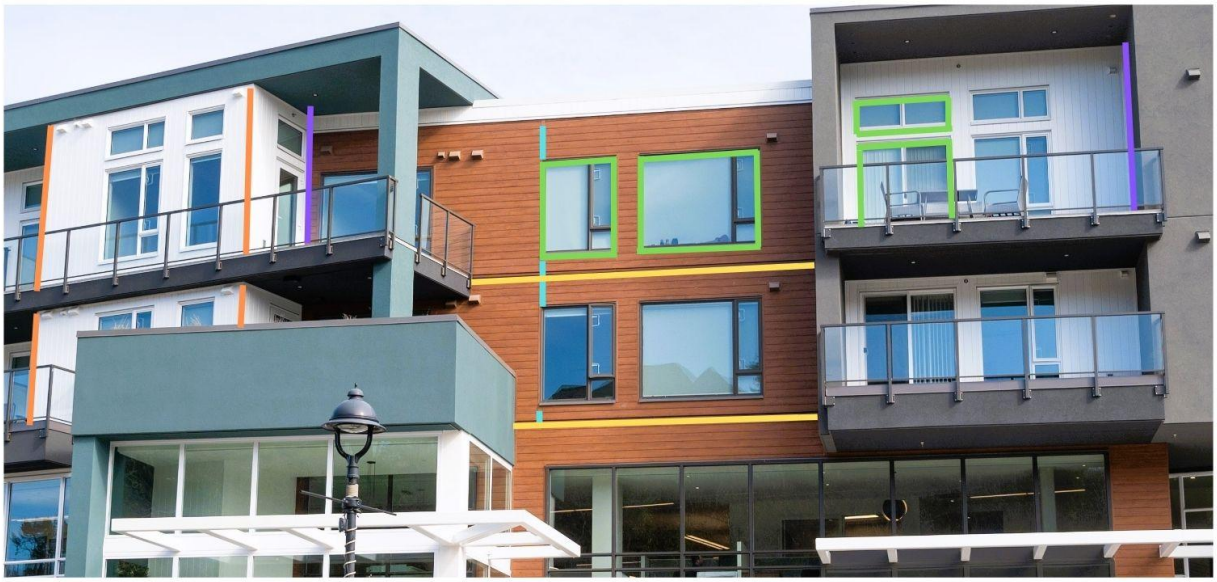
ChamClad® non- solvent cleaner is designed to effectively remove dirt, debris and other surface contaminants from wall panels, and related components.

6.4 Trim Configuration

TRIMS-Install bottoms at entire perimeter, followed by wall panel and finish with trim cap install.
NOTE: Use a non marking rubber mallet or hammer & block if required.



6.5 Panel & Trim Application



OUTSIDE CORNER TRIM: Location - Outside Corners of Installation Area
Detail - 2" & 3.5" Outside Corner for Horizontal or Vertical Application. 3.5" is recommended for lengths over 24 ft.

INSIDE CORNER TRIM: Location - Inside corners, ceiling panels and curved walls
Detail -4" Flexible PVC with 180^0 angle. For exterior, interior wall and ceilings. Horizontal and vertical application.

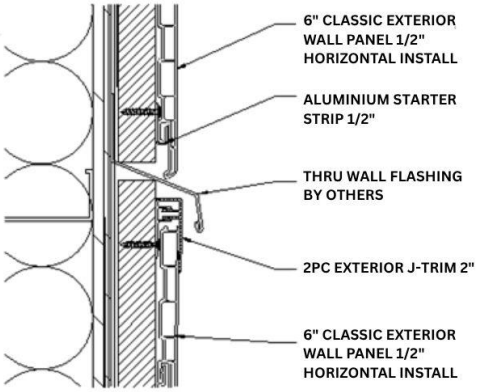
2PC J-TRIM: Location - Outer edges, window & door trim, along gable end walls, floor and ceiling.
Detail - 2" & 3.5" J-Trim for horizontal, vertical application and termination walls.
3.5" recommendation for length over 24 ft. Miter cut ends for clean finish.

2PC H-TRIM: Location - To join panels together. BUTT JOINTS ARE NOT PERMITTED
Detail - 2.75" Aluminium H-Trim for horizontal, vertical, wall and soffit application. 2" PVC for soffit and interior application only.

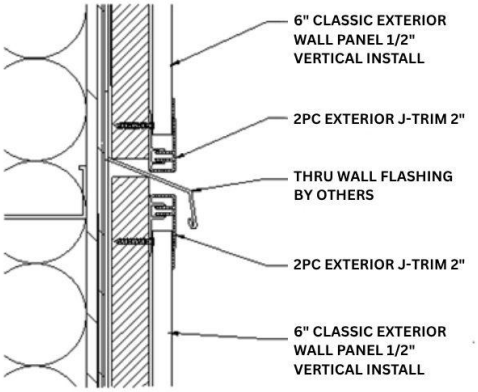
STARTER STRIP: Location -To start panel on horizontal application & for center wall back-to-back for vertical install for equal width ends
Detail - Aluminium for 1/2" panels and must be drilled for drainage holes. PVC for 3/8" panels are available with pre-drilled holes.

THRU WALL FLASHING: Location - Compression joints on floor elevations.
Detail - Used for movement (expansion and contraction) in building between floors.

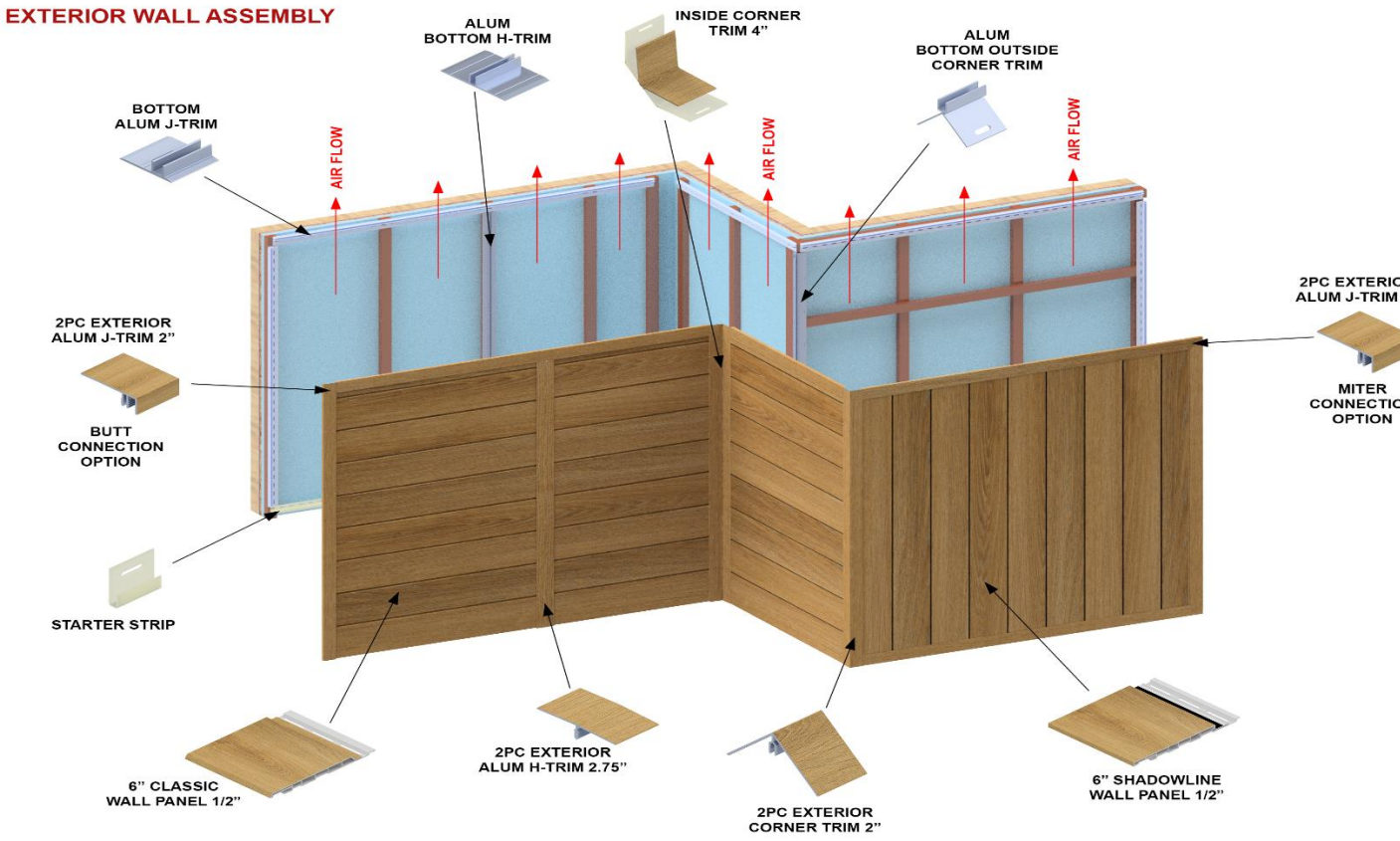
THRU WALL FLASHING HORIZONTAL INSTALL

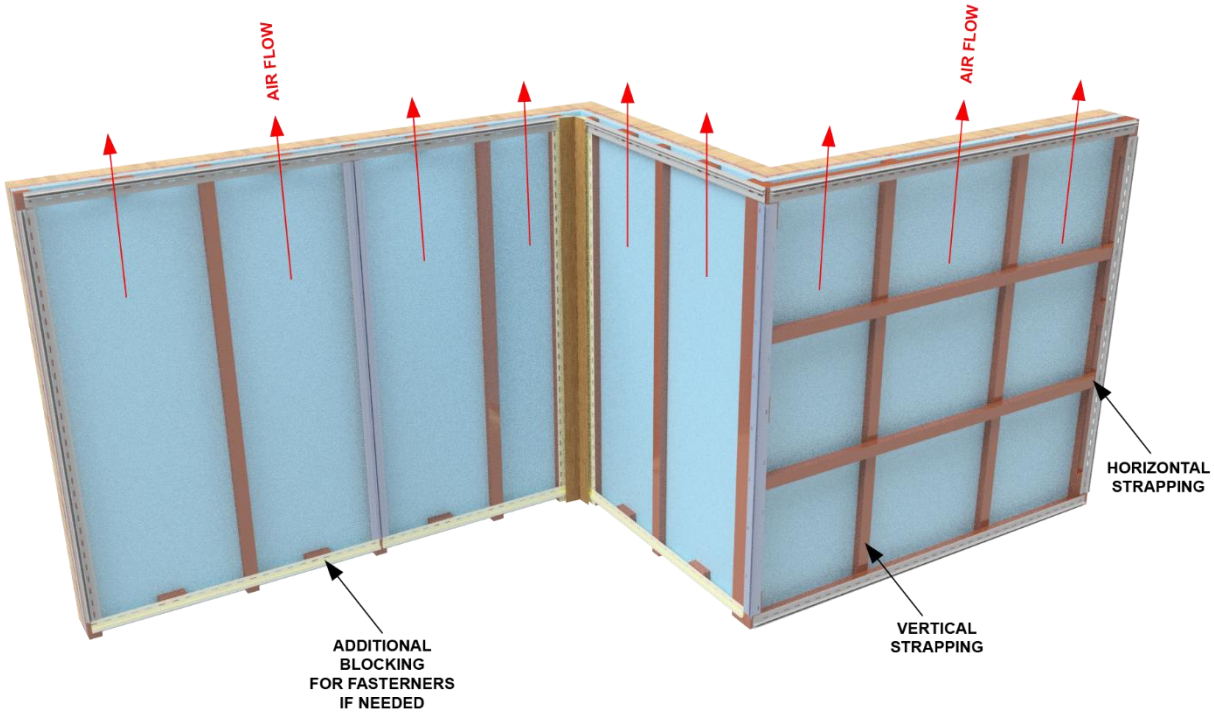


THRU WALL FLASHING VERTICAL INSTALL



6.6 Exterior Wall Assembly with Vented Cavity Assembly





7.0 INSTALLATION-

6” Classic, 6” and 12” Shadowline Series, and 12” Shadowline Seamless-Exterior Wall Panels ½”

