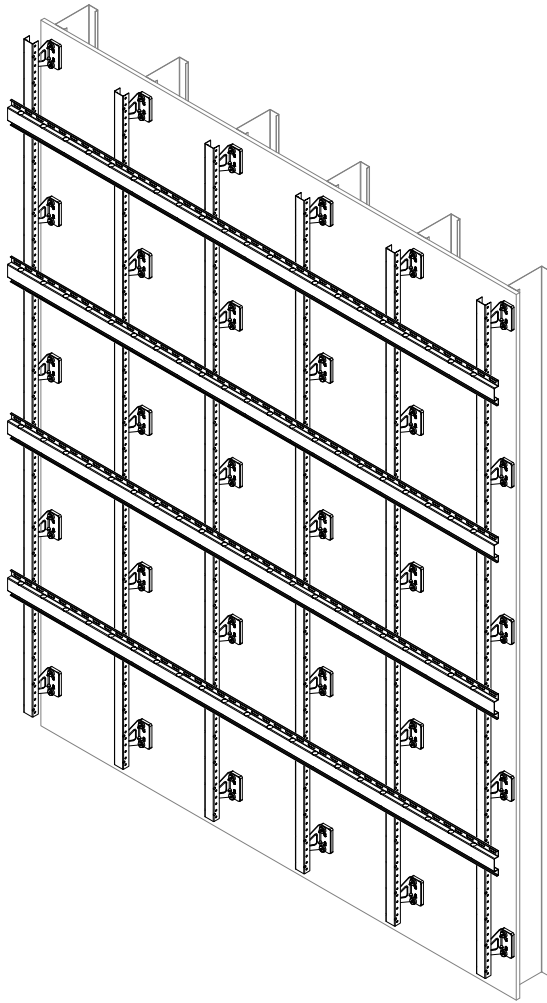
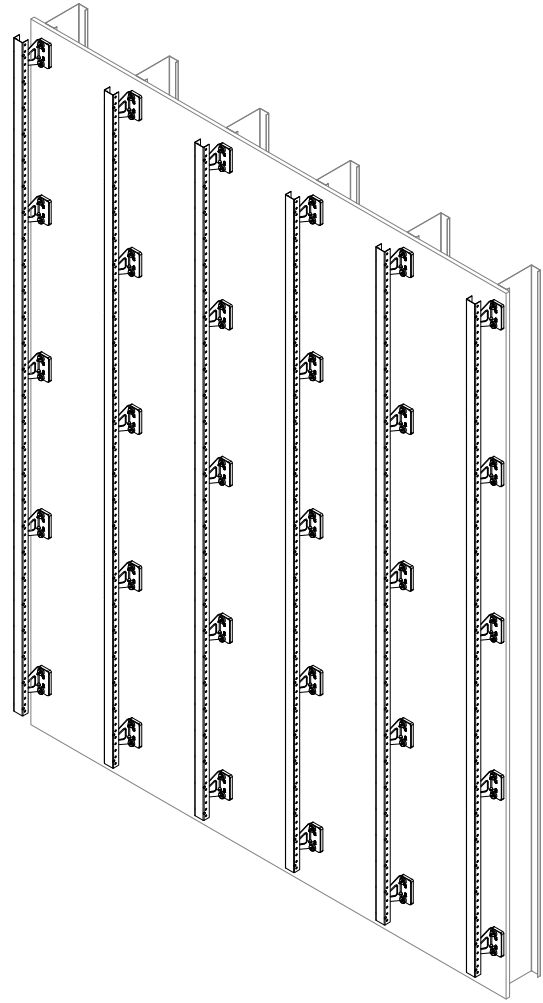




**VERTICAL ORIENTED S-SERIES
WITH OPTIONAL
HORIZONTAL PANELRAIL®**
(EXTERIOR INSULATION OMITTED FOR CLARITY)
MINIMUM DEPTH: 3.5 INCHES
MAXIMUM DEPTH: 8.5 INCHES
(FACE OF SHEATHING TO FACE OF PANELRAIL®)



VERTICAL ORIENTED S-SERIES
(EXTERIOR INSULATION OMITTED FOR CLARITY)
MINIMUM DEPTH: 2.75 INCHES
MAXIMUM DEPTH: 6.75 INCHES
(FACE OF SHEATHING TO FACE OF S-RAIL)

GENERAL NOTES:

- KNIGHT WALL SYSTEMS (KWS) IS NOT RESPONSIBLE FOR INFORMATION SHOWN ON ALL DETAILS BEYOND KWS SPECIFIC SCOPE OF WORK QUOTED.
- SYSTEM MAY BE INSTALLED OVER STEEL STUDS, WOOD STUDS, CMU OR CONCRETE SUBSTRATES (WITH USE OF APPROPRIATE WALL ANCHORS).
- PROJECT SPECIFIC ENGINEERING CAN BE PROVIDED BY KWS AND IS REQUIRED FOR A 10 YEAR LIMITED WRITTEN WARRANTY.
- PLEASE READ OUR INSTALLATION AND DESIGN RECOMMENDATIONS DOCUMENT FOR FURTHER INFORMATION THAT IS IMPORTANT FOR YOUR SPECIFIC PROJECT AND PROPER INSTALLATION.
- DETAILS OF ADJACENT WORK ARE SHOWN FOR COMPLETENESS, CLARITY AND CONVENIENCE AS AN EXAMPLE OF A BUILT ENVIRONMENT ONLY.
- KWS PROJECT SPECIFIC ENGINEERING, WHEN SUPPLIED, INCLUDES ANALYSIS OF THE LOAD CARRYING COMPONENTS, PRODUCTS AND FASTENERS SUPPLIED BY KWS. THE CLADDING, RAILS/BRACKETS/FASTENERS SUPPLIED BY OTHERS, THE BACK-UP WALL AND SUPER STRUCTURE DESIGN ARE WITH OTHER PARTIES. THE RESPONSIBILITY FOR THESE OTHER ASSEMBLIES TO ACCOMMODATE ALL LOADS IMPOSED UPON THEM MUST BE CONSIDERED.
- SOFT JOINTS, SEALANT AND FLASHING SPECIFICATIONS, DESIGN AND INSTALLATION ARE WITH OTHER PARTIES.
- WATER RESISTANT/AIR BARRIER AND INSULATION SPECIFICATIONS, DETAILING AND INSTALLATION, INCLUDING PENETRATIONS, ARE WITH OTHER PARTIES.
- INTERACTION BETWEEN DISSIMILAR MATERIALS MUST BE SEPARATED VIA PLASTIC SHIMS, TAPE OR COATING TO PREVENT GALVANIC REACTION.
- USE SHEARING INSTRUMENTS FOR CUTTING METAL FRAMING COMPONENTS. SAWS ARE NOT RECOMMENDED, AS THE SPARKS PRODUCED DURING CUTTING WILL DAMAGE THE ANTI-CORROSION COATING. IF SPARKS ARE GENERATED DURING CUTTING, BE SURE THE PORTION OF THE COMPONENT TO BE INSTALLED ON THE BUILDING IS PROTECTED FROM SPARKS. THE SYSTEMS COMPONENTS MUST NOT BE CUT WHILE INSTALLED ON THE BUILDING UNLESS USING A SHEARING INSTRUMENT (I.E. SNIPS, etc.).
- USE OF IMPACT DRIVERS IS NOT RECOMMENDED WHEN DRIVING ANY FASTENER FOR THE SYSTEM.
- EXTERIOR INSULATION IS RECOMMENDED TO BE MINERAL FIBER INSULATION (MFI) FOR USE WITH THE MFI SYSTEM. RIGID FOAM INSULATION MAY BE USED, BUT IS NOT RECOMMENDED DUE TO BRACKET BASE DESIGN AND EXCESS LABOR FOR TRIMMING OR CUTTING OF RIGID FOAM. MINERAL FIBER INSULATION DOES NOT TYPICALLY REQUIRE ANY CUTTING AROUND THE BRACKET BASE FOR PROPER INSTALLATION.
- THE DETAILS WITHIN THIS DRAWING PACKAGE ARE NOT INTENDED TO REPLACE PROJECT SPECIFIC ENGINEERING CALCULATIONS OR THE DESIGN SERVICES OF A REGISTERED PROFESSIONAL DESIGNER.

*Maximum allowable spacing and dead load (weight of cladding) is based on the total load (dead+live) acting on the assembly, brackets & connections.

THESE GUIDE DETAILS ARE PROVIDED FOR INFORMATION ONLY AND OUTLINE GENERAL/TYPICAL REQUIREMENTS FOR THE SUPPORT SYSTEM. PROJECT SPECIFIC ENGINEERING WILL ADDRESS STRUCTURAL ATTACHMENT. NO EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR ANY APPLICABLE WRITTEN WARRANTIES SPECIFICALLY PROVIDED BY KNIGHT WALL SYSTEMS®. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED. No freedom from any patent owned by KNIGHT WALL SYSTEMS® or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use. They are not guaranteed in any way by the Knight Wall Systems, Inc. since building design, engineering, and construction, including workmanship and materials are beyond the control of the manufacturer. The information provided here is subject to change without notice.

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TABLE OF CONTENTS:

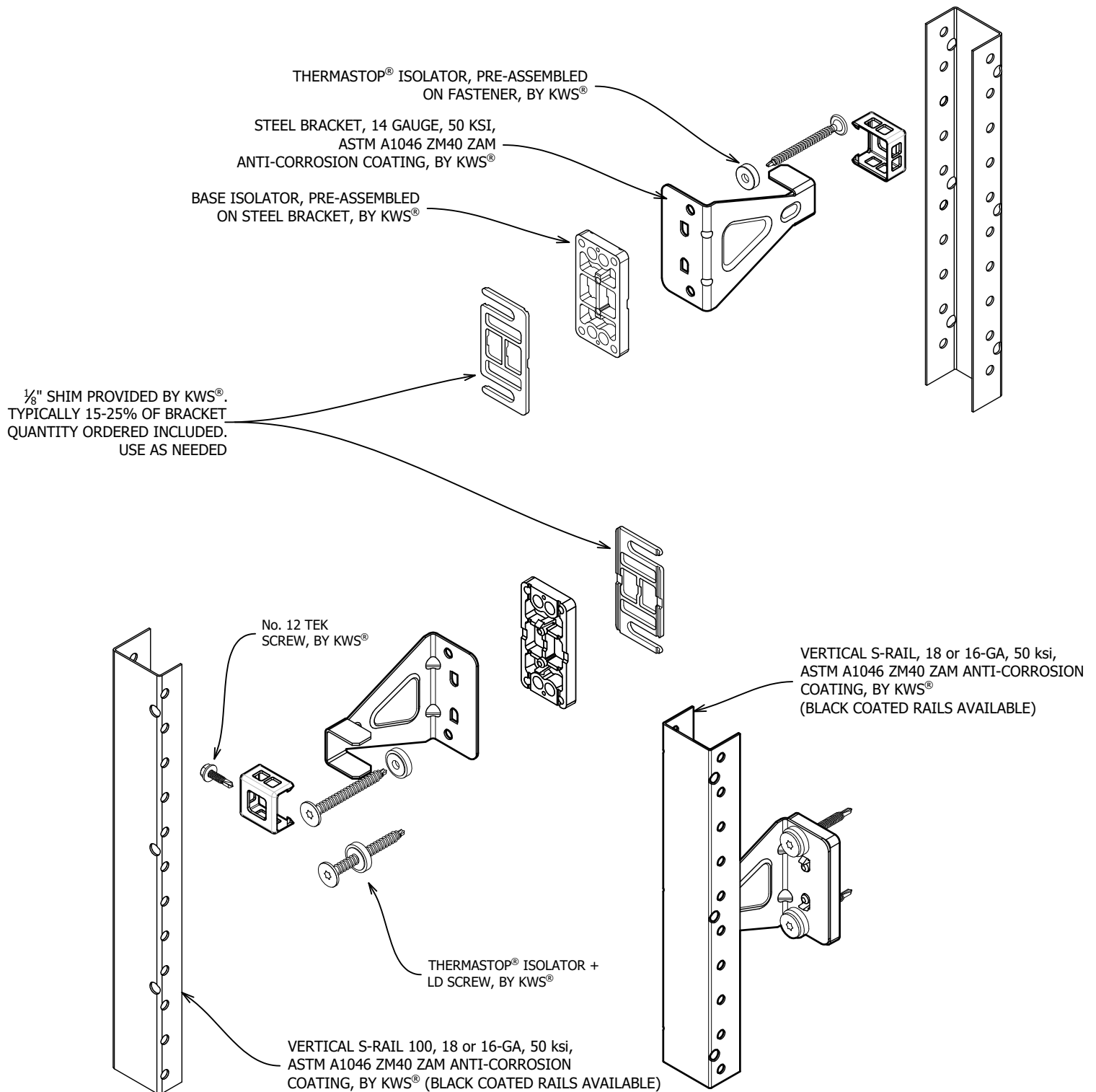
1. TITLE PAGE
2. GENERAL NOTES
3. TABLE OF CONTENTS
4. ISOMETRIC VIEW OF THERMABRACKET[®] S-SERIES ASSEMBLY
5. 2"-3.5" THERMABRACKET[®] S-SERIES ISO, SIDE AND TOP VIEWS, OVERALL DIMENSIONS
6. 4"-6" THERMABRACKET[®] S-SERIES ISO, SIDE AND TOP VIEWS, OVERALL DIMENSIONS
7. PANELRAIL[®] SERIES
8. TYPICAL SECTION VIEW - VERTICAL S-RAIL ONLY
9. TYPICAL PLAN VIEW - VERTICAL S-RAIL ONLY
10. TYPICAL OUTSIDE CORNER - VERTICAL S-RAIL ONLY
11. TYPICAL INSIDE CORNER - VERTICAL S-RAIL ONLY
12. TYPICAL JAMB CONDITION - VERTICAL S-RAIL ONLY
13. TYPICAL HEAD/SILL CONDITION - VERTICAL S-RAIL ONLY
14. TYPICAL BASE OF WALL - VERTICAL S-RAIL ONLY
15. TYPICAL DEFLECTION FLOOR JOINT - VERTICAL S-RAIL ONLY
16. TYPICAL SECTION VIEW - VERTICAL S-RAIL + HORIZONTAL PANELRAIL[®]
17. TYPICAL PLAN VIEW - VERTICAL S-RAIL + HORIZONTAL PANELRAIL[®]
18. TYPICAL OUTSIDE CORNER - VERTICAL S-RAIL + HORIZONTAL PANELRAIL[®]
19. TYPICAL INSIDE CORNER - VERTICAL S-RAIL + HORIZONTAL PANELRAIL[®]
20. TYPICAL JAMB CONDITION - VERTICAL S-RAIL + HORIZONTAL PANELRAIL[®]
21. TYPICAL HEAD/SILL CONDITION - VERTICAL S-RAIL + HORIZONTAL PANELRAIL[®]
22. TYPICAL BASE OF WALL - VERTICAL S-RAIL + HORIZONTAL PANELRAIL[®]
23. TYPICAL DEFLECTION FLOOR JOINT - VERTICAL S-RAIL + HORIZONTAL PANELRAIL[®]

PLEASE FEEL FREE TO CONTACT KWS OR A LOCAL KWS REPRESENTATIVE FOR PROJECT SPECIFIC ASSISTANCE WITH DETAILS AND SPECIFYING.

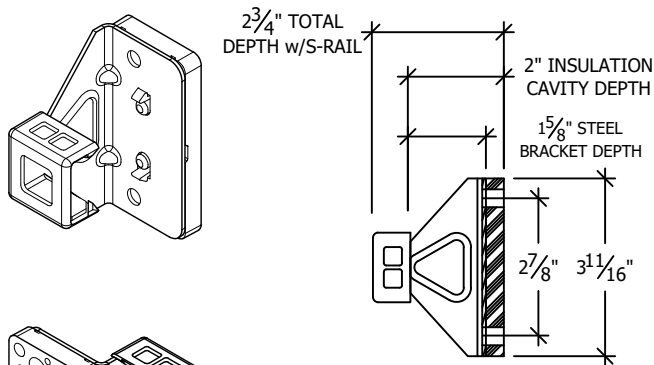
1.855.KWS.WALL

info@knightwallsystems.com

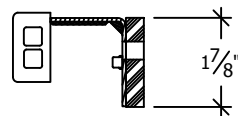
www.knightwallsystems.com



MFI® SYSTEM S-SERIES ASSEMBLY - ISO VIEW
SCALE: NTS



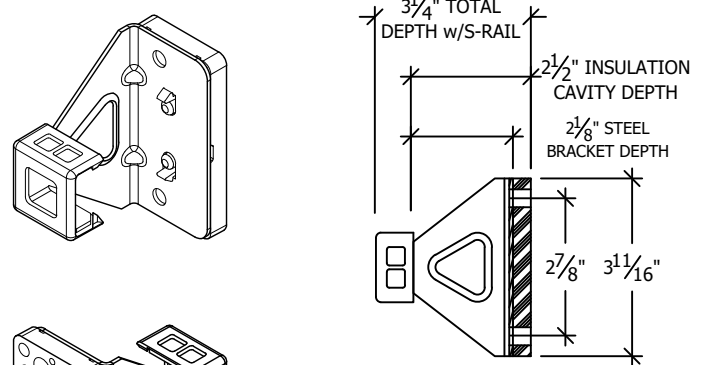
SIDE/SECTION VIEW



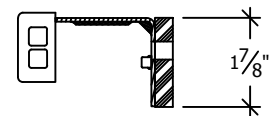
TOP/PLAN VIEW

2" THERMABRACKET® S-SERIES

OVERALL DEPTH
 w/S-RAIL ONLY: 2.75"
 w/S-RAIL + PANELRAIL®: 3.5"-4.5"



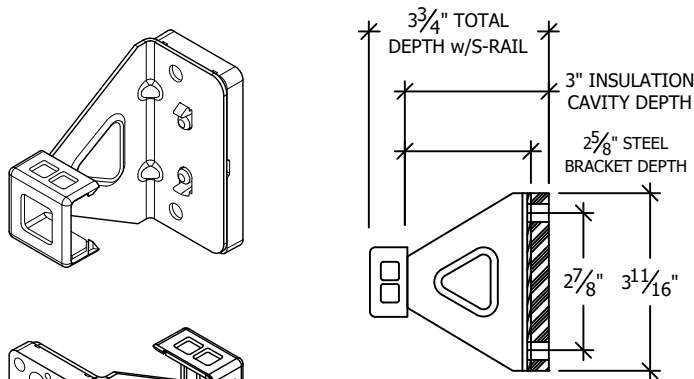
SIDE/SECTION VIEW



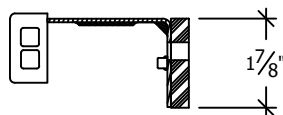
TOP/PLAN VIEW

2.5" THERMABRACKET® S-SERIES

OVERALL DEPTH
 w/S-RAIL ONLY: 3.25"
 w/S-RAIL + PANELRAIL®: 4"-5"



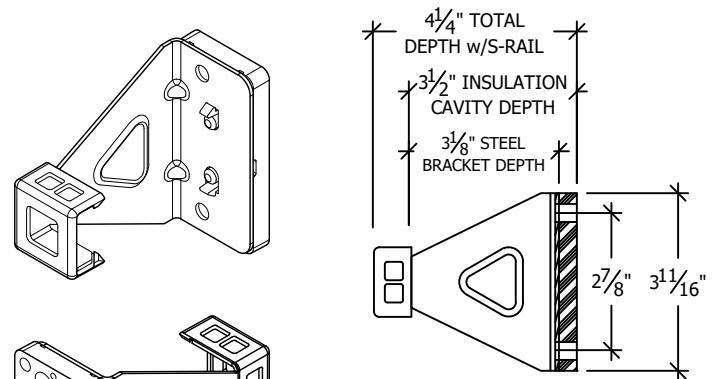
SIDE/SECTION VIEW



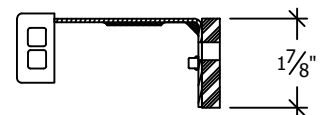
TOP/PLAN VIEW

3" THERMABRACKET® S-SERIES

OVERALL DEPTH
 w/S-RAIL ONLY: 3.75"
 w/S-RAIL + PANELRAIL®: 4.5"-5.5"



SIDE/SECTION VIEW



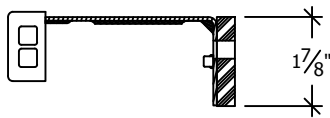
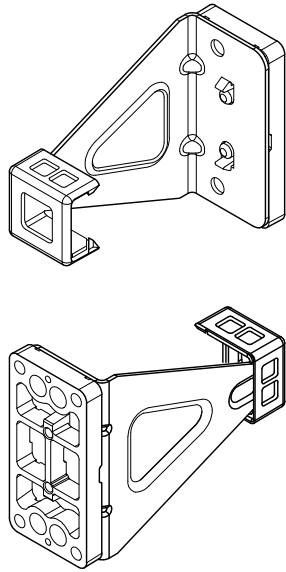
TOP/PLAN VIEW

3.5" THERMABRACKET® S-SERIES

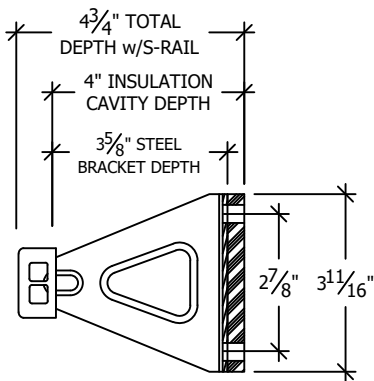
OVERALL DEPTH
 w/S-RAIL ONLY: 4.25"
 w/S-RAIL + PANELRAIL®: 5"-6"

THERMABRACKET® S-SERIES SIZES - 2"-3.5"

SCALE: 3" = 1'-0"



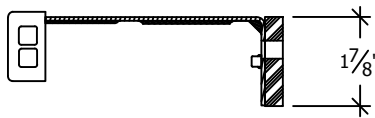
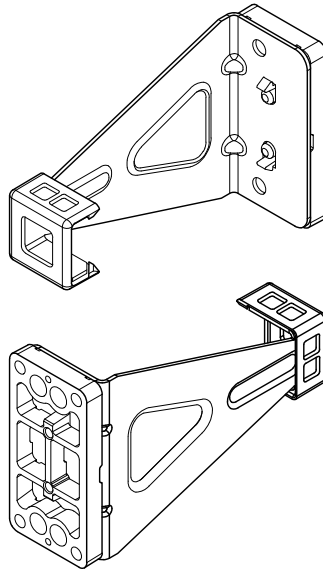
TOP/PLAN VIEW



