



One[™]
Laminated Structural
Continuous Wall Insulation

INSTALLATION GUIDE

Structural Insulated Sheathing,
All in **ONE** Panel



ThermalStar[®]
BY ATLAS EPS



One™

Laminated Structural
Continuous Wall Insulation

Designing and building instructions for ThermalStar One are described in the following manual. These instructions can be considered general and for more detailed questions, please contact Atlas EPS.

General installation, fastening details and instructions must be followed for applicable warranties. Please consult with local building official or code compliance officers for further compliance questions.

ThermalStar One is both easy to design for and install. It was developed with code compliance in mind and offers the best price and performance combination you can assemble.

SAFETY

Follow all OSHA regulations, safety guidelines and practices. ThermalStar One is to be used as exterior sheathing and only as prescribed. Keep away from flame sources and intense heat.

PRODUCT DESCRIPTION & OVERVIEW

Patent pending ThermalStar One is an insulated structural sheathing product. Unlike other nailbase products, the OSB of ThermalStar One faces inward, with the insulation on the exterior side.

STANDARD FEATURES INCLUDE

- Expanded polystyrene (EPS) bonded to the exterior side of 7/16" Exposure I PS2-10 OSB with permanent adhesive
- Polymeric film facer on the exterior side of the EPS
- Manufactured with EPS[®] Technology to provide a wax matrix for the EPS component of ThermalStar One
- Meets R5 assembly rating for IRC prescriptive +5 use and is designed to be used in conjunction with the IRC designation of the "13+5" wall design
- Qualifies as a water resistant barrier and does not typically need an additional layer of felt paper or house wrap
- Serves as a direct replacement of wall sheathing panels in braced wall construction with same fastening schedule as 7/16" OSB.
- Standard 4'x8' or 4'x9' sheets, with 4'x10' sheets available upon request

LIMITATIONS

- For external walls only
- ThermalStar One is to be installed in dry conditions and tape at temperatures above 0°F
- ThermalStar One has not been tested for use in exterior walls of IBC Types I-IV construction
- Joints between panels and corners must be sealed within 14 days of installation
- Cladding is to be installed within 180 days of installation

STORAGE & HANDLING

- Standard ThermalStar One is packaged in 4'x8', 4'x9' or 4'x10' bundles. R3 ThermalStar One is packaged with 40 sheets to the bundle, R5 ThermalStar One is packaged with 28 sheets, and R7.5 is packaged with 20 sheets. ThermalStar One is factory packaged with a poly shroud and can be stored outside as long as the shroud is intact and leak proof.
- Store ThermalStar One elevated from the ground and moist conditions. Do not stack material higher than 9'.

DESIGNING WITH THERMALSTAR ONE

- A key feature of ThermalStar One is the ability to cover the rim joist. Refer to model code fastening table for 7/16" OSB.
- The developed wall thickness for a 2'x4' wall built with ThermalStar One is 5-5/8" thick when used with a common 2'x4, including interior gypsum in the calculation
- Meets 15 psi foam plastic compressive strength requirements for installing windows, claddings and other adhered veneer through foam layer. See flashing and nailing details in Detail 16.
- Most window manufacturers accommodate continuously insulated wall thicknesses with return extension jambs. These jambs are typically available in various sizes depending on wall thickness. For homes built with drywall returns, it is simple to adjust the drywall return on the site.
- When using full size brick veneer, 8" thick foundation walls can be used (see Detail 11). Be sure to insulate the interior of the rim joist which will not be covered with ThermalStar One with this detail.
- With cladding designs that require multiple layers of water resistive barriers, such as "3 part" or traditional hard coat stucco and adhered stone veneers, ThermalStar One may be considered the first layer of two water resistive barriers.

FASTENING DETAILS FOR THERMALSTAR ONE

ThermalStar One is installed with a patent pending SENCO nailer. This nailer, and the specified SENCO nails, must be used for installation in order for the limited lifetime warranty to apply. This nailing system ensures that the sheathing nails are secured with the head seated on the surface of the OSB. STANDARD NAILERS MAY NOT BE USED FOR INSTALLATION OF ThermalStar One. Consult with Atlas EPS for other approved models.