7.1 Important Information / Before You Begin

- Acclimate panels and accessories for a minimum of 24 hours prior to installation. With each course of ChamClad® panels, proper gaps must be left between the end of the wall panel and the track of the base trims for expansion and contraction.
  - **Refer to 5.1 Rules of Thumbs – Gap Allowance OR Appendix C – Gap Reference Chart**
- 12” x 1/2” (300mm x 13mm) Shadowline Seamless panel can be mixed and matched with our Shadowline Series.
- DO NOT BUTT JOIN WALL BOARDS – an H-Trim **MUST** be used. Leave a proper gap inside the H-Trim to allow for expansion and contraction Do not install the H-Trim top cap until all wall panel courses are up.
- Installation in weather colder than -10°C (14°F) is not recommended due to potential chipping or cracking of the panels. Should that occur, warranty may be voided.
- Steel stud framing, associated sub girts and fasteners to be installed as designated by the appropriate design professional. A minimum of 20 gauge or lower MUST be used and installed 16-24” (400mm–600mm) O.C.
- Except where designated in this manual, it is critical that fasteners are installed in the manufacturer’s pre-drilled holes. If you need to apply a fastener and it is in a section that does not have a manufacturer’s pre-drilled hole, you MUST pre-drill a nail slot (using a nail slot punch) to allow the panel to expand and contract without restriction.
- All exterior panels may be used for interior applications. Refer to Interior Wall and Ceiling installation manual for detailed instructions.

Note: DO NOT USE a stapler, or nail gun for exterior cladding and soffit panel installation

Note: GLUE IS NOT to be used to fasten strapping or ChamClad® exterior wall board

7.2 Horizontal Installation

Refer to Assembly Drawings on WS-0.31 to 0.34 & WS-05.1 to 05.4

- Use a level to produce a guideline around the entire building and mark with a chalk line.
  - Snap line where the starter strip will be installed.
- Starter Strip:
  - PVC: Install PVC starter strip fastening every 12” (300mm) leaving a 1/32” (.8mm) gap from fastener head to nail flange to allow for horizontal expansion and contraction.
  - Aluminum: Hard pin aluminum starter strip fastening every 12” (300mm).
  - Follow local building codes for clearances to grade (if required)
- Install flashing and trim bases around windows, doors, utility box fixtures, and all other penetrations through the wall cladding. We recommend all ChamClad® accessories be fastened every 8” (200mm).
- Begin installing your bottom courses of wall panels using ChamClad® universal screws. **When installing panel lengths 20’** (6.1m) **and over, it is recommended to use the large, faced trims to allow for appropriate expansion and contraction**. Check every three or four courses to ensure that wall panels are properly engaged and level and that adjacent panels are aligned horizontally.
- Fasten all panels 16-24” O.C. (400mm x 600mm) starting within 4” (100mm) from both ends of panel.



- **For panels over 25’** (7.6m) **-** Pin the panel (at the middle of panel) by fastening each side of the nail slot, then continue securing it in the nail slots following the recommended fastening pattern. This method helps distribute expansion and contraction evenly throughout the panel installation.
- ***Refer to 5.1 Rules of Thumbs – Gap Allowance OR Appendix C – Gap Reference Chart***
- Except where designated in this manual, fasteners must be placed in and through the **center** of the nail slot. The fastener must be installed straight and not on an angle. The head of the screw or crown should allow for the thickness of a dime (roughly 1/32” .8mm) behind the face of the mounting hem to allow for expansion and contraction of the wall panels.
- When installing final top horizontal panel, back bevel to ease installation of last panel. A new nail slot must be created through the face of the siding, with an opening large enough to accommodate the screw head and but does not allow nail head to go thru at the back side of panel (portion that attaches the cladding). Follow standard fasting requirements.

- If you need to apply a fastener in a section that does not have a manufacturers pre-drilled hole, you MUST pre-drill a nail slot to allow the panel to expand and contract without restriction. (Nail slot punch may be used).
- Application of all trim top caps is the last step to completing wall panel installation. Ensure top caps are fully engaged.

7.3 Vertical Installation

Refer to Assembly Drawings WS-10A, WS-10B, WS 10.2 to 10.5

IMPORTANT NOTICE – Vertical Installation Not Evaluated by CCMC

The vertical wall panel installation procedures described in this section are outside the scope of the CCMC evaluation for ChamClad® siding products.
CCMC testing and assessment were performed on a horizontal wall cladding configuration only. This section is provided solely as manufacturer installation guidance, independent of any CCMC evaluation.

NOTES:

- Attach vertical claddings and trims using ChamClad® universal Screws. Screws must penetrate structural framing members.
- Install vertical exterior cladding to structural framing members when using non-structural sheathing, drywall, or foam. Install exterior cladding a minimum of 2” (50mm) above finished grade or as per local building codes. Allow 1⁄2” (13mm) above deck or concrete.
- At every floor level, it is recommended to break the installation using a thru-wall flashing (supplied by others) or a ChamClad® H-Trim and restart following steps above. The first course of vertical cladding ends in the bottom of the H-Trim with the second course starting in the top of the H-Trim following the steps listed above. Always confirm local building code requirements.

7.4 Vertical Install Method

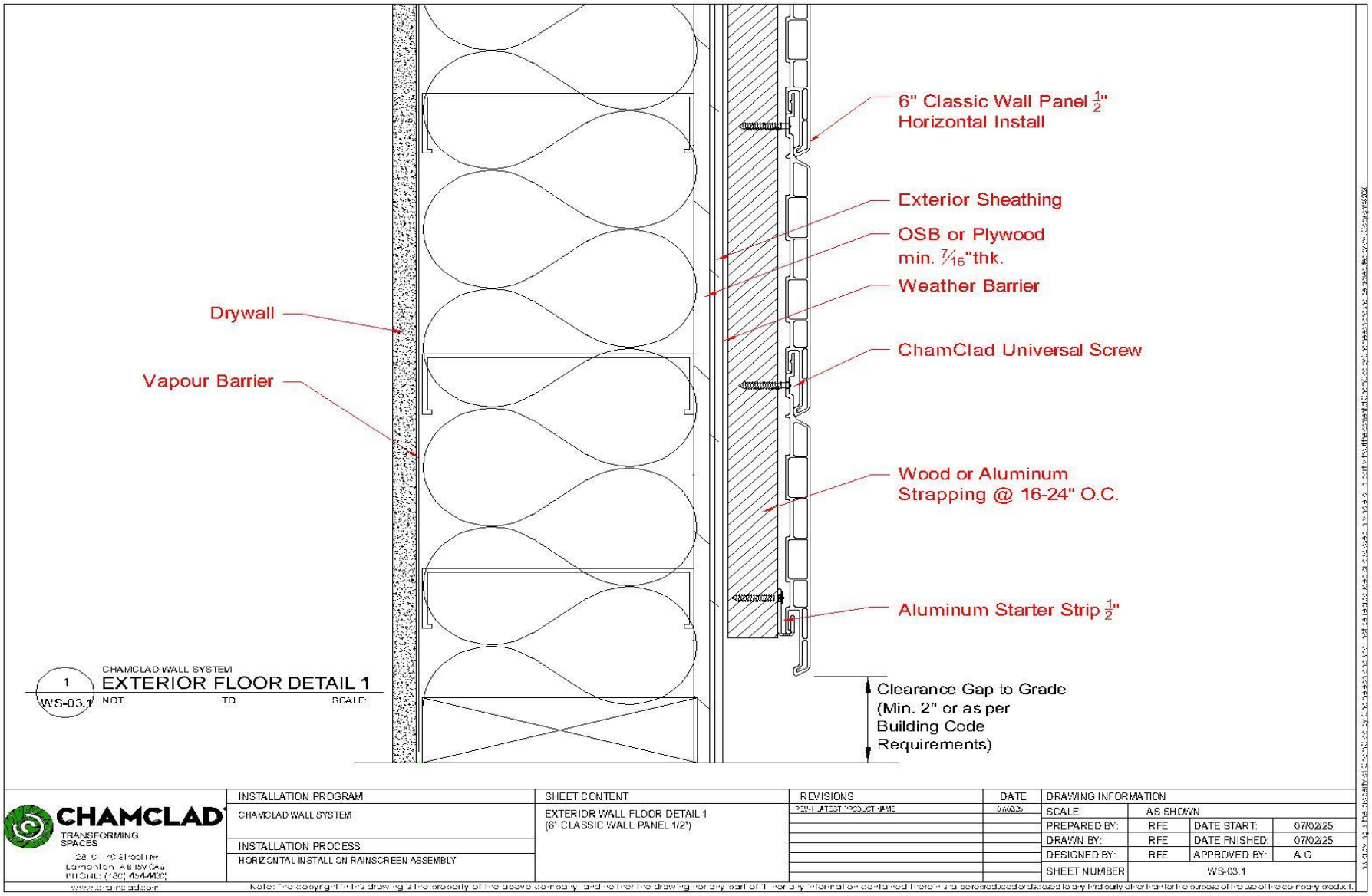
- For a balanced layout; plan panel modules to achieve equal panel terminations. This avoids finishing with a batten and/or narrow end cut panels. It is recommended that you do not finish with narrow end cut panels less than *6 inches* for aesthetic reasons (not performance)
- For assistance in layout, email engineering@chamclad.com.
- Refer to drawing WS- 10B.
- Snap a level chalk line around the base of the building and install the 2PC J-Trim as the starter strip, fastening it every 8-12” (200mm-300mm). For optimal results, we recommend using all aluminum or aluminum/PVC hybrid combinations when installing the 2PC J-Trim.

- Continue installing bases of all 2PC Outside Corners, H-Trims and 2PC J-Trims, fastening every 12” (300mm). Please note all 2PC trims require solid backing. We recommend all ChamClad® vertical panels and accessories be fastened every 12” (300mm).