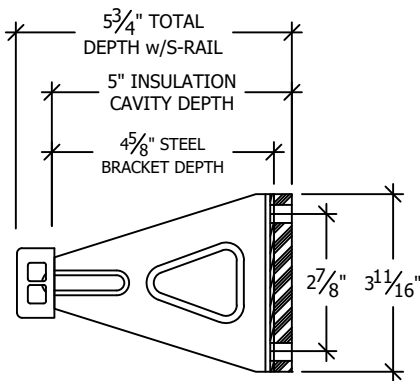
SIDE/SECTION VIEW

4" THERMABRACKET® S-SERIES

OVERALL DEPTH
 w/S-RAIL ONLY: 4.75"
 w/S-RAIL + PANELRAIL®: 5.5"-6.5"



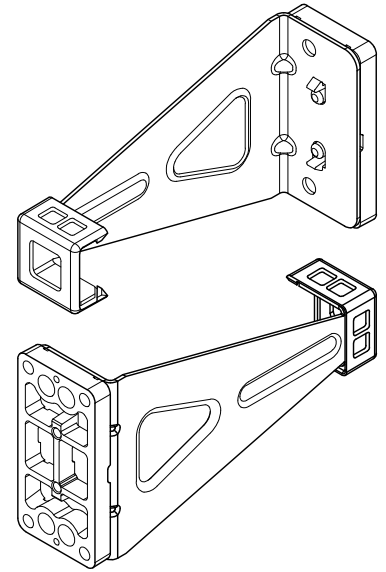
TOP/PLAN VIEW



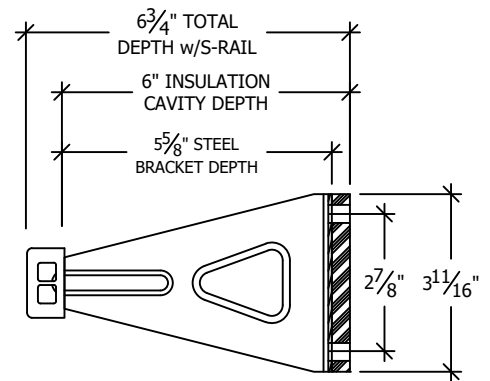
SIDE/SECTION VIEW

5" THERMABRACKET® S-SERIES

OVERALL DEPTH
 w/S-RAIL ONLY: 5.75"
 w/S-RAIL + PANELRAIL®: 6.5"-7.5"



TOP/PLAN VIEW



SIDE/SECTION VIEW

6" THERMABRACKET® S-SERIES

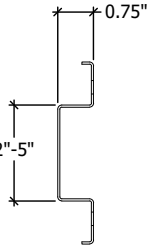
OVERALL DEPTH
 w/S-RAIL ONLY: 6.75"
 w/S-RAIL + PANELRAIL®: 7.5"-8.5"

THERMABRACKET® S-SERIES SIZES - 4"-6"

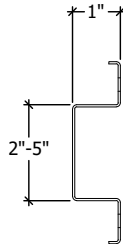
SCALE: 3" = 1'-0"

*ALL PANELRAIL® ARE AVAILABLE IN 18- OR 16-GA;
STANDARD SILVER MILL FINISH OR PAINTED BLACK

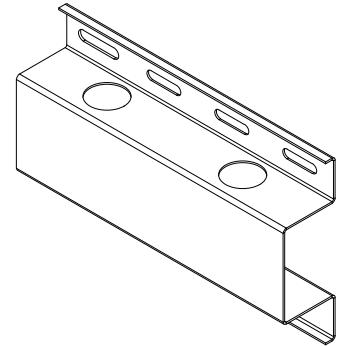
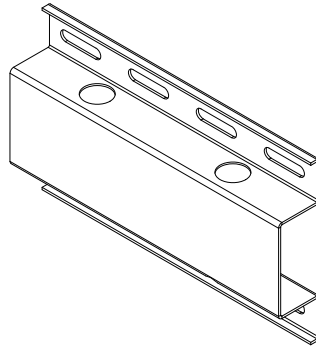
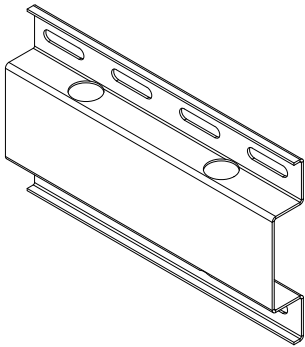
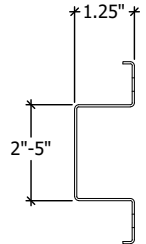
PANELRAIL®
SERIES 075



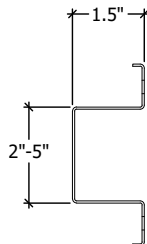
PANELRAIL®
SERIES 100



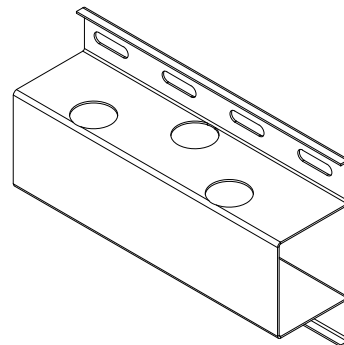
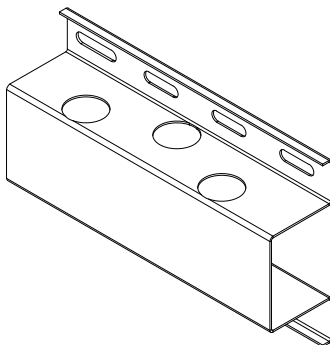
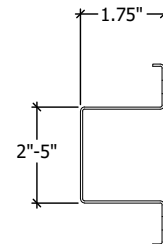
PANELRAIL®
SERIES 125