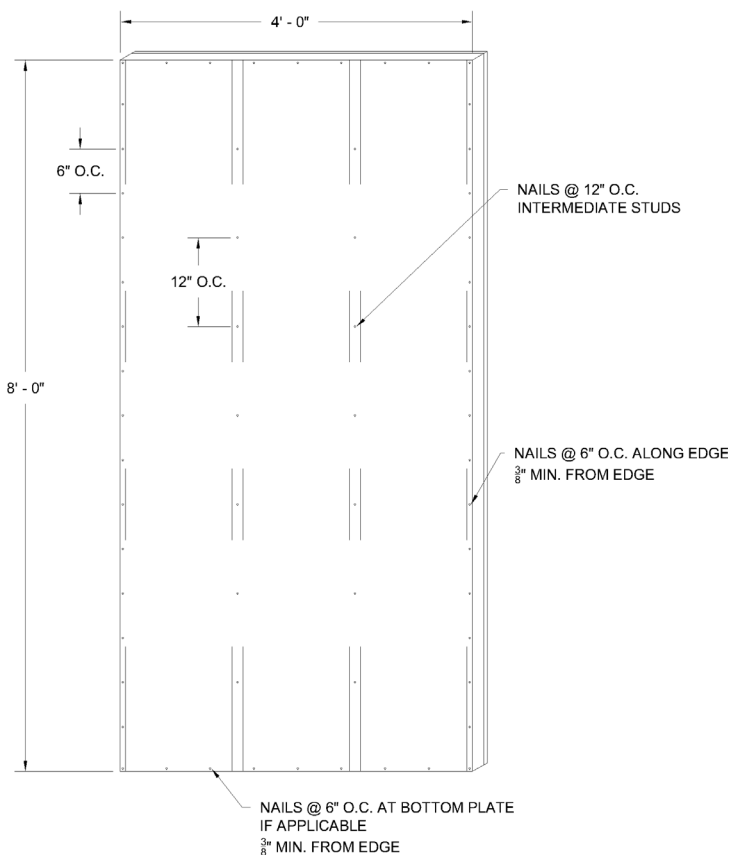
- Only use SENCO SCN63LDXP nailer for ThermalStar One R3 and R5. Use the 3/8" thick R3 spacer on the SENCO SCN63LDXP nailer when fastening ThermalStar One R3.
- Only use SENCO SCN75LDXP nailer for ThermalStar One R7.5
- Only use SENCO 2-3/8" x 0.113" 15° GL24APBF nails for installation
- Before installing sheathing, always conduct a test nail to assure that the nail gun is adjusted correctly to set the head of the nail flush with the OSB surface of ThermalStar One.
- ThermalStar One can be installed reversed and used as nailbase with the OSB facing outward. For fastening details, please reference our ThermalStar Nailbase Installation Guide.