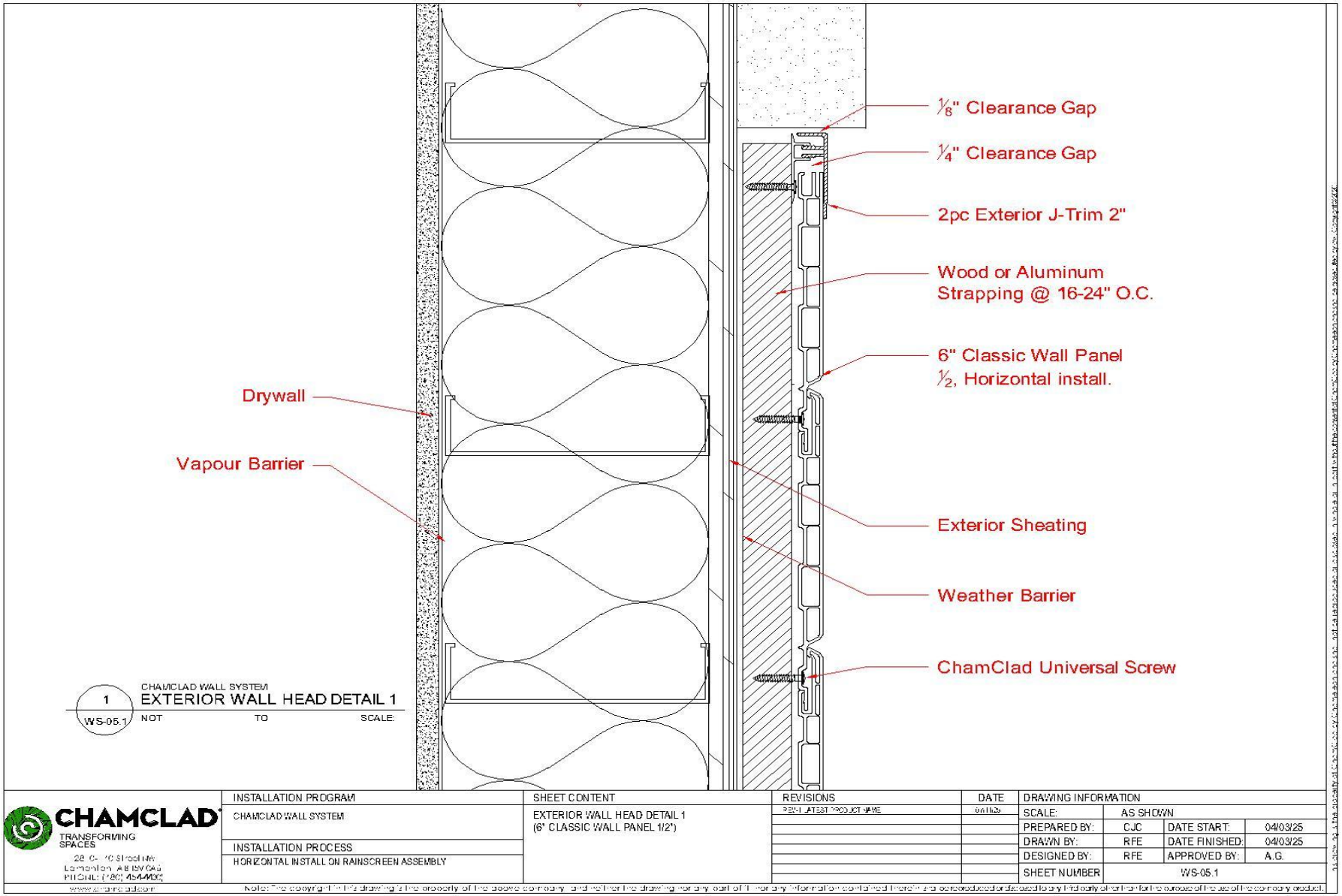
- To complete the install, apply the top caps of all 2PC trims using a deadblow hammer tapping gently until it locks in place. Ensure trims are fully engaged. Note: All 2PC trims must have equal length base and top to support the trim top and ensure full length engagement.