PANELRAIL®
SERIES 150

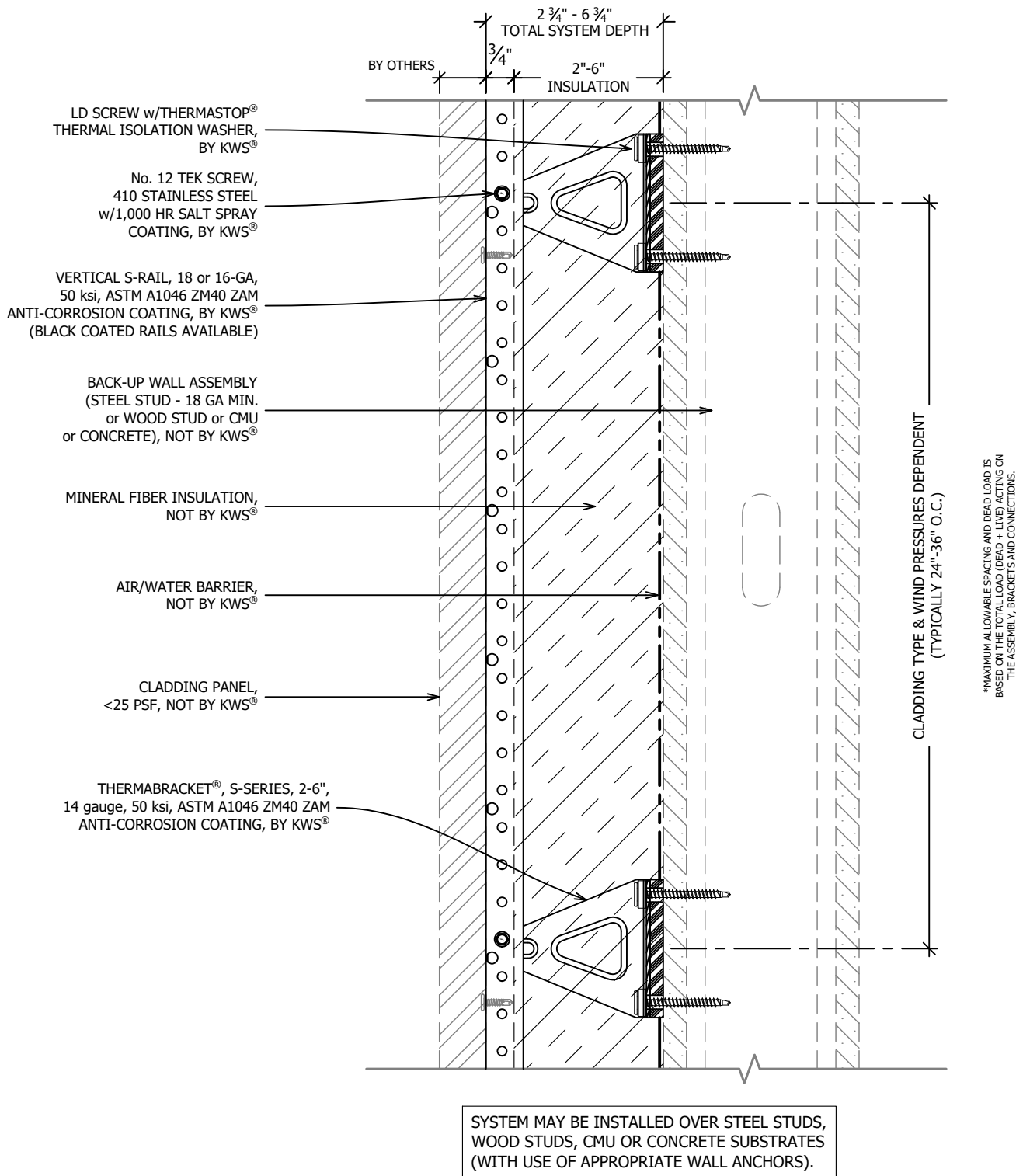


PANELRAIL®
SERIES 175



PANELRAIL® SERIES

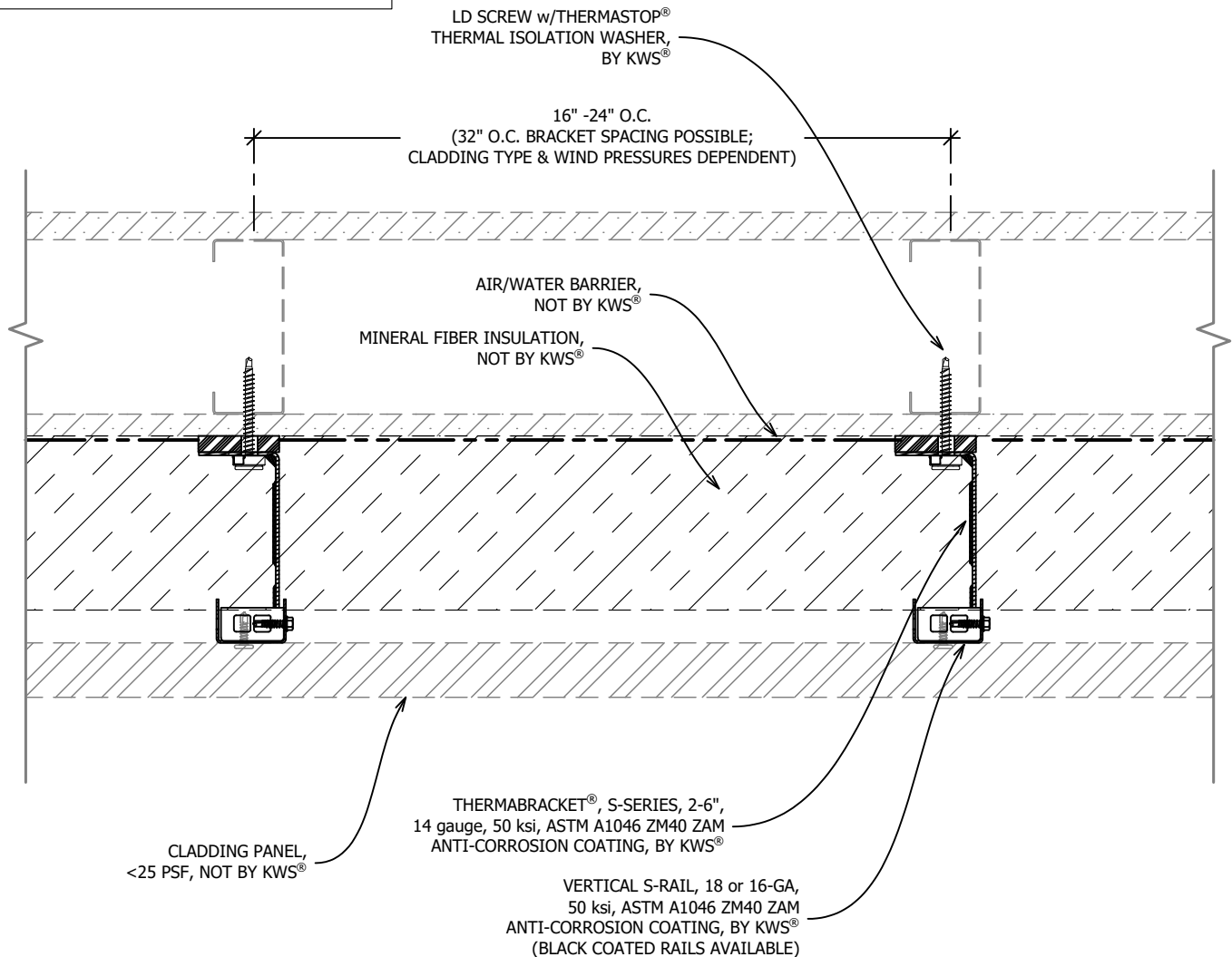
SCALE: 3" = 1'-0"



TYPICAL SECTION VIEW - S-RAIL ONLY

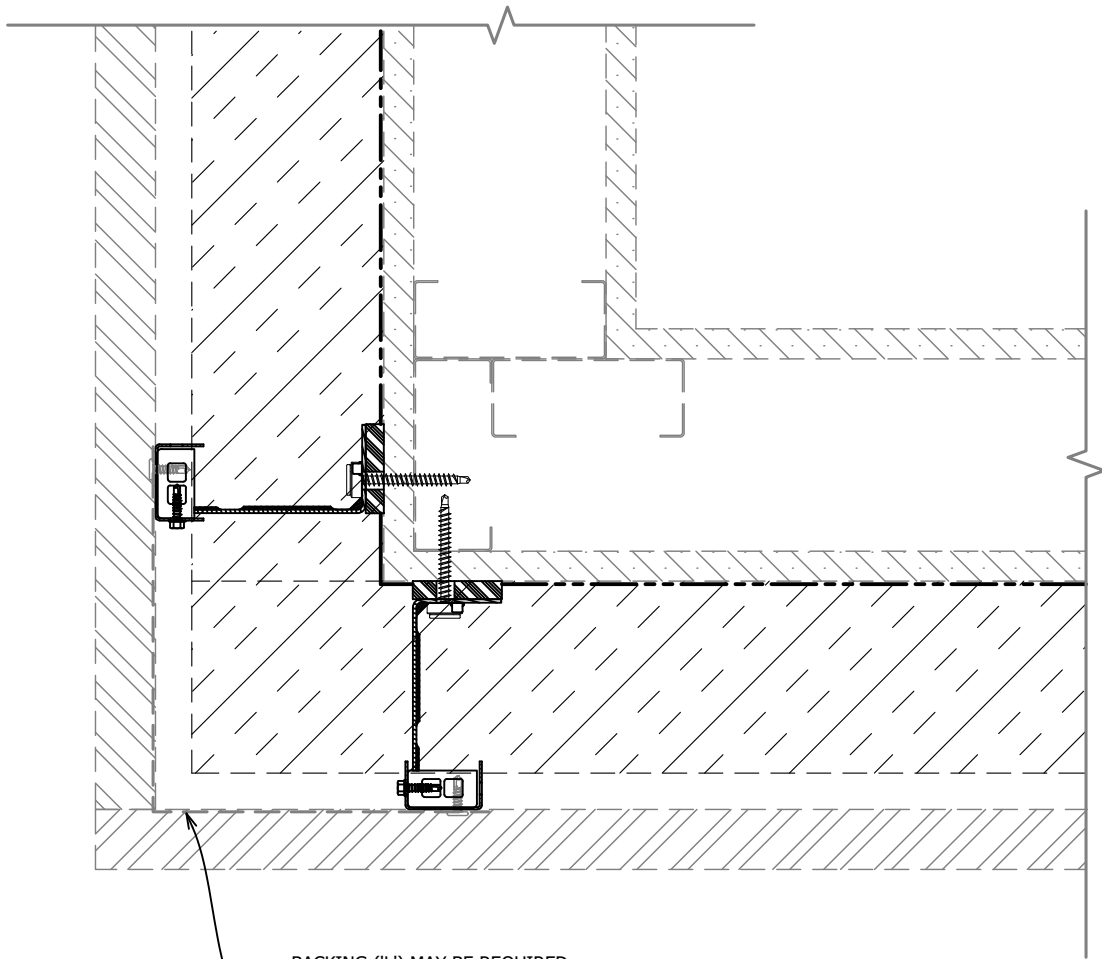
SCALE: 3" = 1'-0"

SYSTEM MAY BE INSTALLED OVER STEEL STUDS, WOOD STUDS, CMU OR CONCRETE SUBSTRATES (WITH USE OF APPROPRIATE WALL ANCHORS).



TYPICAL PLAN VIEW - S-RAIL ONLY

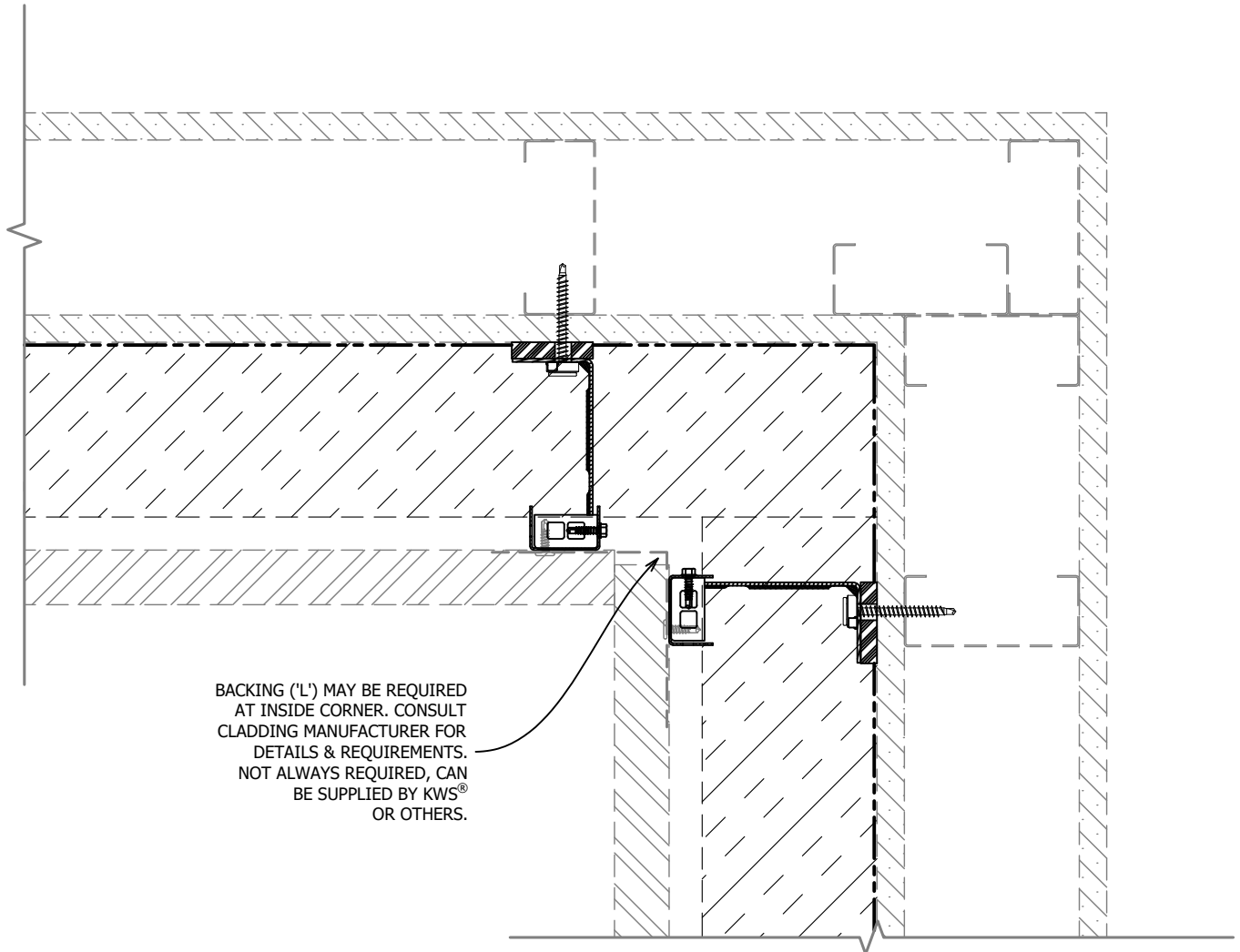
SCALE: 3" = 1'-0"



BACKING ('L') MAY BE REQUIRED
 AT OUTSIDE CORNER. CONSULT
 CLADDING MANUFACTURER FOR
 DETAILS & REQUIREMENTS.
 NOT ALWAYS REQUIRED, CAN
 BE SUPPLIED BY KWS®
 OR OTHERS.