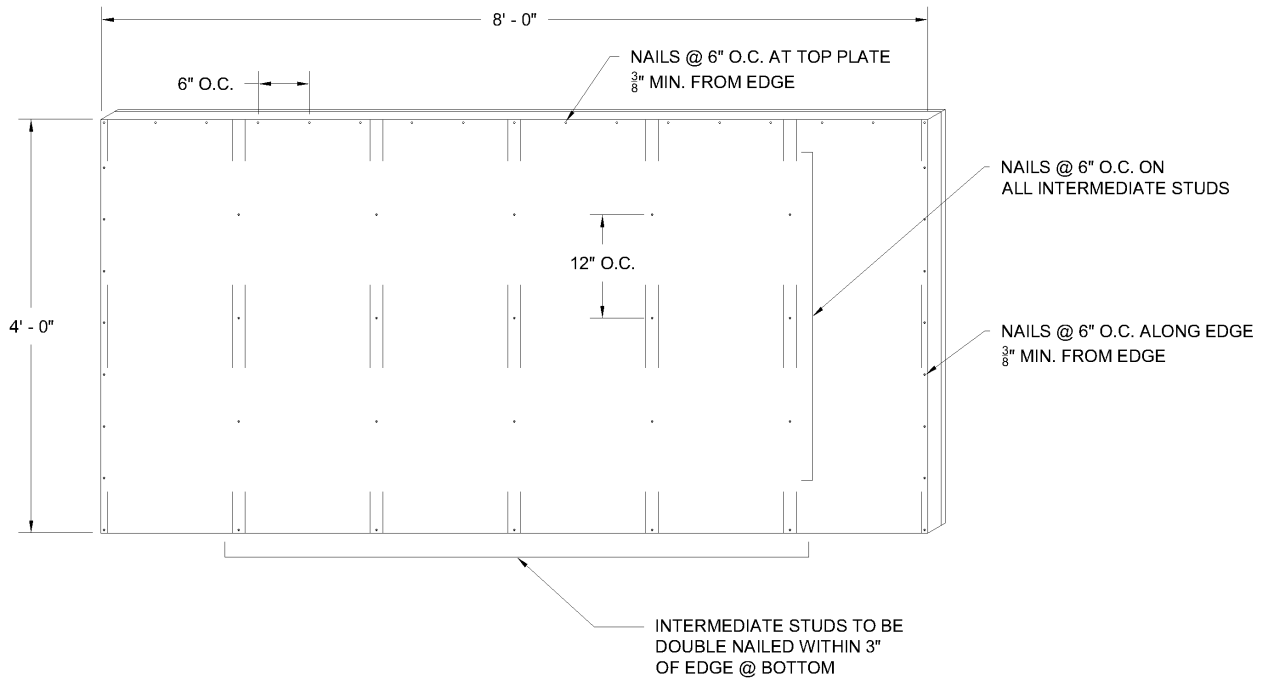
Detail 1

Standard Vertical Nailing Pattern

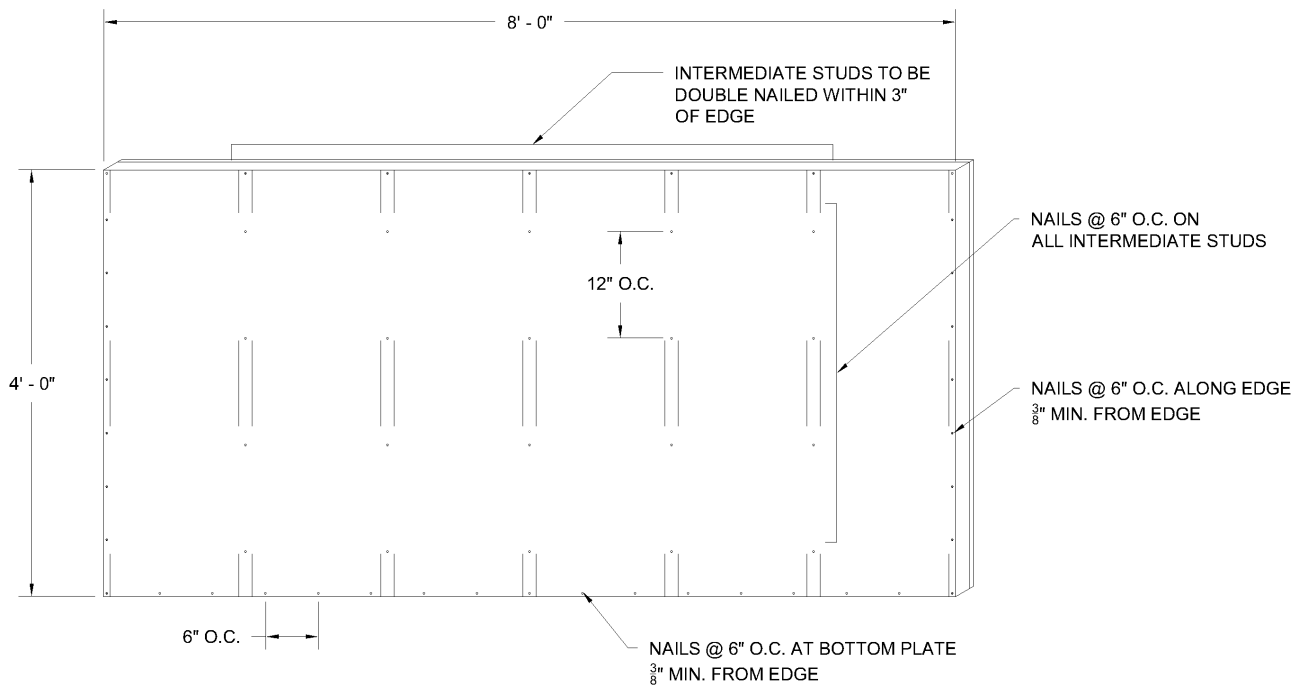
Detail 1 illustrates typical wall section nailing. For portal framing or other special bracing conditions, simply follow prescriptive fastening schedules for wall sheathing panels in the model codes.



Detail 2
ThermalStar One Horizontal Nailing Pattern (Top Plate)



Detail 3
ThermalStar One Horizontal Nailing Pattern (Bottom Plate)



CONSTRUCTION & INSTALLATION OF THERMALSTAR ONE

- No requirement to tape the nail holes
- ThermalStar One is to be installed with an approved acrylic adhesive seam tape, such as 3M 8777. The following areas require seam tape:
 - Vertical and horizontal seams
 - Vertical and horizontal butt joints
 - All corners
- Large bruises and field damage (cuts in the exterior water resistant barrier) should be repaired with seam tape. Large field damage can be repaired with cut to size foam sheets secured with seam tape.
- Foam panels that have been pulled from the OSB in ThermalStar One, areas with alternate structural sheathing such as plywood or gypsum, or other parts of the wall with no foam sheathing may be brought to the same vertical plane as ThermalStar One by installing foam sheathing. The foam sheathing should be installed using cap nails, roofing nails, or wide crown staples. Spacing is to be 12" O.C. at perimeter and 16" O.C. spacing and minimum penetration of the fasteners the full thickness of the structural sheathing, plus 1/4" beyond.
- When blank panels of ThermalStar One foam or ThermalStar LCI are used as the foam sheathing, the seams may be taped and penetrations flashed to function as part of the WRB assembly per approved use.
- ThermalStar One cuts with common circular saws same as OSB.
- Panels may be installed either vertically or horizontally.
- All structural and mechanical connections such as hurricane/uplift straps and connections, as well as ledger boards, must have the EPS layer removed with a razor and scraper to provide structure to structure connection. Replace the foam if possible and tape or flash as required.

BRACED WALL FRAMING DESIGN

Use of ThermalStar One with the patent pending nailing system provides for IRC prescribed use as continuous sheathing. ThermalStar One can be used with most mechanical bracing and strapping that is often required for high wind zone and seismic

zone design, provided that the instructions for those attachments are followed.

STUCCO & FAUX STONE

Traditional or 3 coat stucco, faux thin set stone veneers, and other exterior finishes, are typically installed with 2 layers of felt paper. This design prescription should be followed and ThermalStar One can be considered the first WRB layer. Install the second WRB layer (typically #15 felt paper) and metal lathe layers with prescribed fasteners (see Detail 14 and 15).

EXTERIOR INSULATION FINISH SYSTEMS (EIFS, STO, DRYVIT)

EIFS cannot be applied directly to ThermalStar One. EIFS requires a continuous WRB to be installed behind the EPS layer for the EIFS warranty to apply. It is suggested that if EIFS is specified on a home that also specifies ThermalStar One, loose EPS can be ordered as a separate sheet and applied over the OSB/drainage build wrap according to the installation instructions of the EIFS supplier.