8.0 ASSEMBLY DRAWINGS – HORIZONTAL

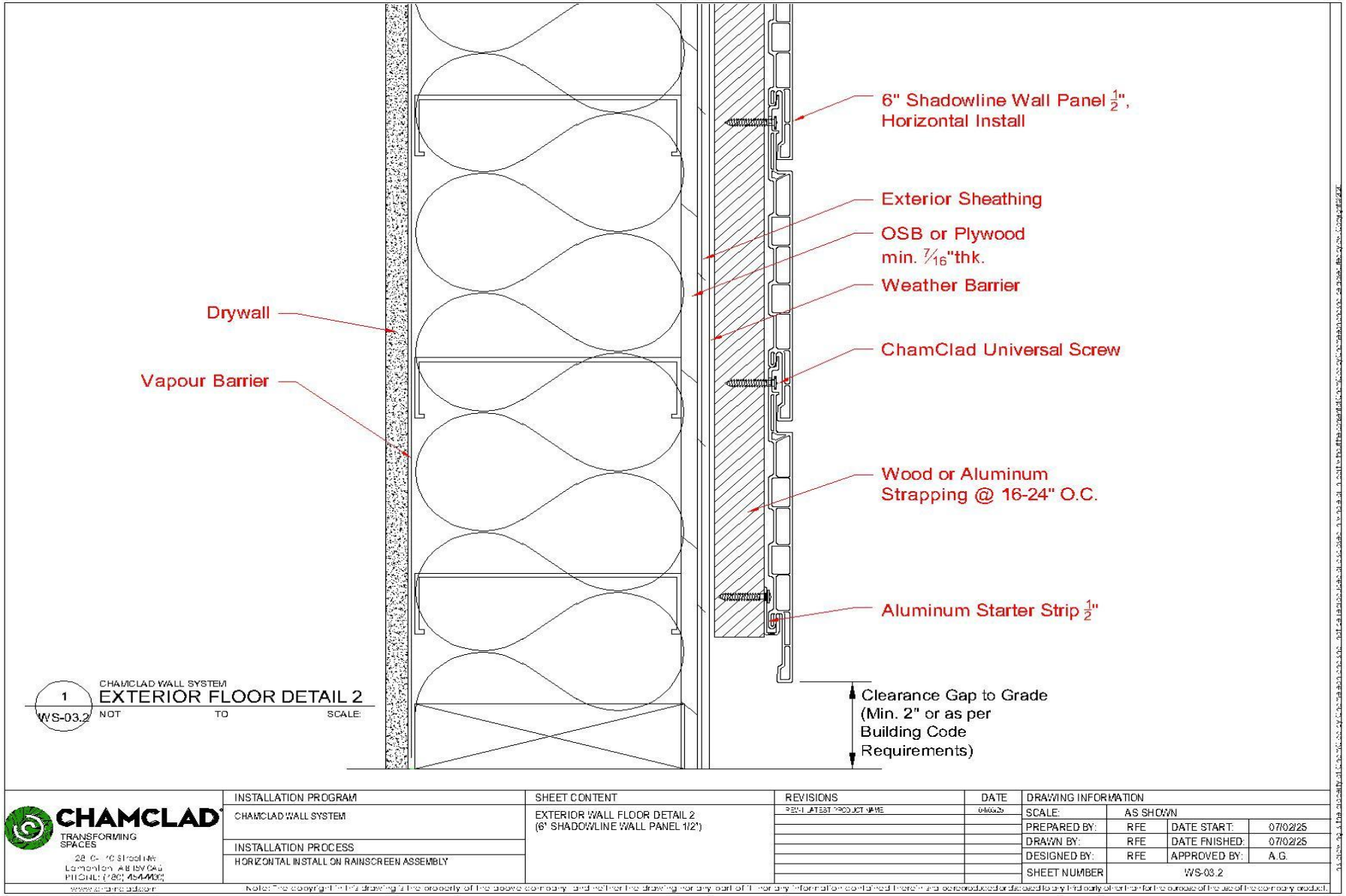
8.1 WS-03.1 Exterior Floor Detail 1



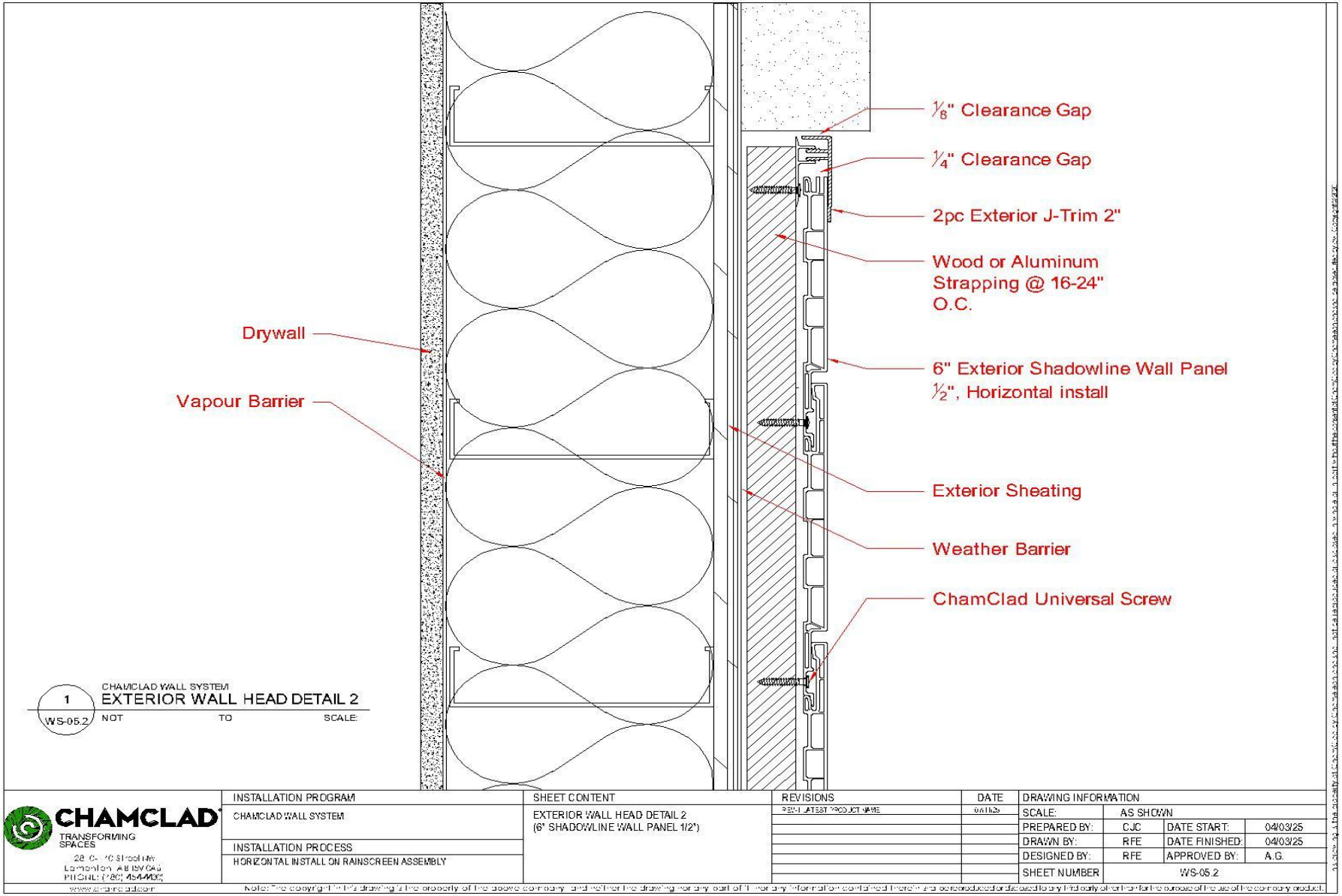
8.2 WS-05.1 Exterior Wall Head Detail 1



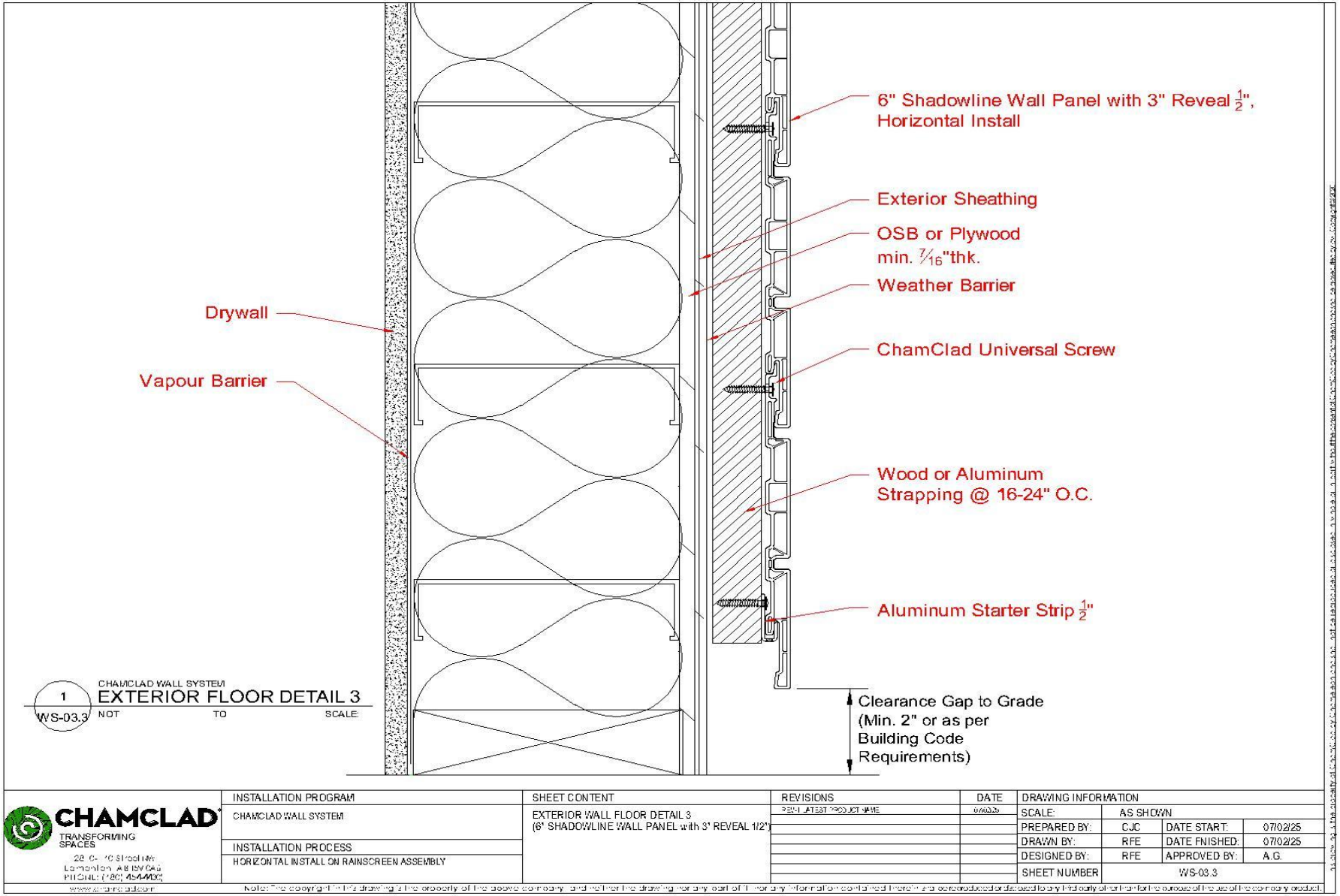
8.3 WS-03.2 Exterior Floor Detail 2



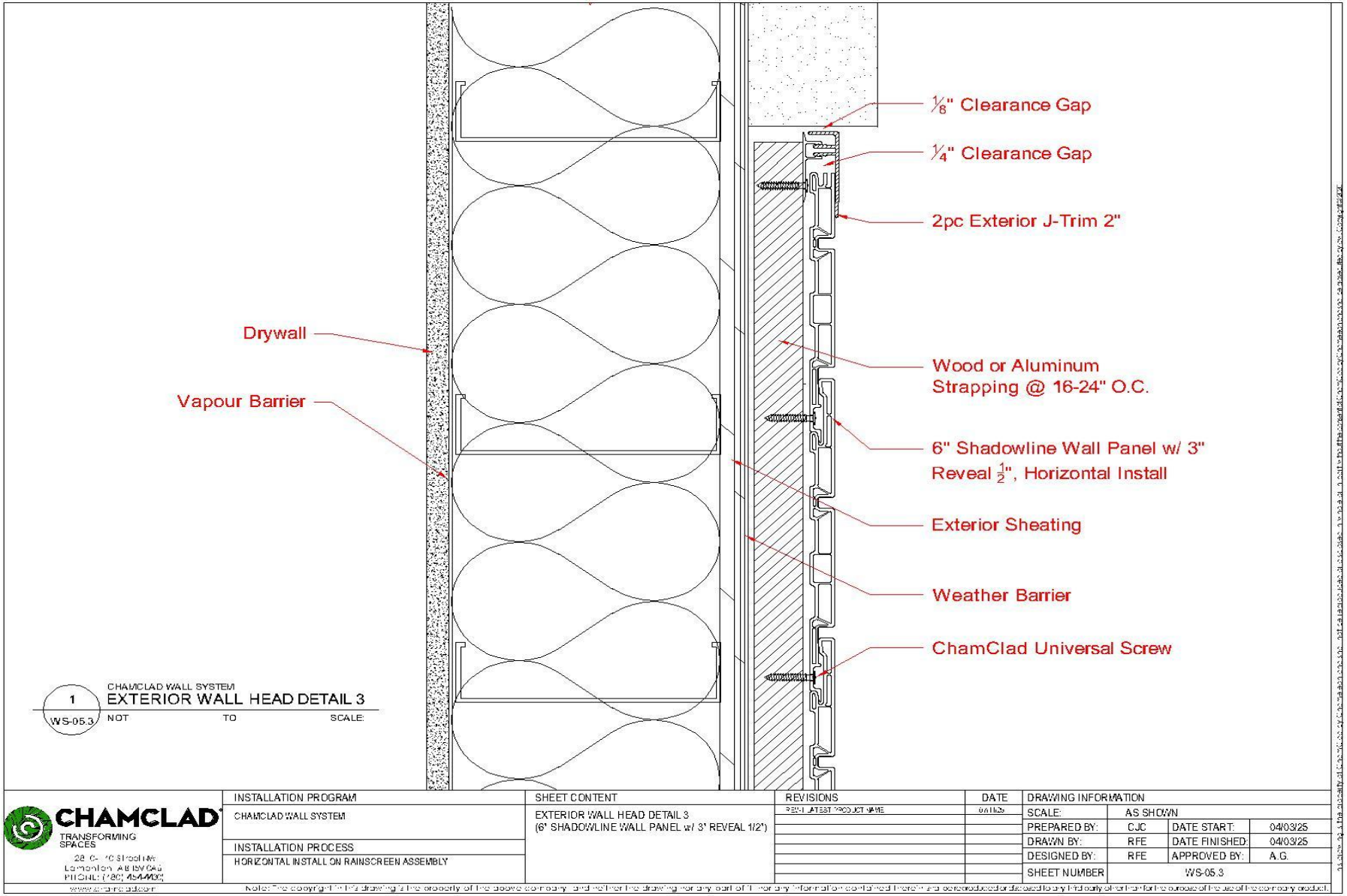
8.4 WS-05.2 Exterior Wall Head Detail 2