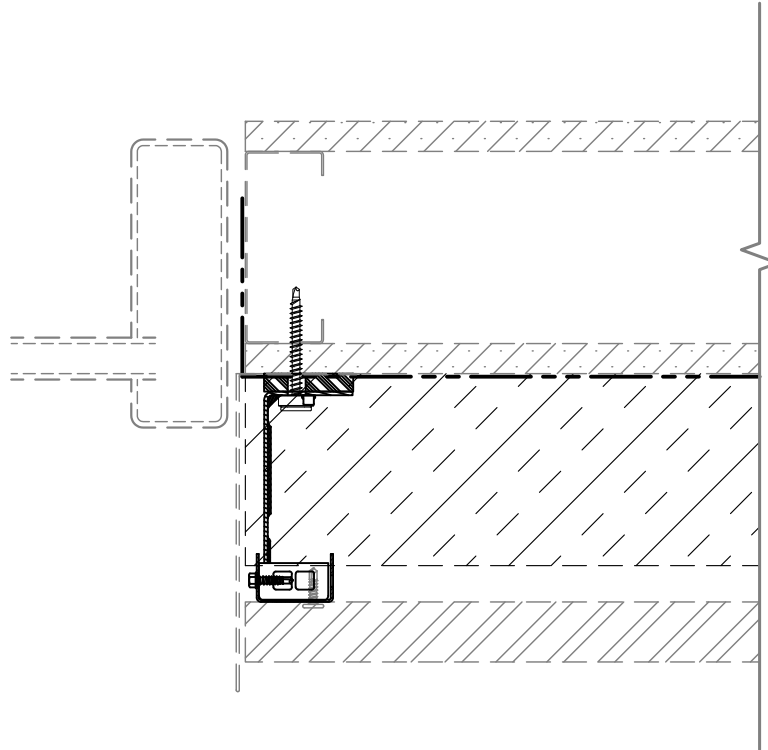
TYPICAL OUTSIDE CORNER CONDITION

SCALE: 3" = 1'-0"



TYPICAL INSIDE CORNER CONDITION

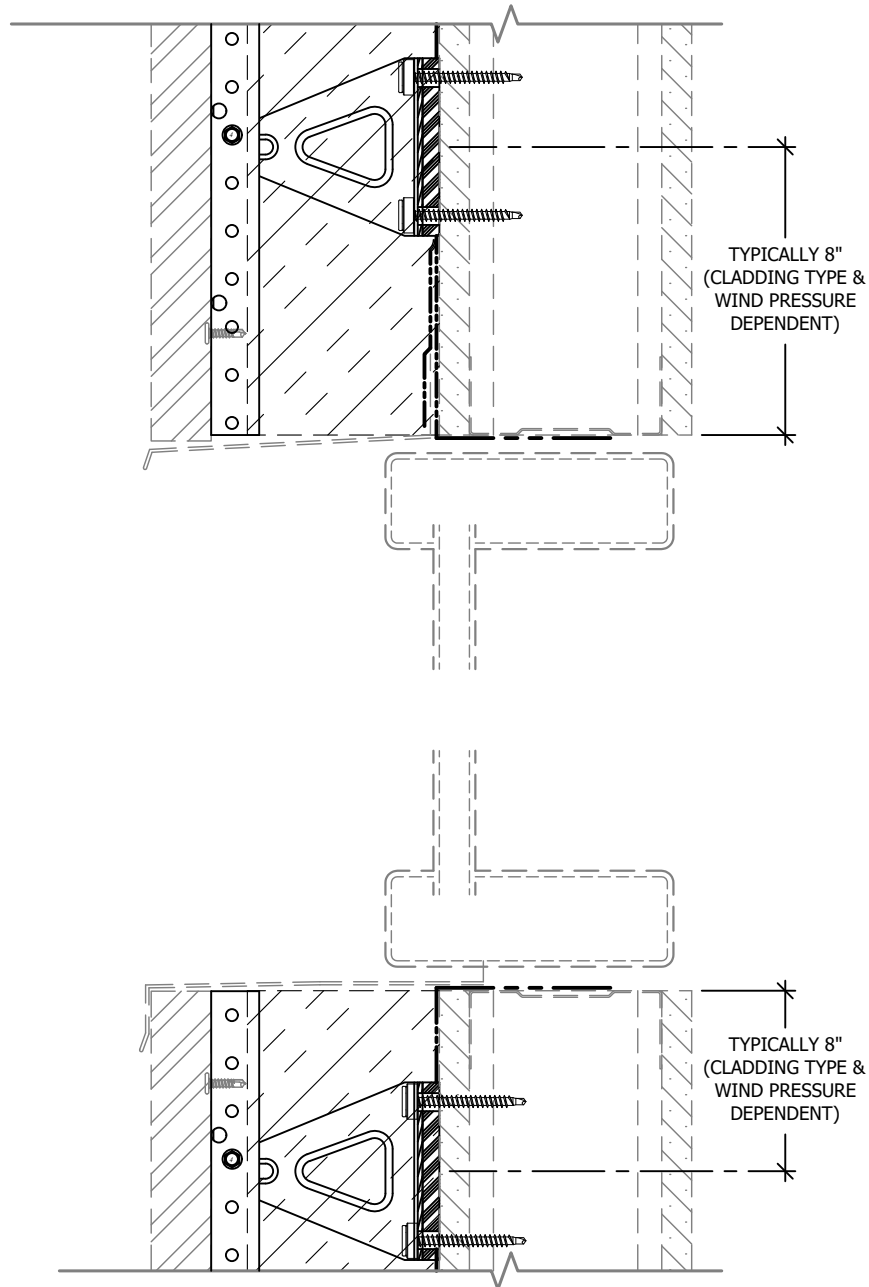
SCALE: 3" = 1'-0"



* FLASHING DETAILS VARY BASED ON WINDOW TYPE,
 POSITION (INSET VS FLUSH) AND CLADDING TYPE.
 FLASHING IS NOT BY KWS®.

TYPICAL JAMB CONDITION

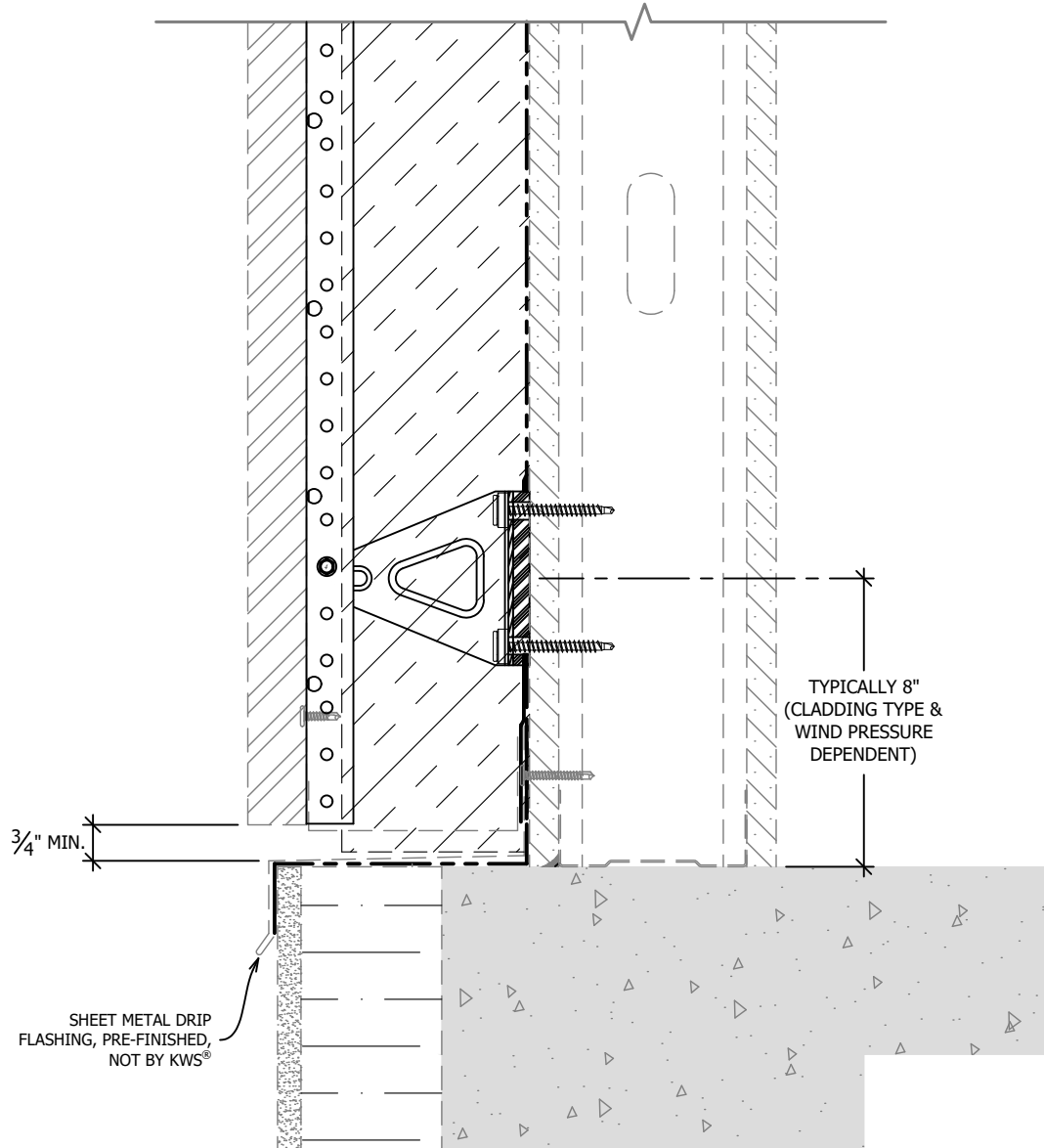
SCALE: 3" = 1'-0"



* FLASHING DETAILS VARY BASED ON WINDOW TYPE, POSITION (INSET VS FLUSH) AND CLADDING TYPE. FLASHING IS NOT BY KWS®.

TYPICAL HEAD & SILL CONDITION

SCALE: 3" = 1'-0"



* CLEAR & UNRESTRICTED VENTILATION & DRAINAGE REQUIRED AT BASE OF WALL

TYPICAL BASE OF WALL CONDITION

SCALE: 3" = 1'-0"

NOTE:
MAXIMUM S-RAIL CANTILEVER
BEYOND A THERMABRACKET®
(WITHOUT THE USE OF A SPLICE
CLIP) VARIES PER PROJECT.
TYPICALLY IT WILL RANGE FROM
6"-14".

VERTICAL S-RAIL, 18 or 16-GA,
50 ksi, ASTM A1046 ZM40 ZAM
ANTI-CORROSION COATING, BY KWS®
(BLACK COATED RAILS AVAILABLE)