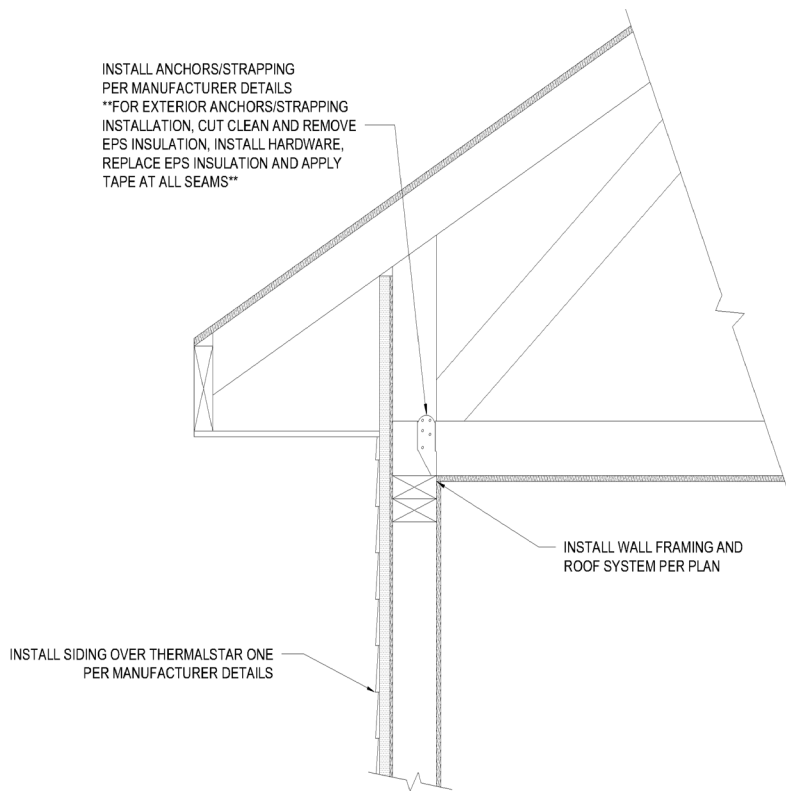
BRICK VENEER

Brick veneer can be easily installed with ThermalStar One. ThermalStar One is a WRB, but all other flashing details need to be followed, as well as weeps and brick ties. Brick ties are to be installed per manufacturers instructions (remove EPS layer for direct attachment) or use a barrel type brick tie developed specifically for use with a continuous insulation.

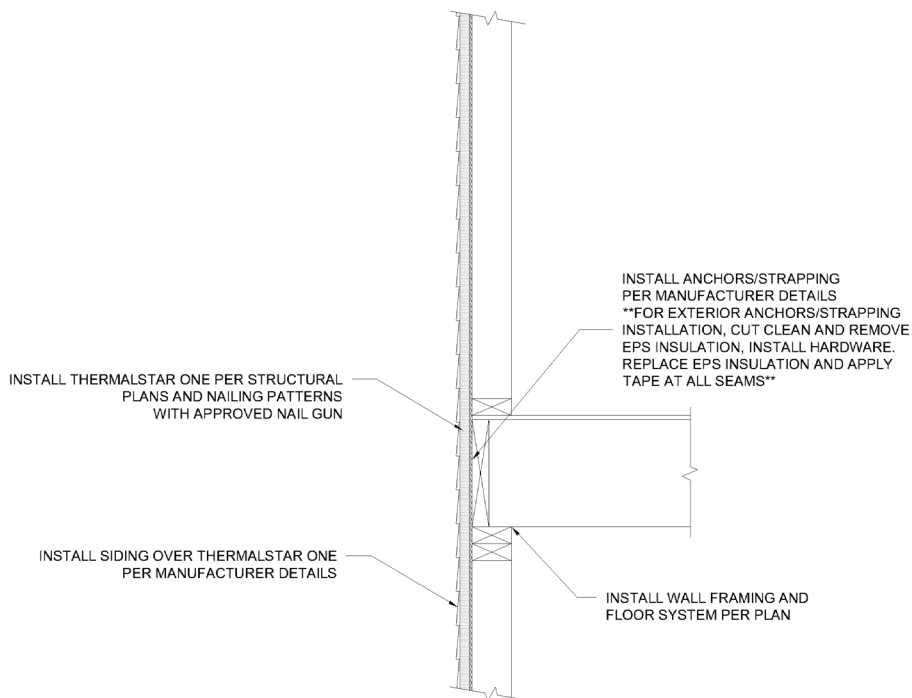
TYPICAL STRUCTURAL ATTACHMENTS (HURRICANE STRAPS, PORTAL FRAMING, LEDGER BOARDS)

All "structural" attachments require direct contact and attachment to the OSB component of the ThermalStar One and framing. For these details, remove the EPS where the attachment occurs with a razor, secure the attachment, replace the EPS if possible, and seal with tape.