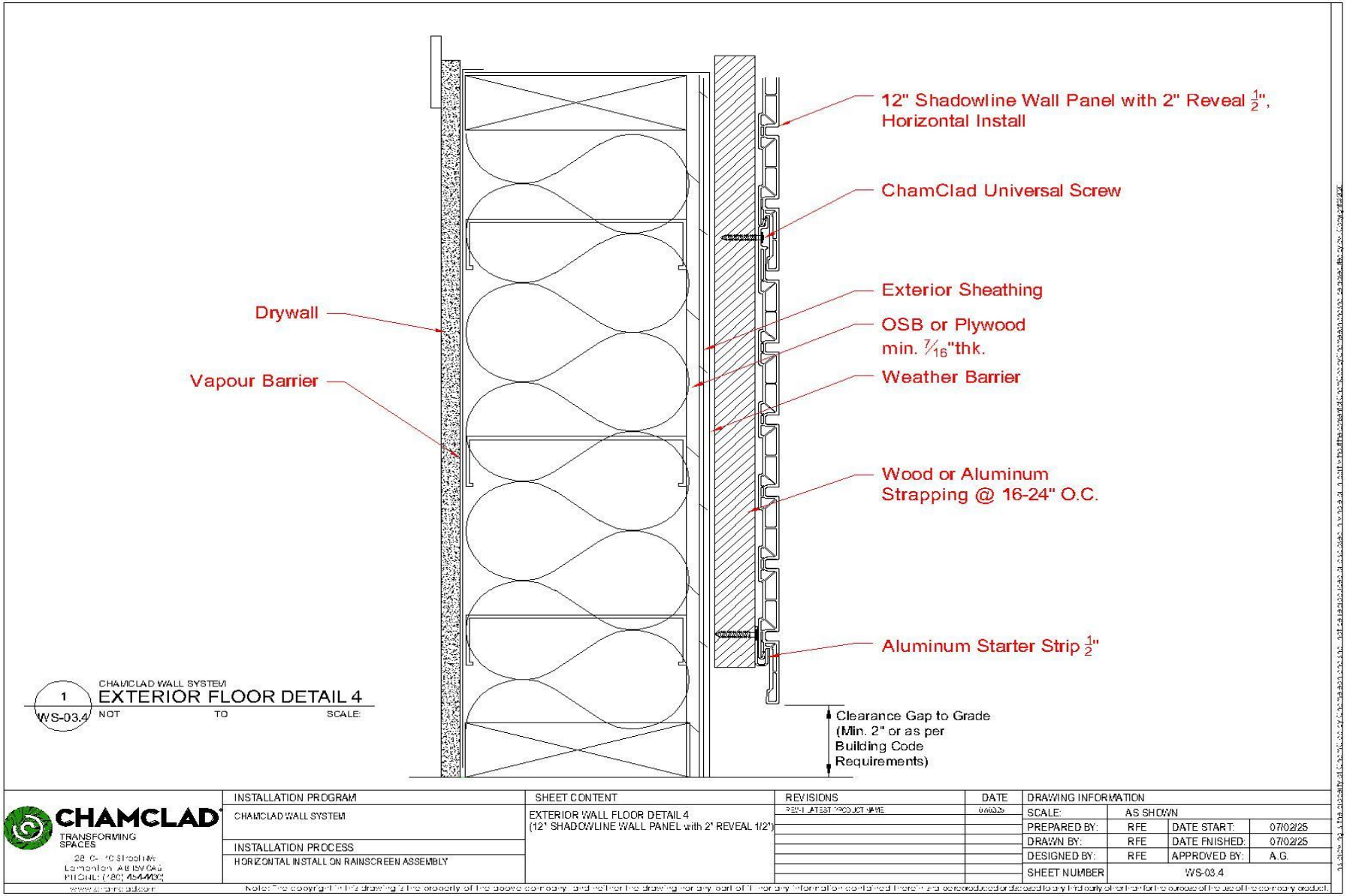
8.5 WS-03.3 Exterior Floor Detail 3



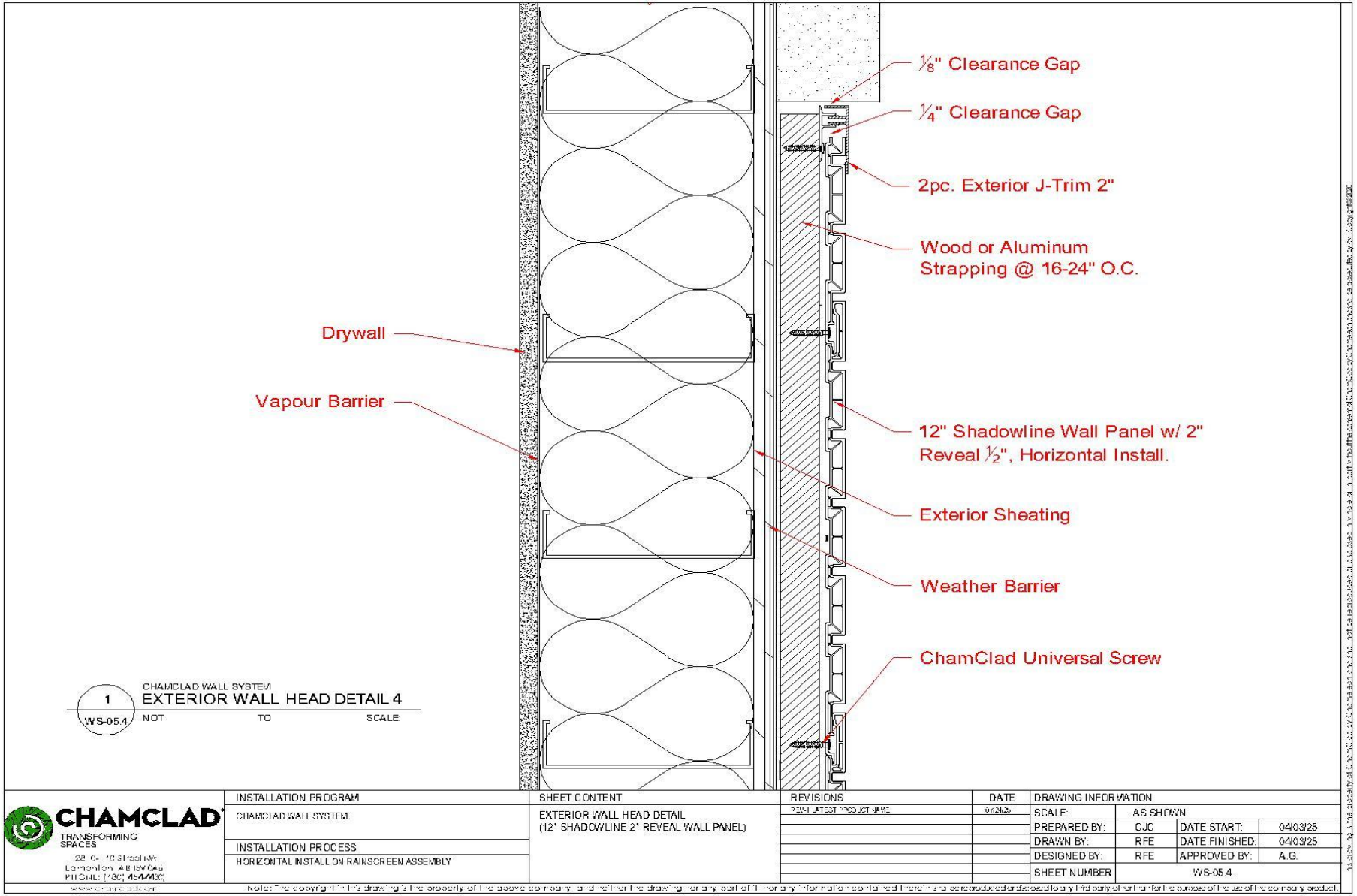
8.6 WS-05.3 Exterior Wall Head Detail 3



8.7 WS-03.4 Exterior Floor Detail 4

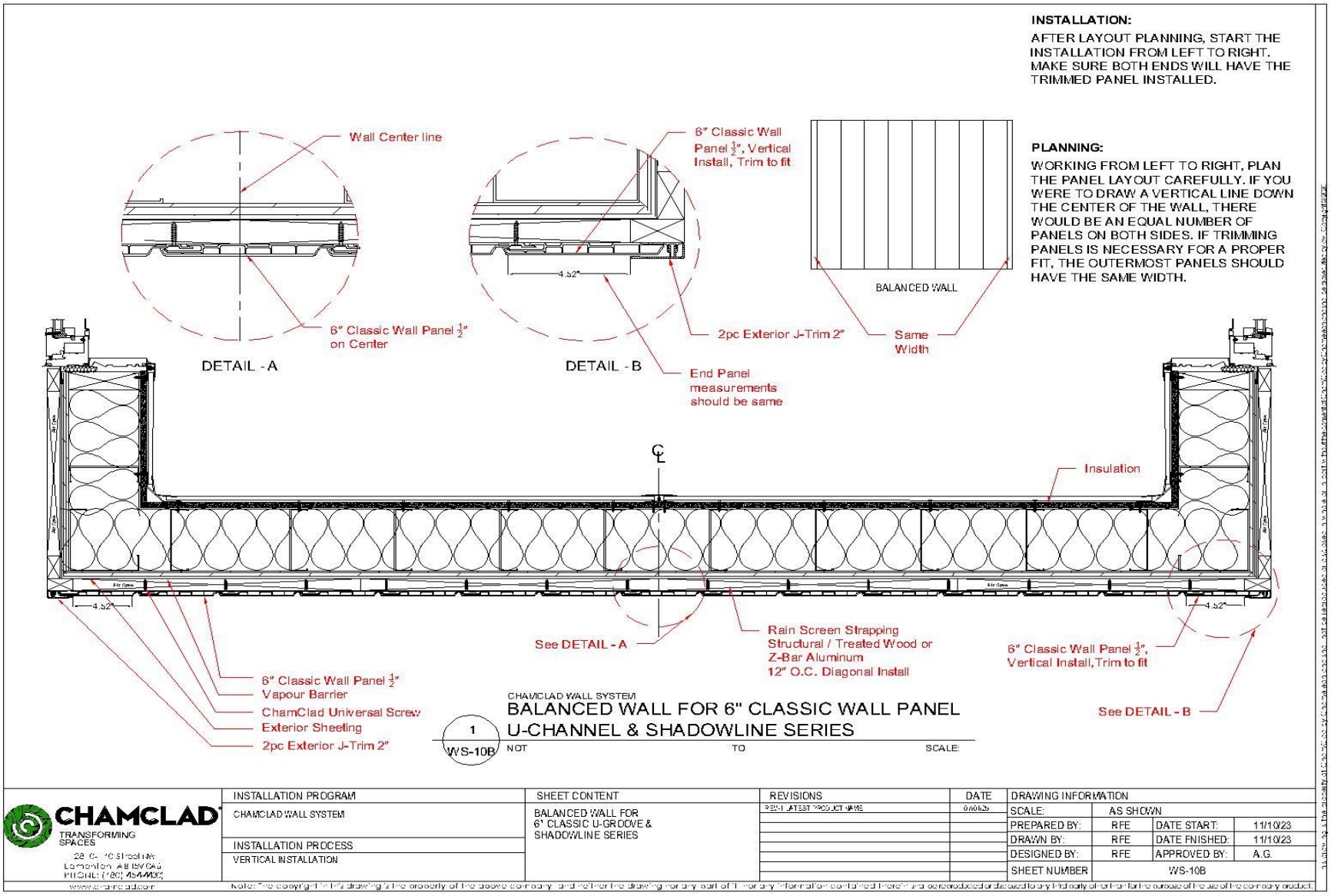


8.8 WS-05.4 Exterior Wall Head Detail 4



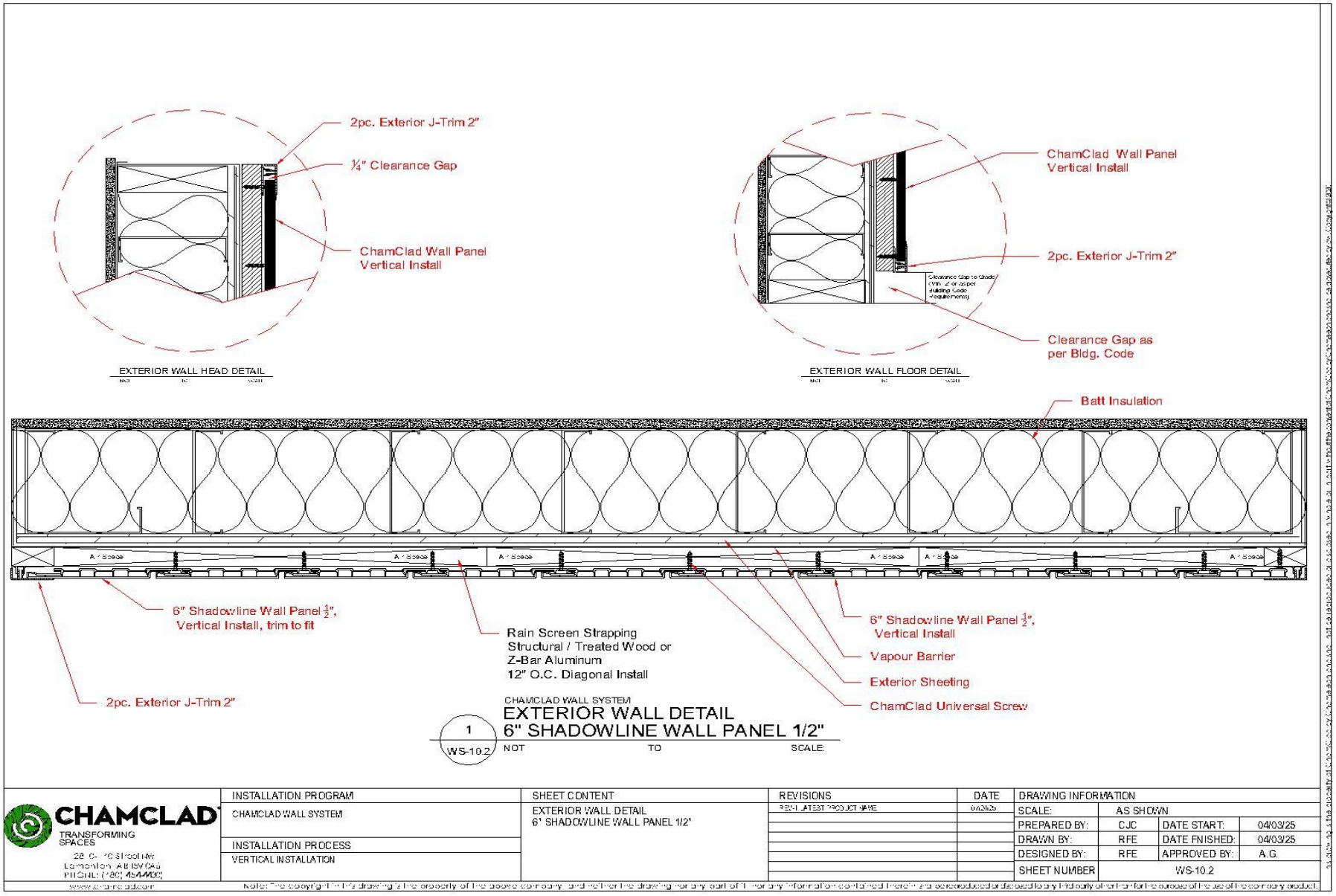