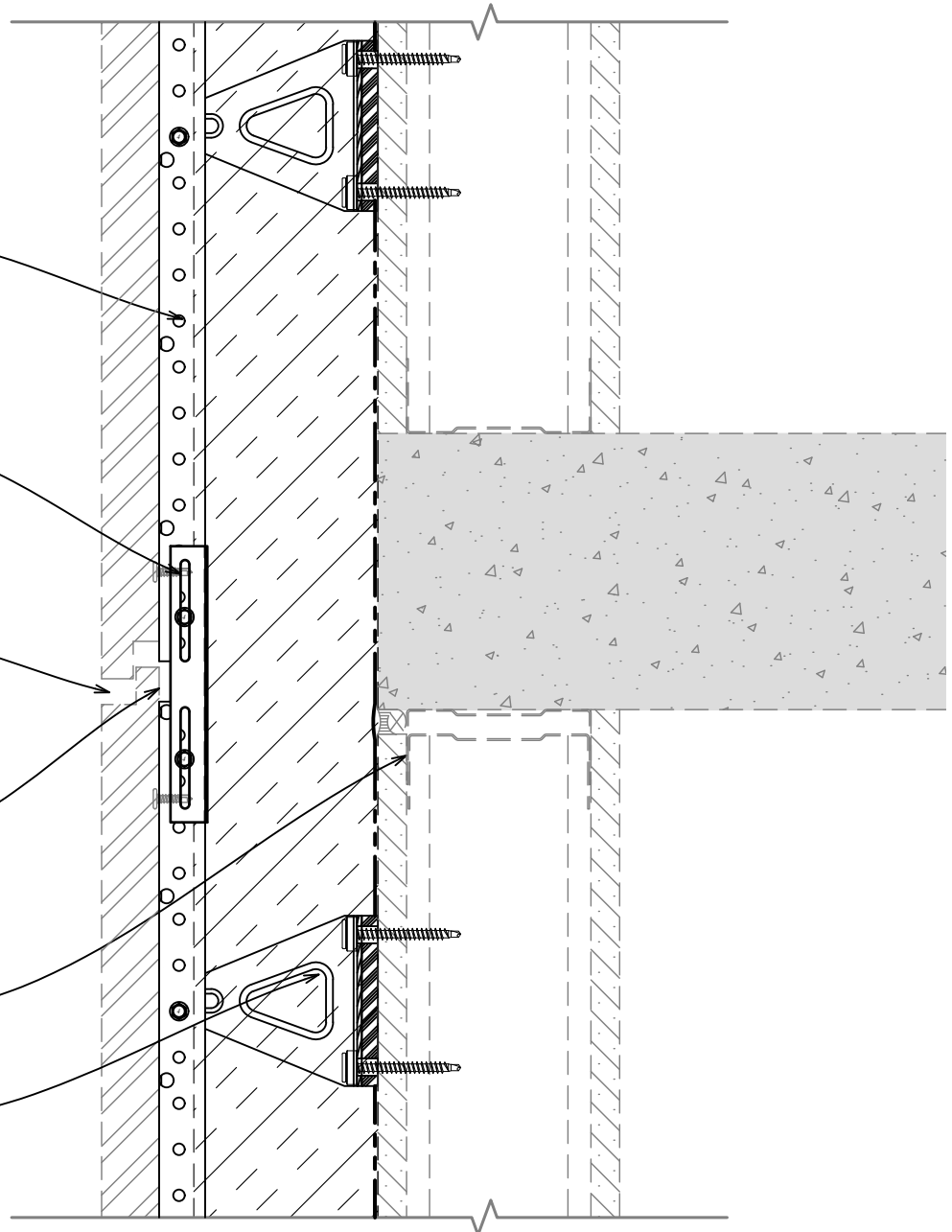
SPLICE CLIP, AS REQUIRED
PER PROJECT, CONNECTED
TO S-RAIL VIA TWO No. 12 TEK
SCREWS. DO NOT OVER TIGHTEN TEK
SCREWS. CLIP MUST BE ALLOWED
TO SLIDE UNDER AXIAL PRESSURE.

A BREAK/MOVEMENT JOINT IN
CLADDING MUST COINCIDE WITH
BREAK IN ATTACHMENT SYSTEM
AND FLOOR DEFLECTION JOINTS
TO PREVENT DAMAGE AND STRESS
ON WALL SYSTEM, CONSULT CLADDING
MANUFACTURER FOR DETAILS,
NOT BY KWS®

GAP BETWEEN RAILS TYPICALLY
EQUALS 1.5x THE EXPECTED
FLOOR MOVEMENT, MINIMUM
OF $\frac{3}{8}$ " AND MAXIMUM OF 1.5"

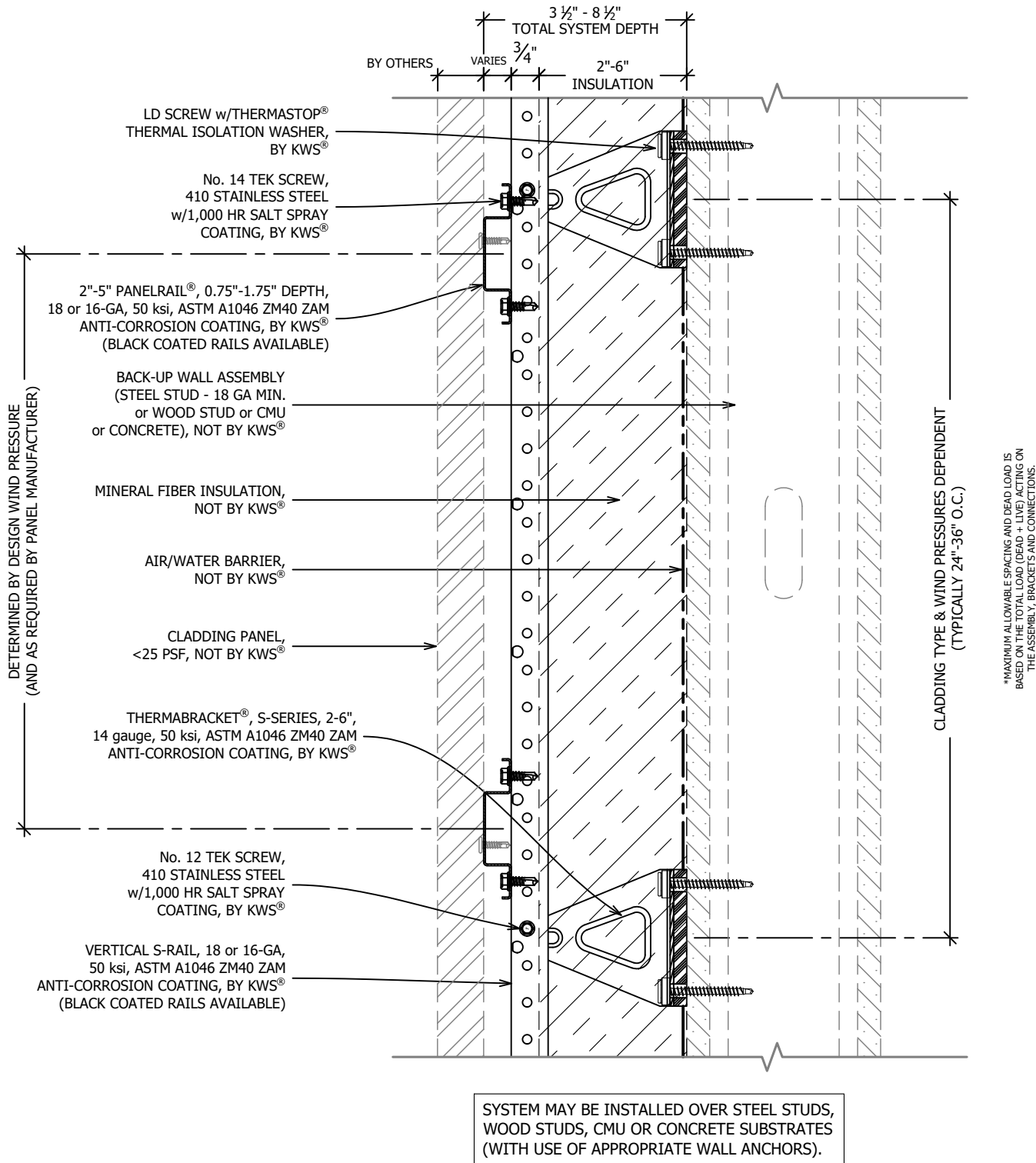
FLOOR DEFLECTION TRACK,
BY OTHERS

BRACKET MUST NOT INFRINGE ON
STEEL STUD FLOOR DEFLECTION
TRACK MOVEMENT



TYPICAL FLOOR DEFLECTION JOINT

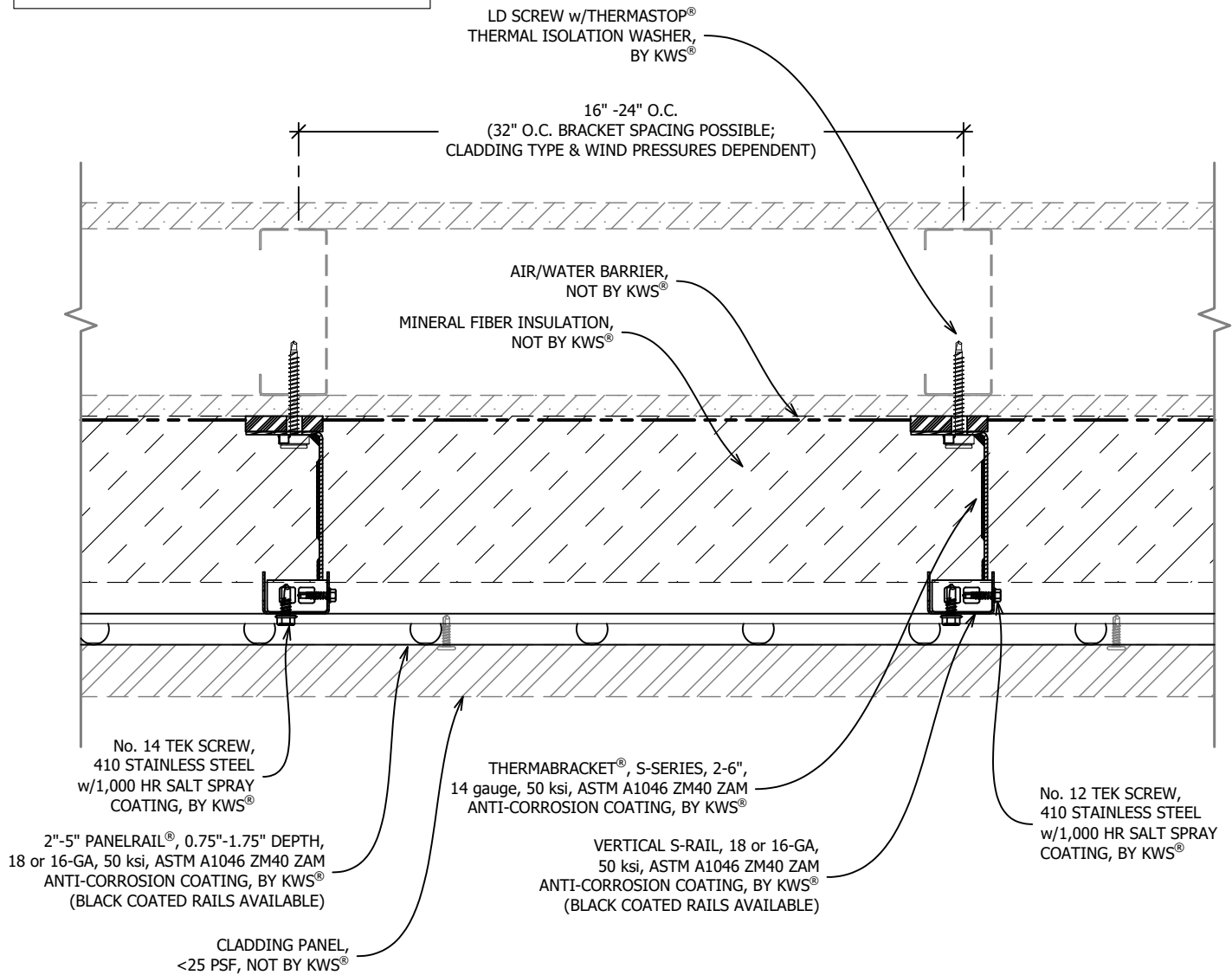
SCALE: 3" = 1'-0"