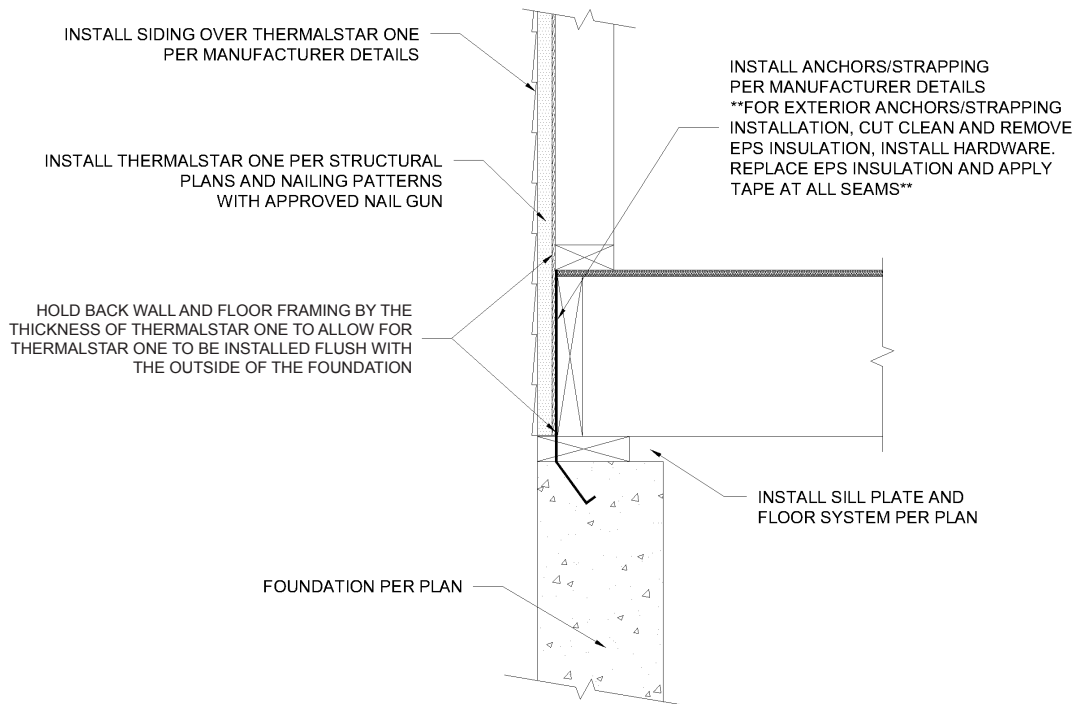
Detail 4
 Typical Wall Section & Roof Truss with Siding



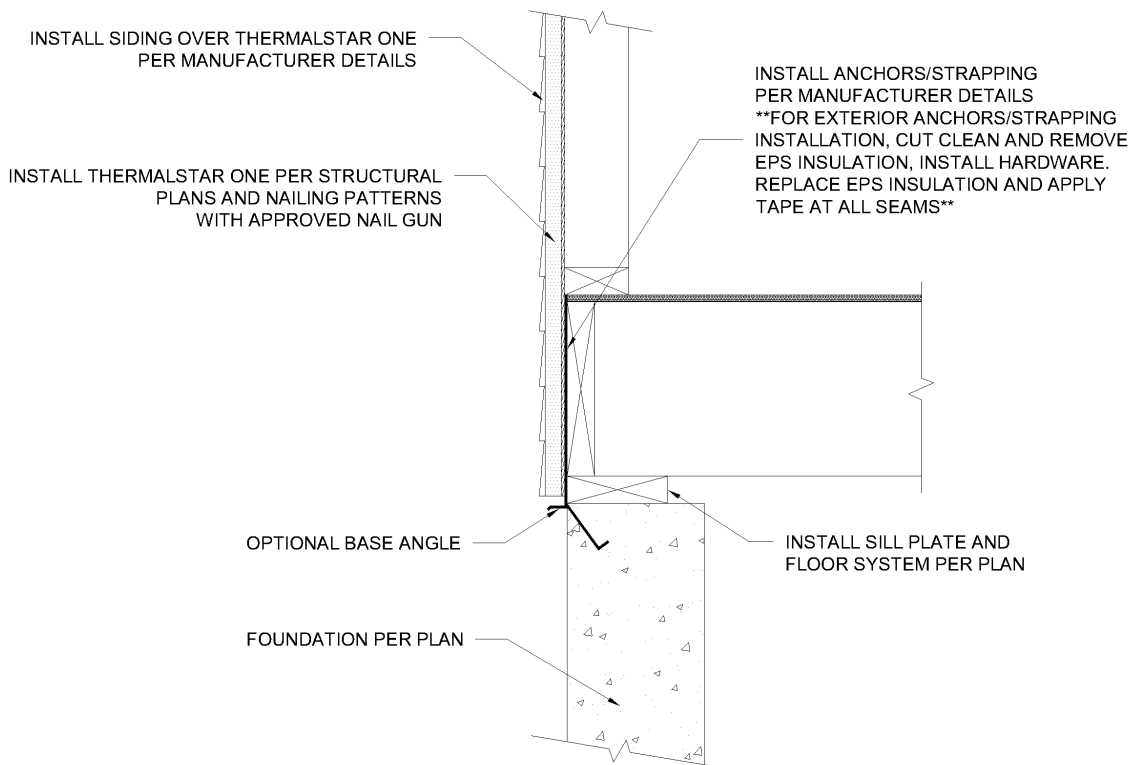
Detail 5
 Typical Wall Section at Floor Deck with Siding