9.0 ASSEMBLY DRAWINGS – VERTICAL**

9.2 WS-10B Balanced Wall For 6” Classic U-Channel & Shadowline Series**



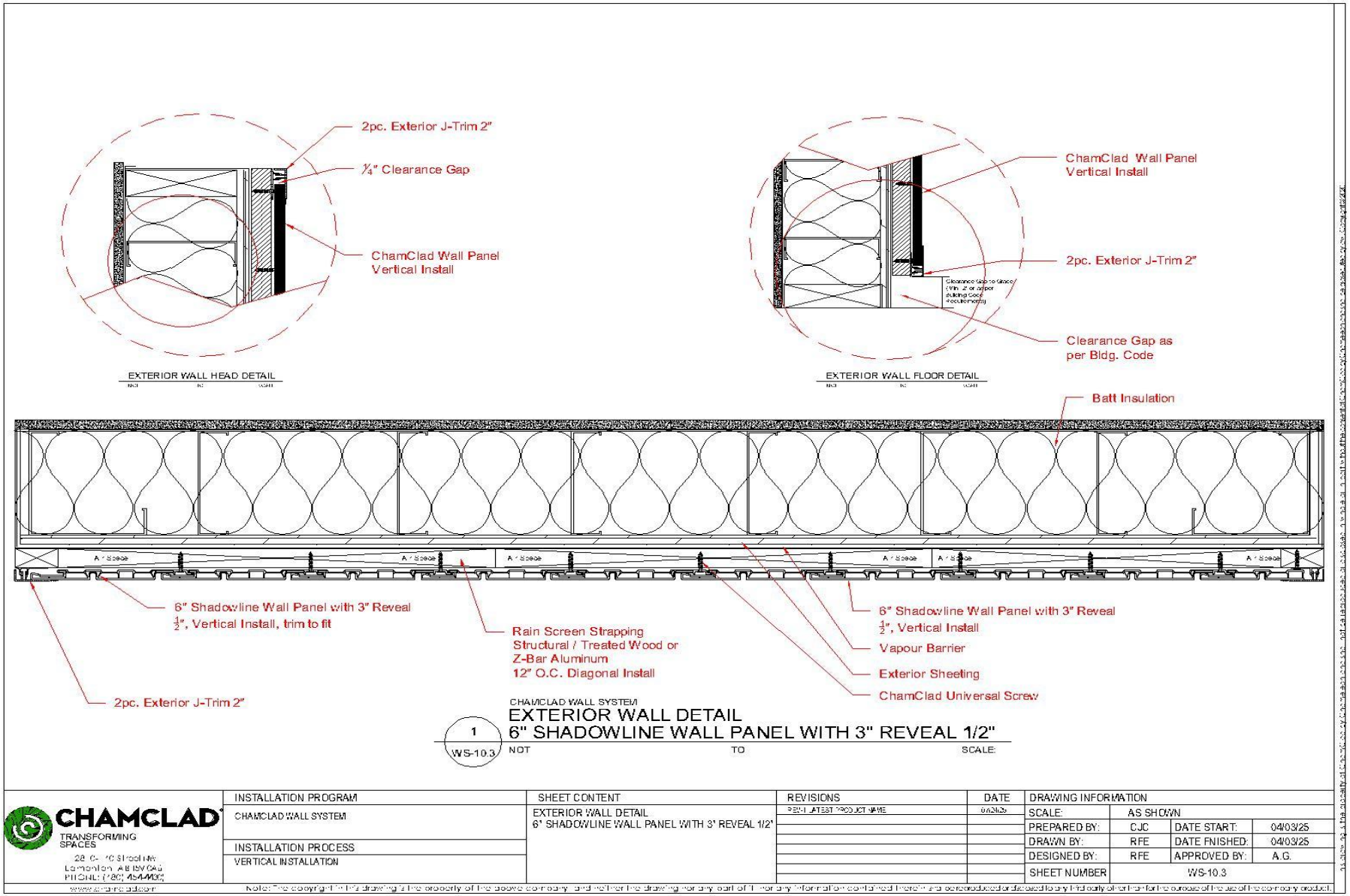
** Vertical Installation Not Evaluated by CCMC

9.3 WS-10.2 Exterior Wall Detail 6” Shadowline Wall Panel 1/2”**



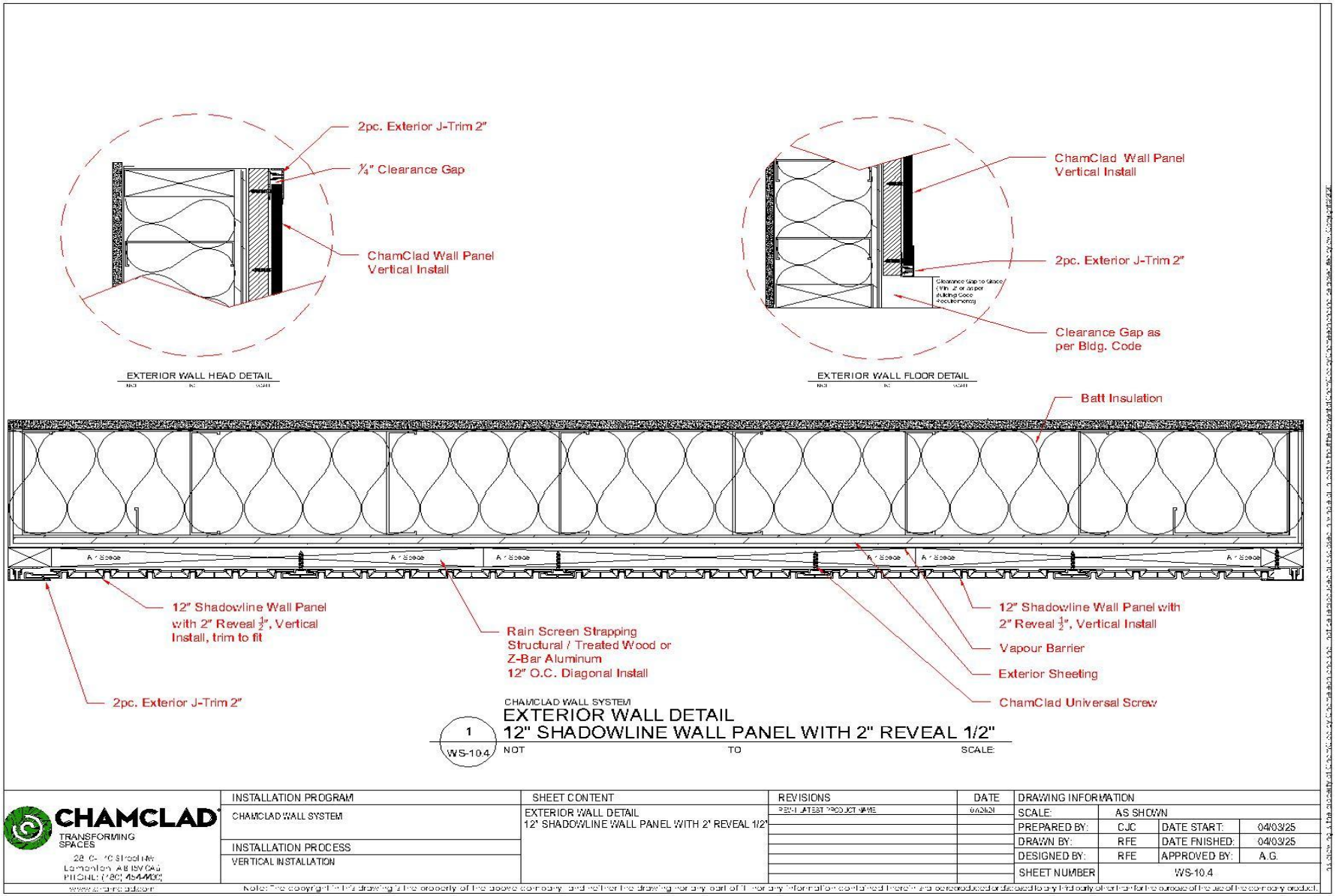
** Vertical Installation Not Evaluated by CCMC