TYPICAL SECTION VIEW - S-RAIL + PANELRAIL®

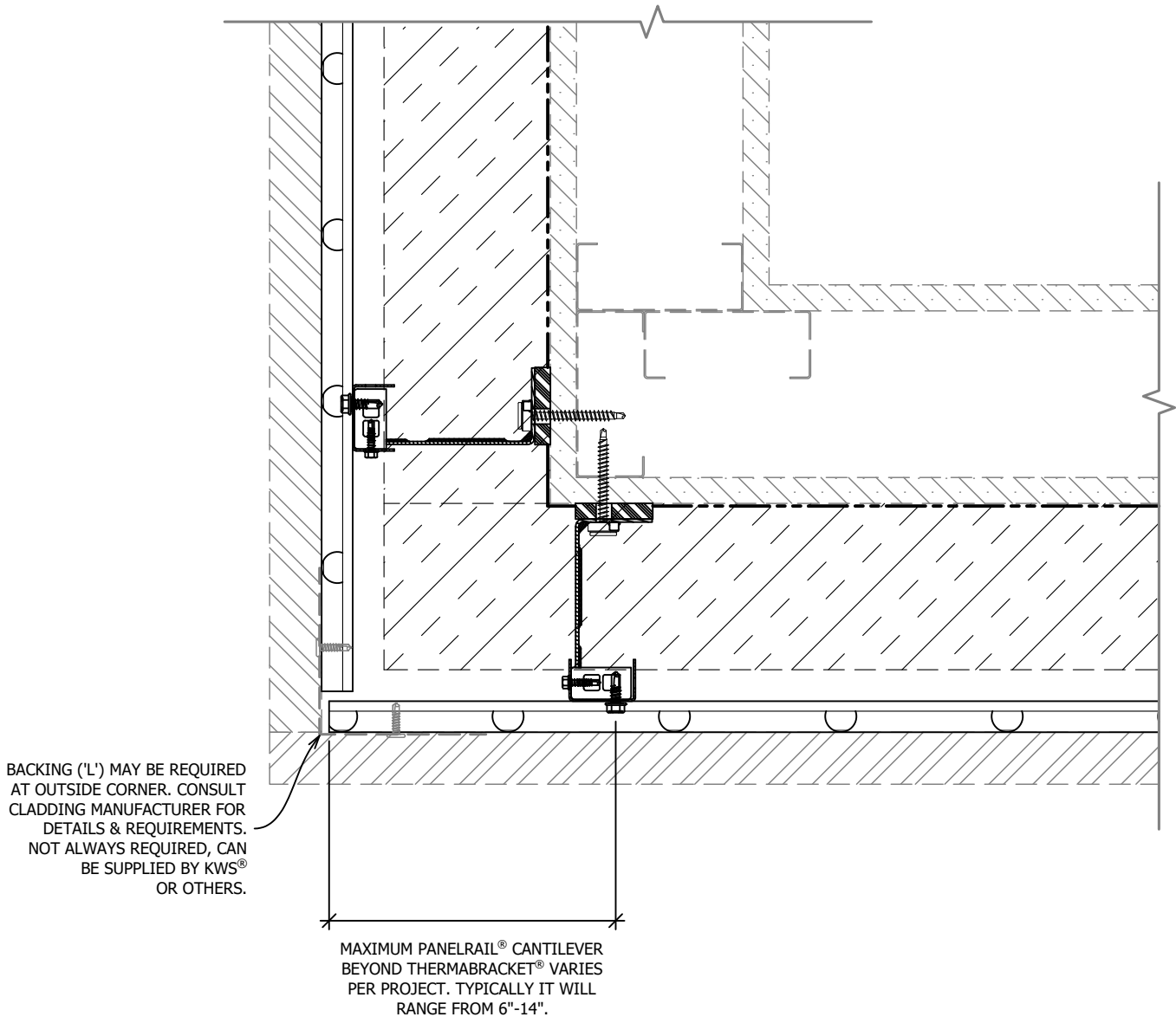
SCALE: 3" = 1'-0"

SYSTEM MAY BE INSTALLED OVER STEEL STUDS, WOOD STUDS, CMU OR CONCRETE SUBSTRATES (WITH USE OF APPROPRIATE WALL ANCHORS).



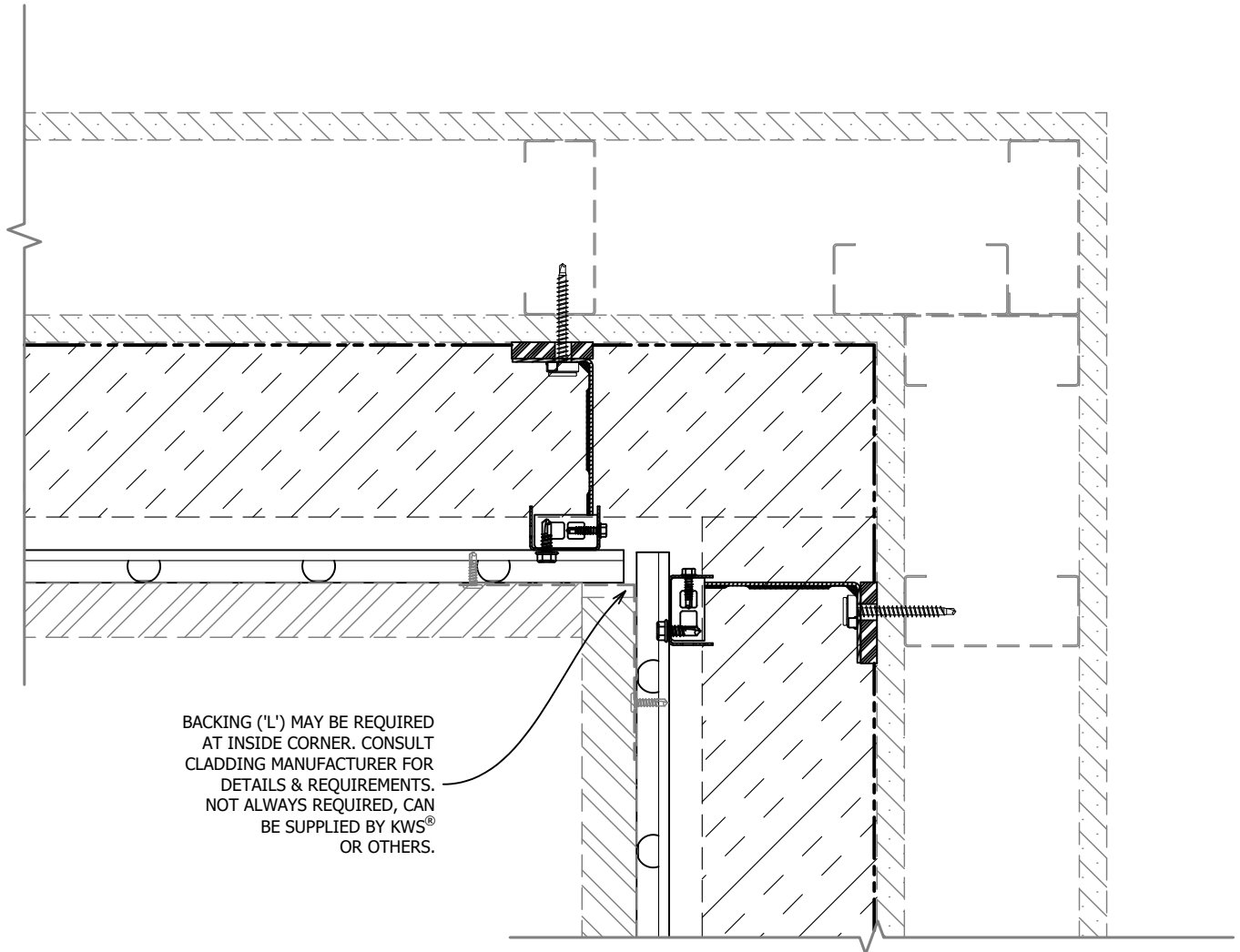
TYPICAL PLAN VIEW - S-RAIL + PANELRAIL®

SCALE: 3" = 1'-0"



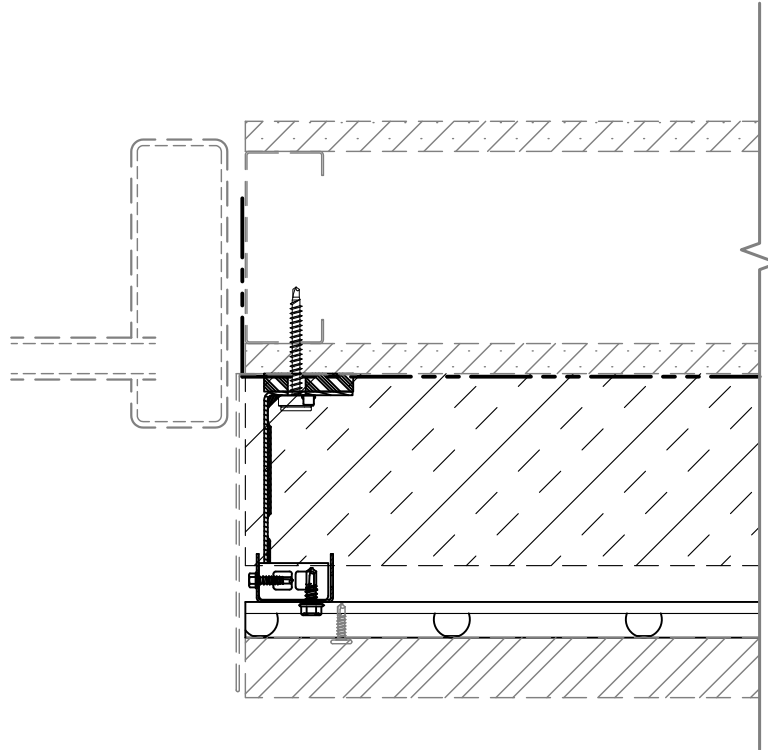
TYPICAL OUTSIDE CORNER CONDITION

SCALE: 3" = 1'-0"



TYPICAL INSIDE CORNER CONDITION

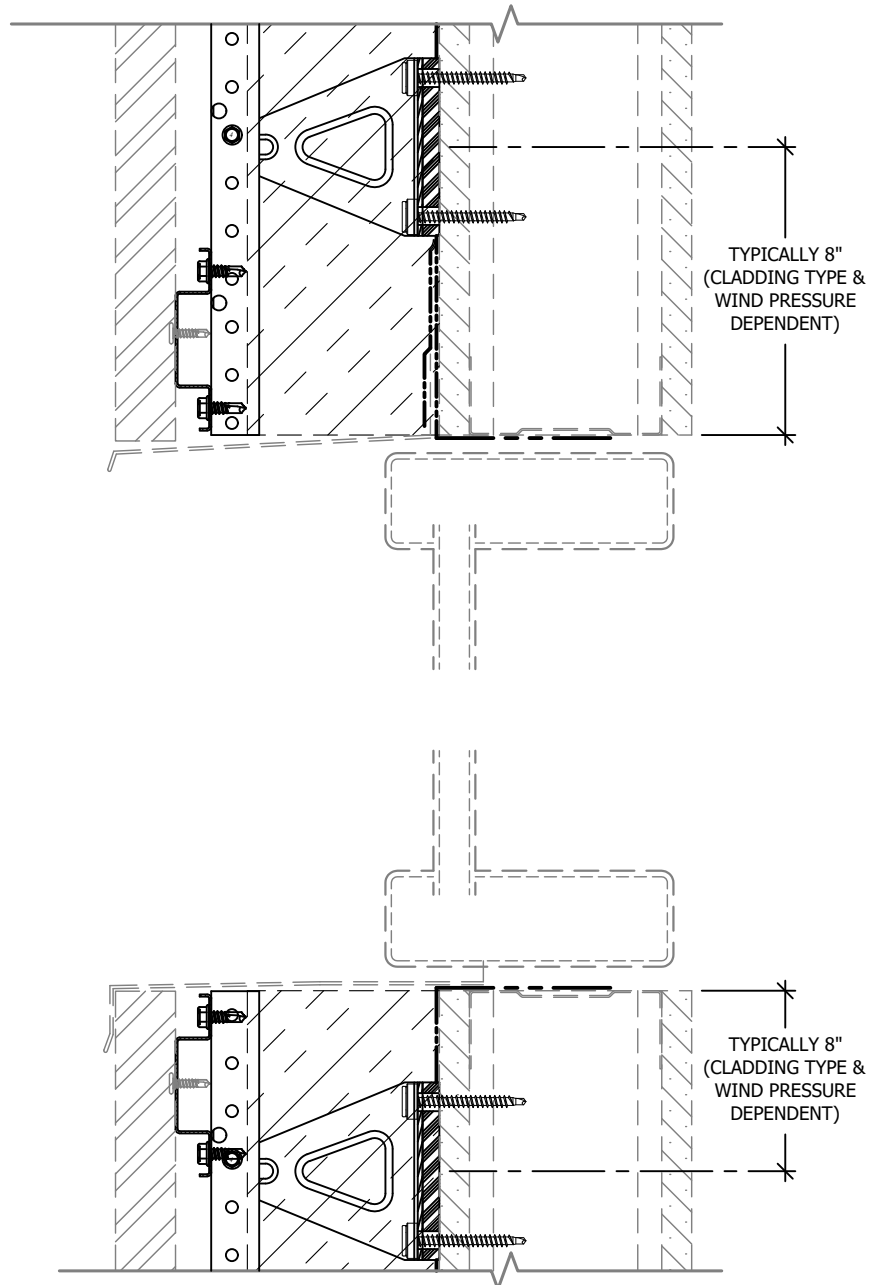
SCALE: 3" = 1'-0"



* FLASHING DETAILS VARY BASED ON WINDOW TYPE,
 POSITION (INSET VS FLUSH) AND CLADDING TYPE.
 FLASHING IS NOT BY KWS®.