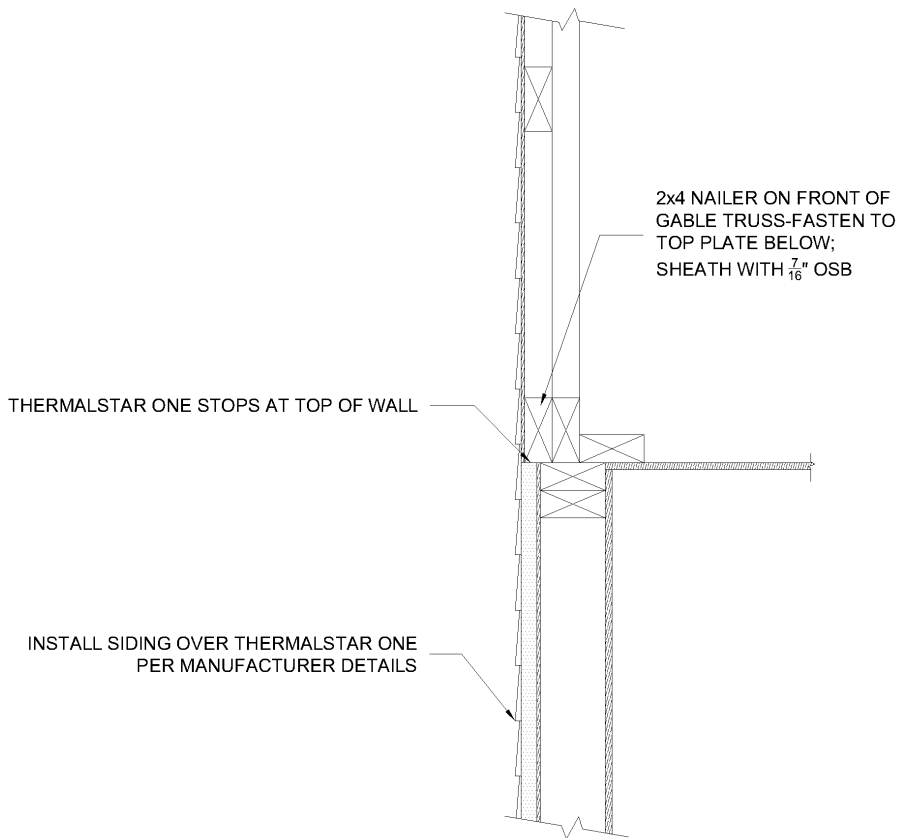
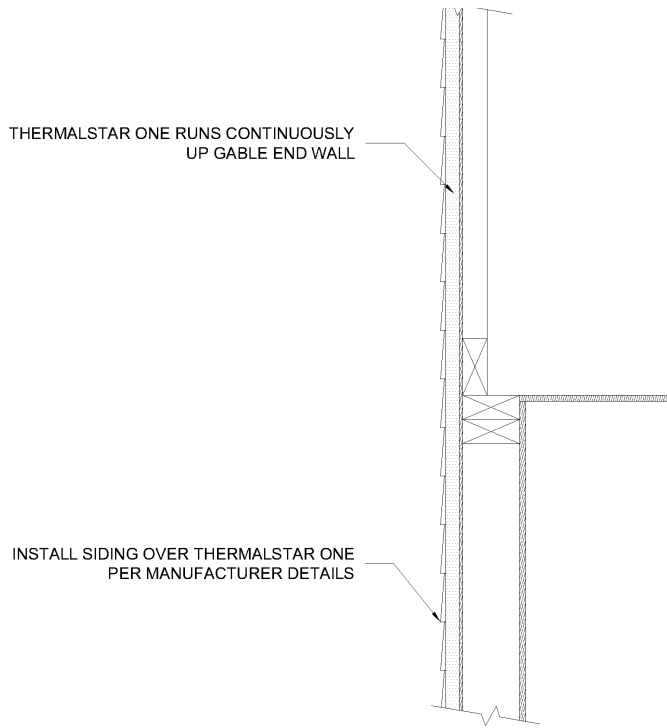
Detail 6
Typical Wall Section at Foundation Siding Flush with Foundation



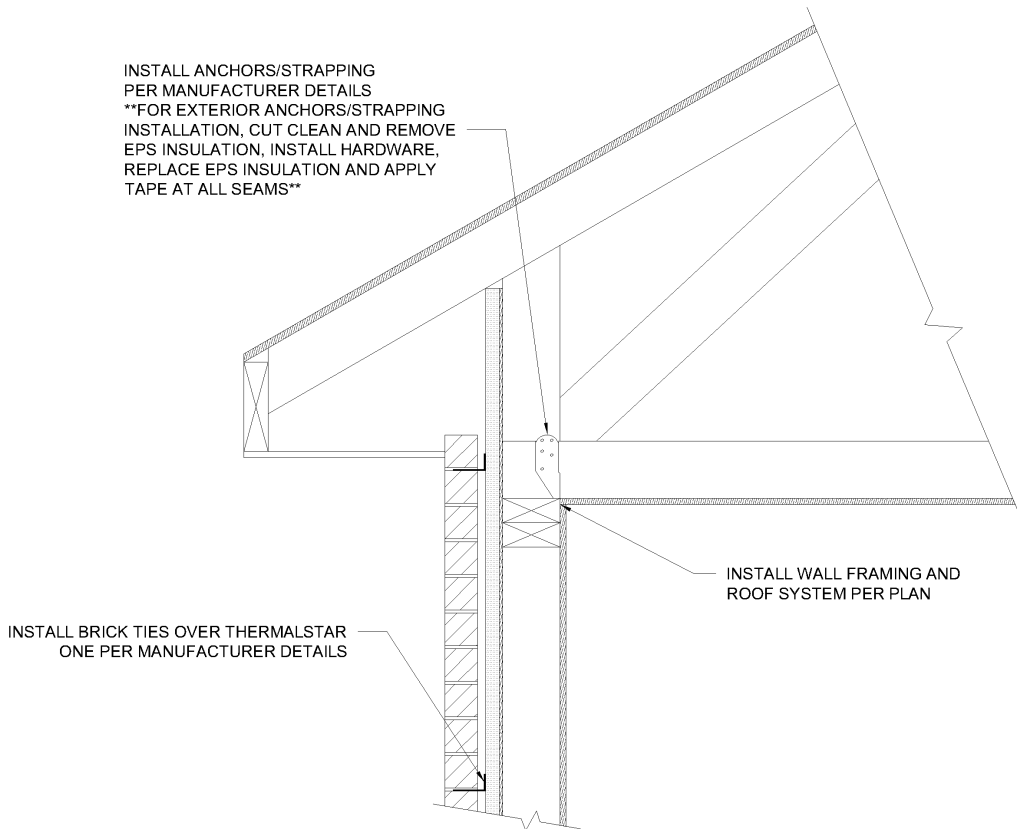
Detail 7
Typical Wall Section at Foundation with Siding