9.4 WS-10.3 Exterior Wall Detail 6” Shadowline Wall Panel with 3” Reveal 1/2"**



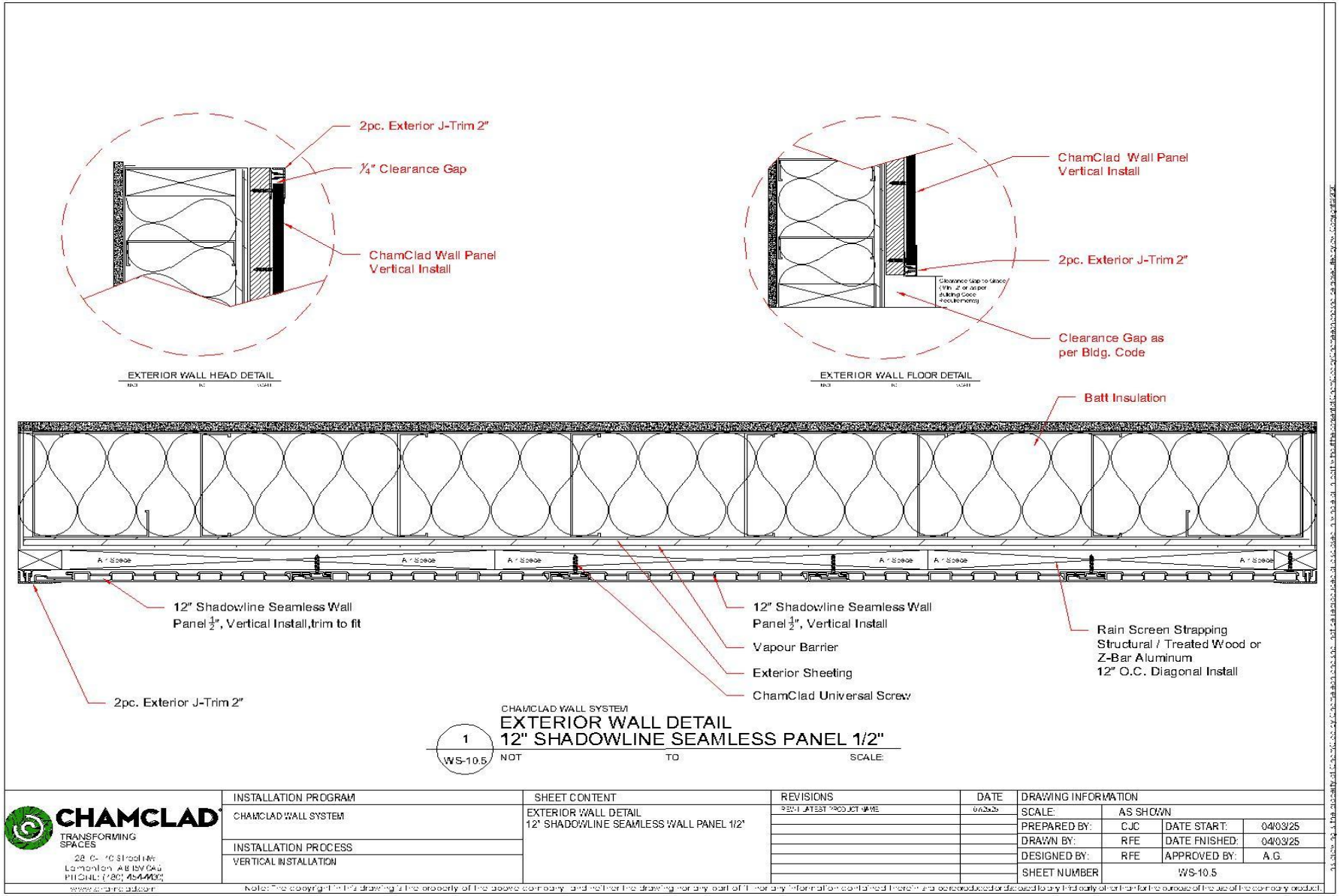
** Vertical Installation Not Evaluated by CCMC

9.5 WS-10.4 Exterior Wall Detail 12” Shadowline Wall Panel with 2” Reveal 1/2"**



** Vertical Installation Not Evaluated by CCMC

9.6 WS-10.5 Exterior Wall Detail 12” Shadowline Seamless Panel 1/2"**



** Vertical Installation Not Evaluated by CCMC

APPENDIX A – GENERAL INFORMATION & ADVISORY

This bulletin provides non-procedural information that supports—but does not replace—the Installation Manual. It covers certifications, product behavior notes, storage compatibility, and code responsibilities.

Certifications

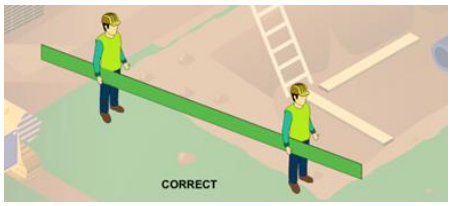
Certification scope, test standards, and applicability vary by profile and application. Always verify current evaluation reports and project-specific requirements.

Product Background & Manufacturing Notes

- **Continuous improvement**: Our research and development team are committed to improving product durability and performance. As a result, documentation may change from time to time. Please check our website for the most recent documentation and bulletins.
- **Minor manufacturing irregularities**: Occasionally, you may come across minor irregularities that happen naturally during the manufacturing process. This occurrence will not affect the aesthetics and performance of the product.
- **Aluminum trim film shrink-back**: Periodically, you may encounter aluminum accessories where the ends need trimming due to the film shrinking back during the curing process. This occurrence will not affect the performance of the product.
- **Pattern repeat**: ChamClad® wall panels are laminated with a repeating pattern (48” or 1.2m). ChamClad® makes every effort to ensure the patterns are mixed in each bag to minimize repeat patterns. It is suggested to randomly check panels at the job site for repeat patterns and adjust as required. To avoid excessive repetition when cutting boards 4’ (1.2m) or less, use 2 boards with different patterns.
- **Inspection of Materials:** Inspect all material for any breakage, defects, damage, and colour before installing. Do not install product that is questionable. Contact ChamClad® customer service or your dealer for assistance. Installing defective material may void your product Warranty.

Transportation, Proper Handling & Storage

- When transporting ChamClad® products, keep bags flat. The boards must be supported along the full length. Whenever possible avoid using metal banding. Metal banding will cut into the boards if pulled too tight. Materials are required to be inspected for any damage within 7 days of receipt, recorded on the Bill of Lading, and forwarded to info@ChamClad.com. ChamClad® warranty may be voided if damaged product is installed without prior inspection.
- Always carry ChamClad® cladding by holding it by the narrow edge and pick boards up in the center. ChamClad® pallets should not be stacked more than 2 pallets high and always stored on a flat surface.





- Products must be on a flat surface which supports the entire length of the boards and should be kept dry and out of direct sunlight (when possible). Do not store or place on asphalt or in areas prone to excessive heat buildup. Cover with a tarp leaving ends open to allow for airflow. Store away from areas where there may be falling objects or construction debris that could cause damage. If stacking product, please ensure it is stable.
- ChamClad® packaging is vented to limit the greenhouse effect. Do NOT store uninstalled panels in areas of excessive heat prior to installation; doing so may lead to product distortion.
- Note: It is important that product is not stored for long periods where temperatures could exceed 30 degrees Celsius (86 degrees Fahrenheit).

Building Code Responsibilities

- It is the responsibility of the installer to observe the requirements of the local Building Code as they relate to installation in any given area. Most Building Codes are derived from National Building Codes. In Canada, the primary model is the National Building Code (NBC), which is published by the National Research Council of Canada (www.nrc-cnrc.gc.ca). In the United States, the primary model is based on the International Building Code (IBC), which produces the International Residential Building Code (IRC).

Warranty & Documentation

- Read the **Installation Manual in full** before starting.
- Use the **latest** Manual and Bulletins from ChamClad.com.
- Materials are required to be inspected for any damage within 7 days of receipt, recorded on the Bill of Lading, and forwarded to info@ChamClad.com. ChamClad® warranty may be voided if damaged product is installed without prior inspection.
- Warranty documentation can be found on at Chamclad.com. Technical Resources - ChamClad

Contact

- **Technical/Engineering**: engineering@chamclad.com
- **Customer Service**: info@chamclad.com
- **Website**: https://chamclad.com
- **Warranty**
  - **Registration: info@chamclad.com**
  - **Claims: claims@chamclad.com**

This bulletin contains advisory content only. Follow the Installation Manual for step-by-step procedures and mandatory requirements.

APPENDIX B- FASTENER AND TOOL GUIDE

This appendix provides the technical and field guidance required for properly cutting and fastening ChamClad® panels. It is intended to be used with the Installation Manual.

Tools, Materials and Cutting



- Always ensure you wear proper, appropriate and standard PPE when performing cutting and installation.
- If using a circular saw, cut cladding face down on a clean surface.
- If using a cut-off saw, cut face up
- Carbide-tipped blades with 84+ teeth are recommended. (Aluminum blades are optimal)
- Do not score or snap ChamClad® exterior cladding
- Do not cut ChamClad® with coarse saw blade to avoid chipping or damaging the panel

Fasteners

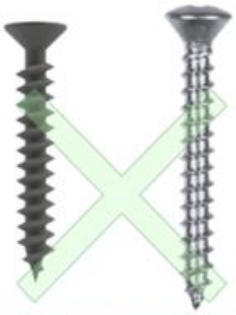
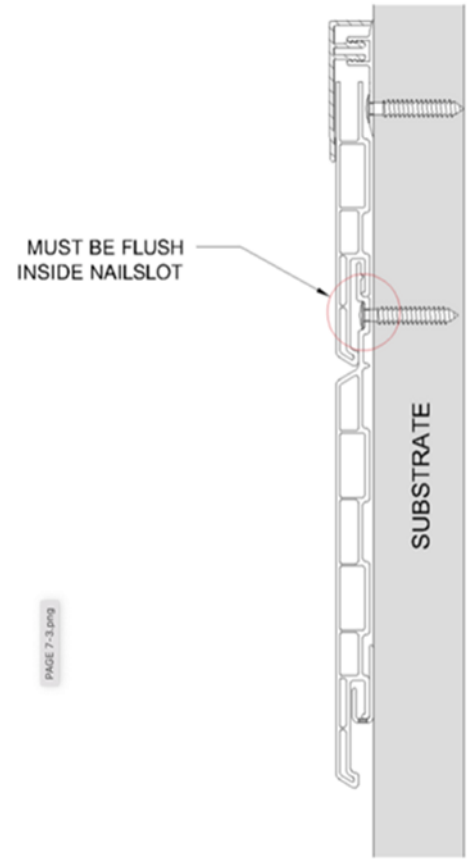
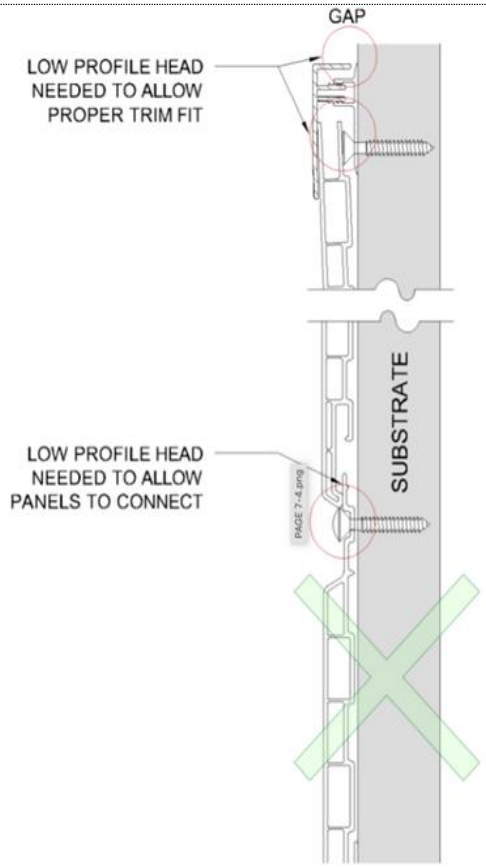
Fastener Size is critical to a successful ChamClad® installation. We recommend the following:

- Screws: It is strongly recommended to use ChamClad® universal self-tapping screws which are available from your local distributor or directly from ChamClad®.
- The fasteners must penetrate the wall to a minimum depth of 1 ¼" (32mm) and allow for the expansion and contraction of the ChamClad® products. If using metal furring strips, use of self-drilling screw is recommended (Modified truss quadrex coarse thread self-drilling screw #8-18 X 1 ½" (38mm)). You must pre-drill pilot holes when using ChamClad's universal self-tapping screws, when screwing into metal.
- If ChamClad® fasteners unavailable, use low profile, corrosion resistant or stainless-steel screws long enough to fasten through the pre-punched flange. Do not use electroplated fasteners. It is important that the fastener head can fit inside the nailing slot. Fastener heads that protrude outside of the nailing slot will hinder ChamClad® tongue and groove locking mechanism.
- When placing fasteners in the center of the designated nail slots, always leave a 1/32" (.8mm) gap between the fastener head and nail flange to allow ChamClad® panels expand/contract as needed.

Recommended Screw	
	**#8-10 ChamClad Universal Self Tapping 1 ½" Screw** #8 quad-drive 1 ½" (38mm)
	**#8-10 ChamClad Universal Self Tapping 2 ¾" Screw** #8 quad-drive 2 ¾" (70mm)
	**#8- 18 ChamClad Universal Self Drilling 1 ½"**
Examples of Alternate Screws:	
	**Exterior Wall** #8 1 ½" (38mm) 17 Self tapping Round Washer Lo-root
	**Modified Truss Quadrex Coarse Thread Screw Self-Drilling** #8 – 18 X 1 ½" (38mm)
Alternate Trim Fasteners	
	**Flat Head Roofing Nail*** 1 ¼" – 1 ½" *Prior to use, confirm that alternate fasteners are permitted by the applicable building code and approved by the local Authority Having Jurisdiction (AHJ).

Note: DO NOT USE a stapler, or nail gun for exterior cladding and soffit panel installation. GLUE IS NOT to be used to fasten strapping or ChamClad® exterior wall boards.

Proper Fastener and Installation

PROPER FASTENERS / INSTALLLATION	INCCORECT FASTENER / INSTALLATION
 **NOTE**: UNIVERSAL FASTENERS PROVIDED BY CHAMCLAD MAYBE PURCHASED AT YOUR LOCAL DISTRIBUTOR **RECOMMENDED** LO-ROOT OR MODIFIED TRUSS HEAD	 **DO NOT USE** PAN-HEAD OR LOW TRUSS
 CORRECT INSTALL	 INCORRECT INSTALL

APPENDIX C– TECHNICAL EXPANSION & CONTRACTION REFERENCE

This appendix provides the technical background and field guidance required to properly account for thermal movement in ChamClad® panels. It is intended to be used with the Installation Manual.

Temperature Changes & Expansion / Contraction

- It is important to remember that ChamClad® materials will expand and contract with regular temperature changes. ChamClad® trims allow for any variance in panel lengths due to expansion/contraction.
- When placing fasteners in the center of the designated nail slots, always leave a 1/32" (.8mm) gap between the fastener head and nail flange to allow ChamClad® panels expand/contract as needed. **Do not leave more than a 1/32" of a gap.**
- The below guide provides expansion/contraction examples based on different panel lengths and temperature fluctuations.

Expansion Guide (by temperature shift)

Temperature Change in °C and °F		**Length of panels (feet)**				**Length of panels (meters)**			
°F	**°C**	**12'**	**20'**	**30'**	**35'**	**3.7m**	**6m**	**9m**	**10.7m**
50	10	0.10"	0.17"	0.25"	0.29"	2.5mm	4.3mm	6.3mm	7.4mm
68	20	0.20"	0.34"	0.50"	0.59"	5mm	8.6mm	13mm	15mm
86	30	0.30"	0.50"	0.75"	0.88"	7.6mm	13mm	19mm	22.3mm
104	40	0.40"	0.67"	1.01"	1.17"	10.2mm	17mm	25.6mm	29.7mm
122	50	0.50"	0.84"	1.26"	1.47"	13mm	21.3mm	32mm	37.3mm
140 (optimal gap)	60	0.60"	1.01"	1.51"	1.76"	15.2mm	25.6mm	38.3mm	44.7mm
158	70	0.70"	1.17"	1.76"	2.05"	17.8mm	29.7mm	44.7mm	52mm
176	80	0.80"	1.34"	2.01"	2.35"	20.3mm	34mm	51mm	60mm
ChamClad®'s Coefficient of linear expansion (CLE): 0.0000698		Total Expansion/ contraction per panel (inches)				Total Expansion/ contraction per panel (millimeters)			

Temperature Shift Example using ChamClad® products.

The change in length of ChamClad® panels due to temperature fluctuations is influenced by three key factors.

1. **The Coefficient of Linear Expansion (CLE):**
   For ChamClad® Panels, the CLE is 0.0000698 in/in/°C.
2. **Original Length of the Panel:**
   The length of the panel at the time of installation.
3. **Net Temperature Change**
   The difference between the installation temperature and the ambient temperature during use.

Expansion/Contraction Formula

To calculate the change in length of a ChamClad® panel, use the following formula:

Change in Length (in inches) =
(Original Length in inches) × (Temperature Change in °C) × (CLE)

Example

A 12 ft (144") ChamClad® panel is installed at **20°C (68°F)** and later exposed to **0°C (32°F)**.

Calculation:

144 × 20 × 0.0000698 = 0.20 inches (approximately 7/32")

The panel will contract by 0.20 inches, resulting in a new length of 143.80 inches. When the temperature returns to 20°C (68°F), the panel is expected to expand back to its original length of 144 inches.

General Rules

Based on a temperature change of 40°C (104°F), for example: 0°C (32°F) in cooler months and reaching 40°C (104°F) in warmer months:

- General rule of thumb, in summer and winter months.
  - **For panels up to 16' (4.9m)** leave a gap on each side of 1/2" (13mm)
  - **For panels up to 24' (7.3m)** leave a gap on each side of 5/8" (16mm)
  - **For panels 25' (7.6 m) and longer,** always pin at the midpoint by fastening directly through the nail rail (not the slot center). To determine the gap, use the distance from the pin to the panel end (half the total panel length) and refer to the gap chart below (page 14)
  - **Gaps 5/8" or greater**, we recommend using larger faced trims to allow for expansion and contraction (3.5" 2pc Finish Trim, 3.5" 2pc Outside Corner, larger faced H-Trim).

It is imperative that ChamClad® panels are cut to fit the coverage of trim pieces.

The temperature the day of installation factors into the expansion and contraction gap you leave. If installing on a cooler day allow for more expansion and a larger gap, if installing on a

warmer day allow for less expansion and a smaller gap. The below guide provides recommended spacing based on temperature and panel length.

Recommended Gap Allowance Temperature Guide

OUTSIDE TEMP.		GAP PER SIDE (inches)					GAP PER SIDE (Millimeters)				
°F	**°C**	**≤ 12'**	**16'**	**20'**	**25' ***	**30' ***	**≤ 3.6m**	**4.9m**	**6.1m**	**7.6m**	**9.1m**
14	-10	3/8	1/2	5/8	3/8	1/2	9	13	16	19	22
32	0	3/8	7/16	1/2	3/8	7/16	9	11	13	16	19
50	10	5/16	3/8	7/16	5/16	3/8	8	9	11	13	16
68	20	1/4	5/16	3/8	1/4	5/16	6	8	9	11	13
86	30	3/16	1/4	1/4	3/16	1/4	5	6	6	8	9
104	40	1/8	3/16	3/16	1/8	3/16	3	5	5	5	6

***** Gap allowance is based on panel being pinned (fastened directly through nail rail, not in center of nail slot) to equalize expansion and contraction.

Guidelines

- Take into consideration the temperature on date of installation and season you are installing in.
- Installation in weather colder than -10°C (14°F) is not recommended due to potential chipping or cracking of the panels. Should that occur warranty may be voided.

It is important to acclimate panels and accessories for a minimum of 24 hours prior to installation.

APPENDIX D: CARE AND MAINTENANCE

ChamClad® products are designed to be low maintenance, and our laminate films have exceptional properties that ensure ease of cleaning and surface longevity. They are highly ultra-violet, scratch, and salt air resistant. The film's low surface tension makes it inherently dirt-repellent and therefore easy to clean. ChamClad® finishes include anti-graffiti properties and, in most cases can be easily removed using a garden hose and mild kitchen detergent and warm water.

To preserve the lifespan of your ChamClad® product and maintain its warranty, regular cleaning and inspection are essential.

- Minimum Cleaning Frequency: In normal or urban environments, we recommend cleaning your ChamClad® product every 12-18 months.
- High-Exposure Areas: In areas subject to high pollutants, such as industrial or coastal environments, we recommend cleaning your ChamClad® product every 8-12 months.
- Regular Inspections: Inspect the product frequently and promptly remove any debris or contaminants such as bird droppings. Prolonged contact with such materials may lead to staining, uneven wear, or surface damage.

Refer to the recommended maintenance guidelines below to ensure optimal care for your ChamClad® product.

General Cleaning:

- You may clean the surface with a soft cloth, sponge or soft bristle brush and a neutral detergent. It is recommended to use ChamClad® Product Cleaner (supplied by ChamClad®) and/or a soap, or liquid cleaner (in non-concentrated form) such as Simple Green. Follow with a thorough rinsing of fresh water to ensure all cleaner has been removed.
- If marking has occurred from board-to-board friction, you may clean it with a soft cloth soaked in water and soap. Allow the cloth to sit on the area for 60 seconds. Panels should be rinsed thoroughly with clean water.
- To avoid streaking start at the top of the wall – working your way to the bottom.
- You may pressure wash ChamClad® panels with a low PSI pressure washer. DO NOT exceed 1500 PSI.

DO NOT:

- Do not use solvents when cleaning panels. Solvents may damage the protective layers in the film.
- Do not wash panels with a pressure washer at close range.
- Do not use abrasive, erosive, or caustic solvents to clean ChamClad® panels as they can dull and/or damage the panel finish and will void the warranty.

Should you experience removal difficulties, please contact us via email.


CHAMCLAD®
TRANSFORMING
SPACES