TYPICAL JAMB CONDITION

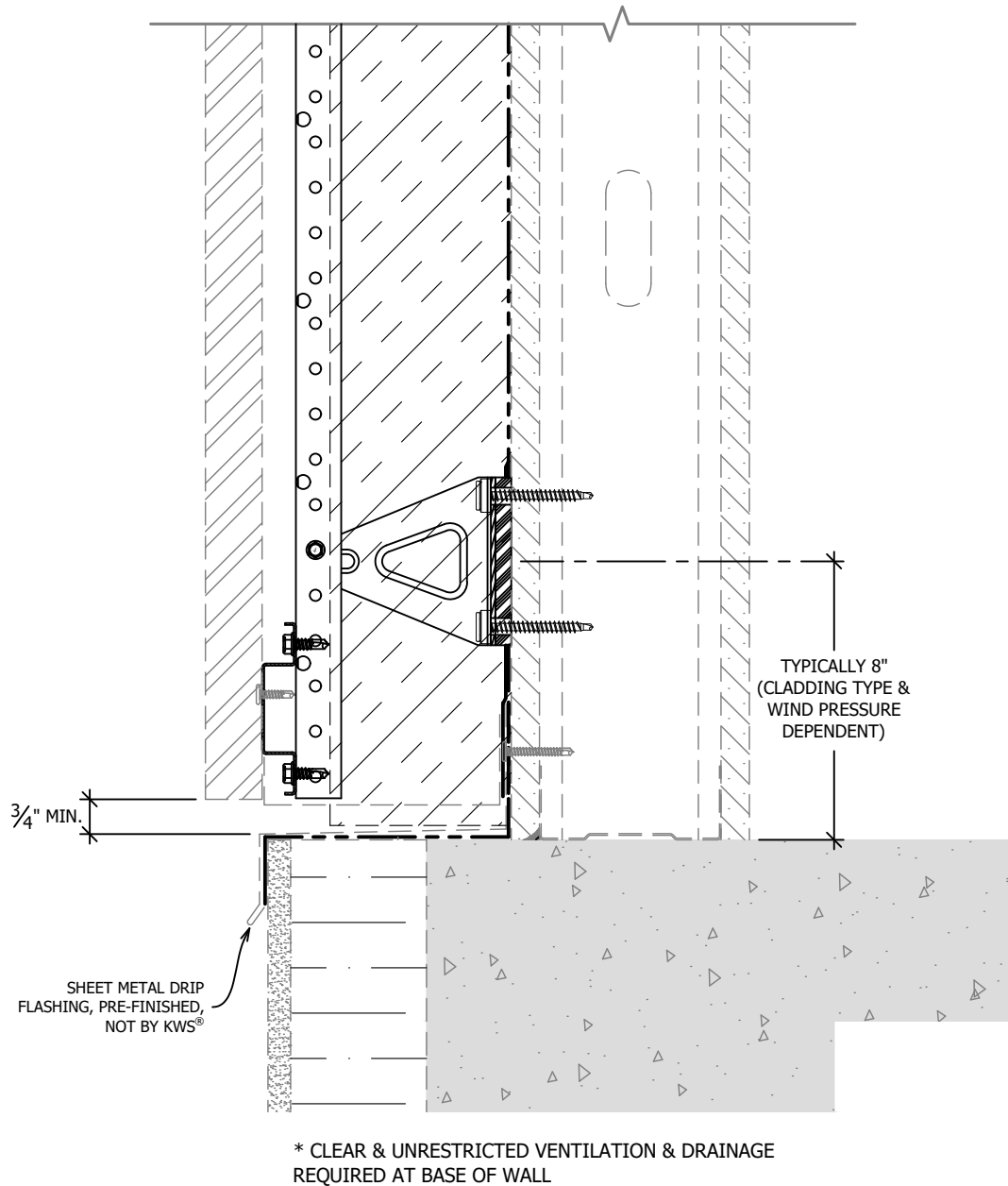
SCALE: 3" = 1'-0"



* FLASHING DETAILS VARY BASED ON WINDOW TYPE,
POSITION (INSET VS FLUSH) AND CLADDING TYPE.
FLASHING IS NOT BY KWS®.

TYPICAL HEAD & SILL CONDITION

SCALE: 3" = 1'-0"



TYPICAL BASE OF WALL CONDITION

SCALE: 3" = 1'-0"

NOTE:
 MAXIMUM S-RAIL CANTILEVER
 BEYOND A THERMABRACKET®
 (WITHOUT THE USE OF A SPLICE
 CLIP) VARIES PER PROJECT.
 TYPICALLY IT WILL RANGE FROM
 6"-14".

VERTICAL S-RAIL, 18 or 16-GA,
 50 ksi, ASTM A1046 ZM40 ZAM
 ANTI-CORROSION COATING, BY KWS®
 (BLACK COATED RAILS AVAILABLE)

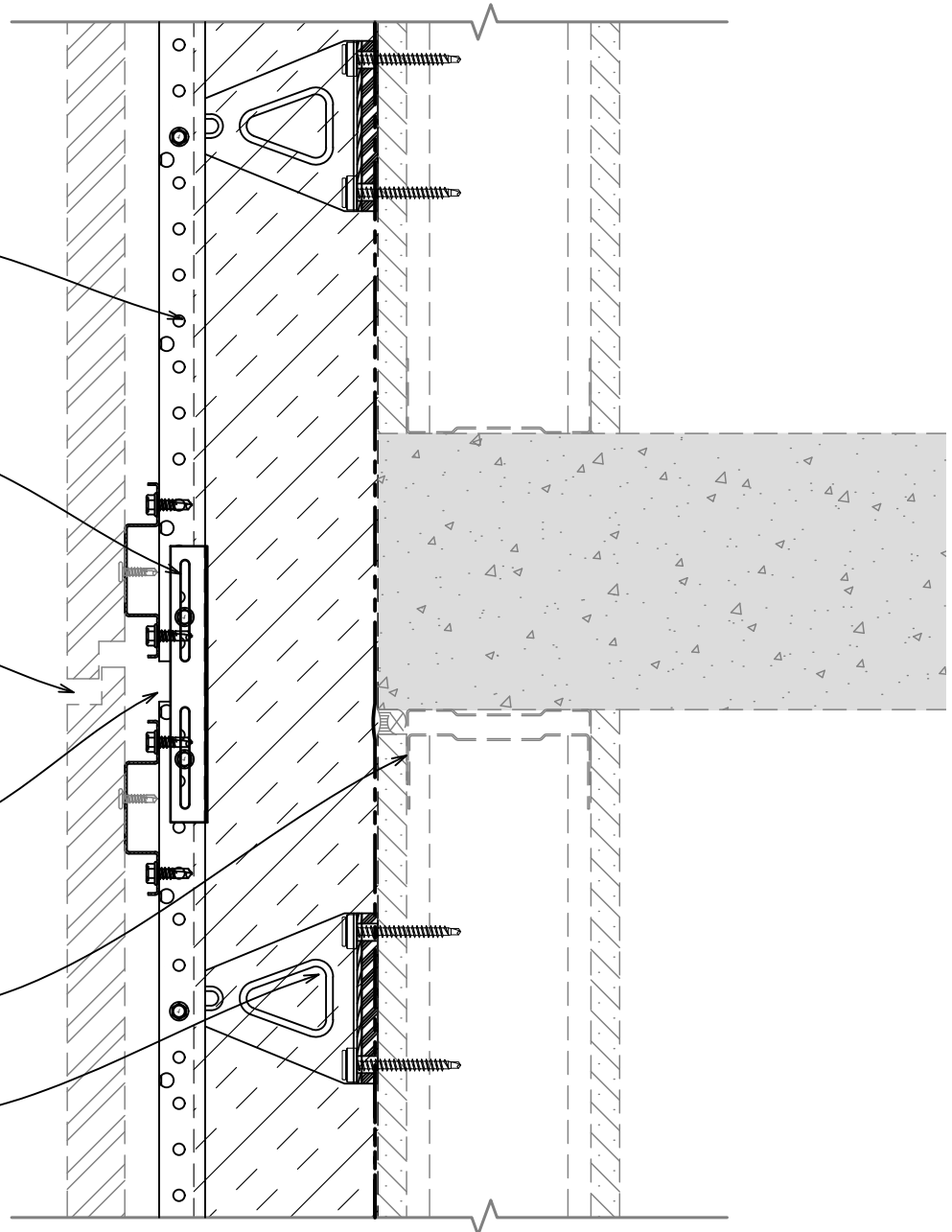
SPLICE CLIP, AS REQUIRED
 PER PROJECT, CONNECTED
 TO S-RAIL VIA TWO No. 12 TEK
 SCREWS. DO NOT OVER TIGHTEN TEK
 SCREWS. CLIP MUST BE ALLOWED
 TO SLIDE UNDER AXIAL PRESSURE.

A BREAK/MOVEMENT JOINT IN
 CLADDING MUST COINCIDE WITH
 BREAK IN ATTACHMENT SYSTEM
 AND FLOOR DEFLECTION JOINTS
 TO PREVENT DAMAGE AND STRESS
 ON WALL SYSTEM, CONSULT CLADDING
 MANUFACTURER FOR DETAILS,
 NOT BY KWS®

GAP BETWEEN RAILS TYPICALLY
 EQUALS 1.5x THE EXPECTED
 FLOOR MOVEMENT, MINIMUM
 OF $\frac{3}{8}$ " AND MAXIMUM OF 1.5"

FLOOR DEFLECTION TRACK,
 BY OTHERS

BRACKET MUST NOT INFRINGE ON
 STEEL STUD FLOOR DEFLECTION
 TRACK MOVEMENT



TYPICAL FLOOR DEFLECTION JOINT

SCALE: 3" = 1'-0"