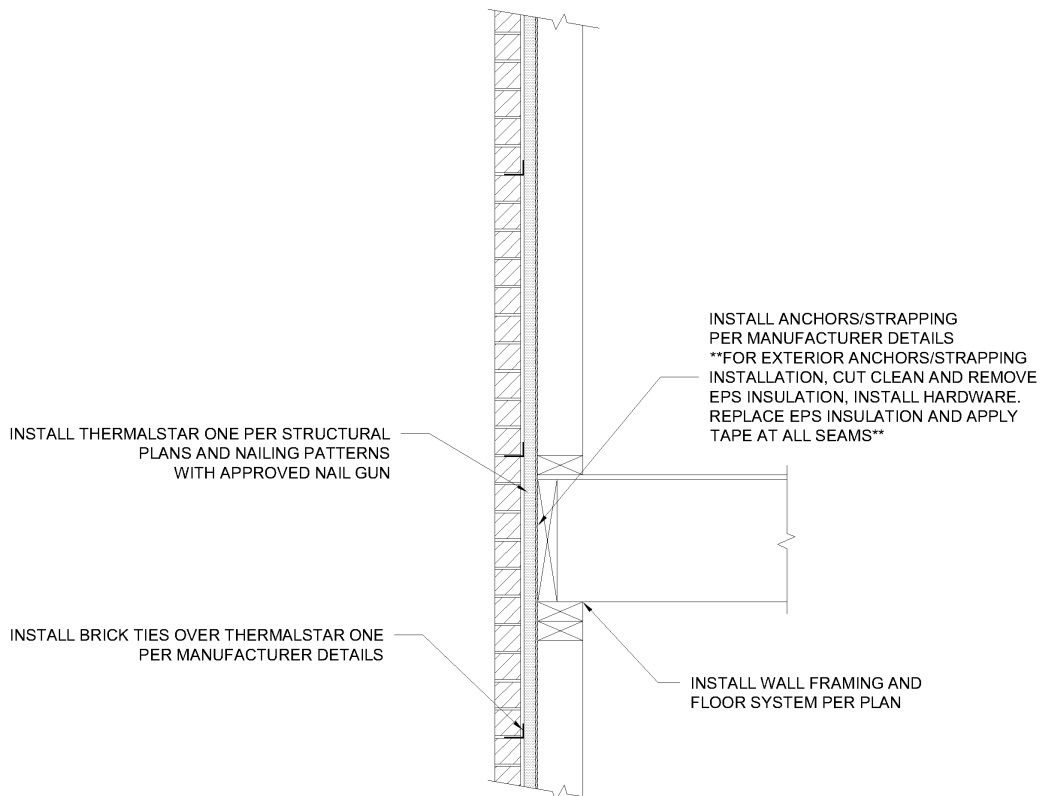
Detail 8
Optional Wall Sections Gable End Wall at Roof Truss with Siding



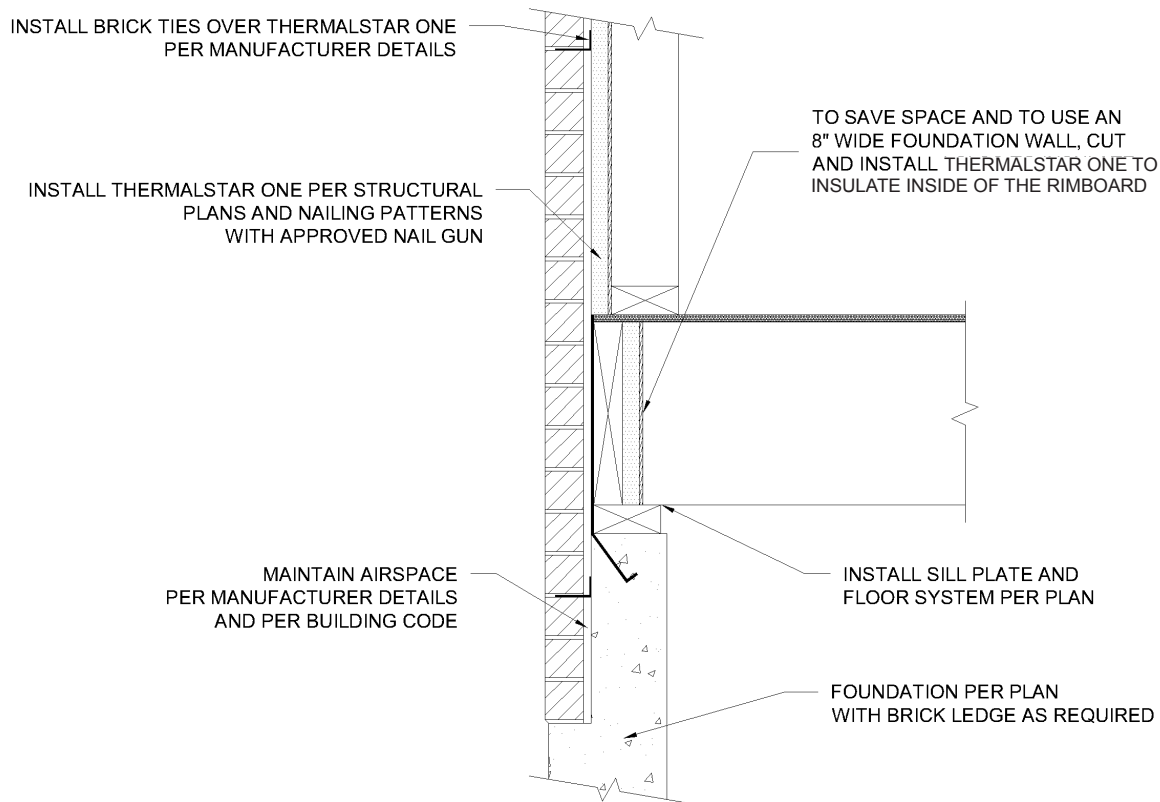
Detail 9
Typical Wall Section at Roof Truss with Brick



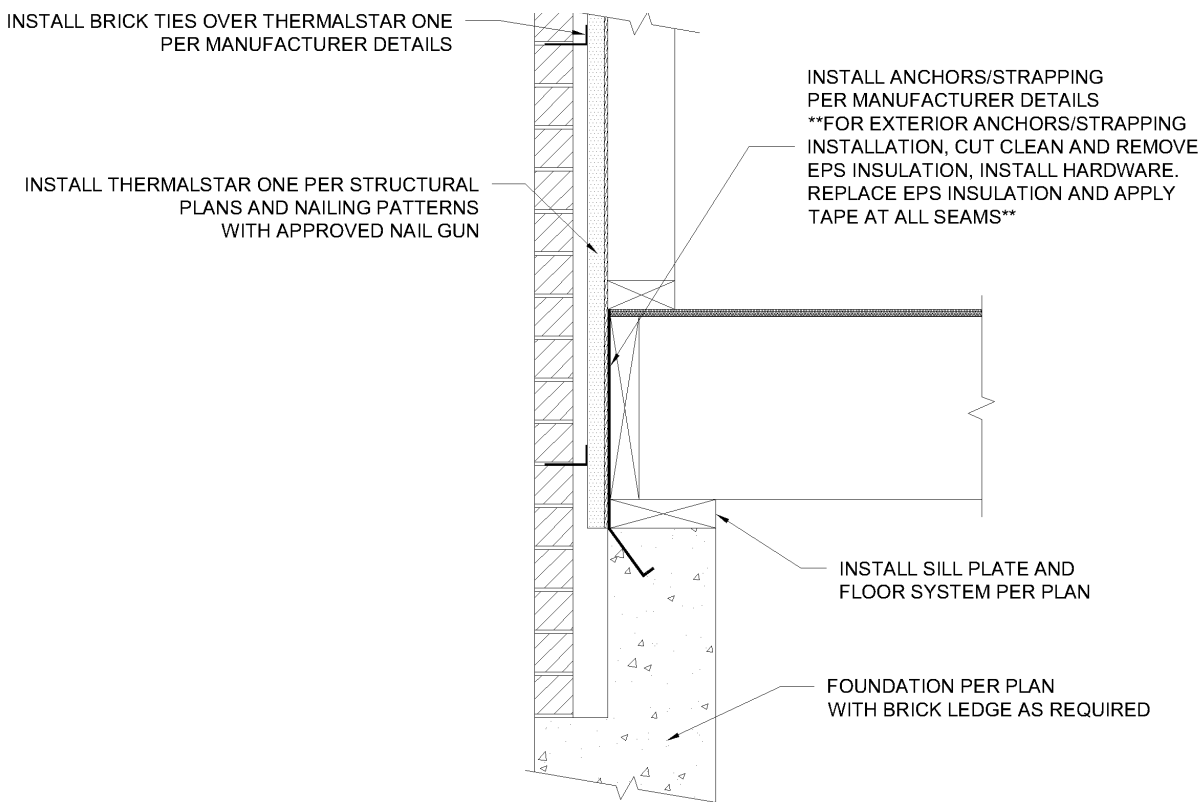
Detail 10
Typical Wall Section at Floor Deck with Brick



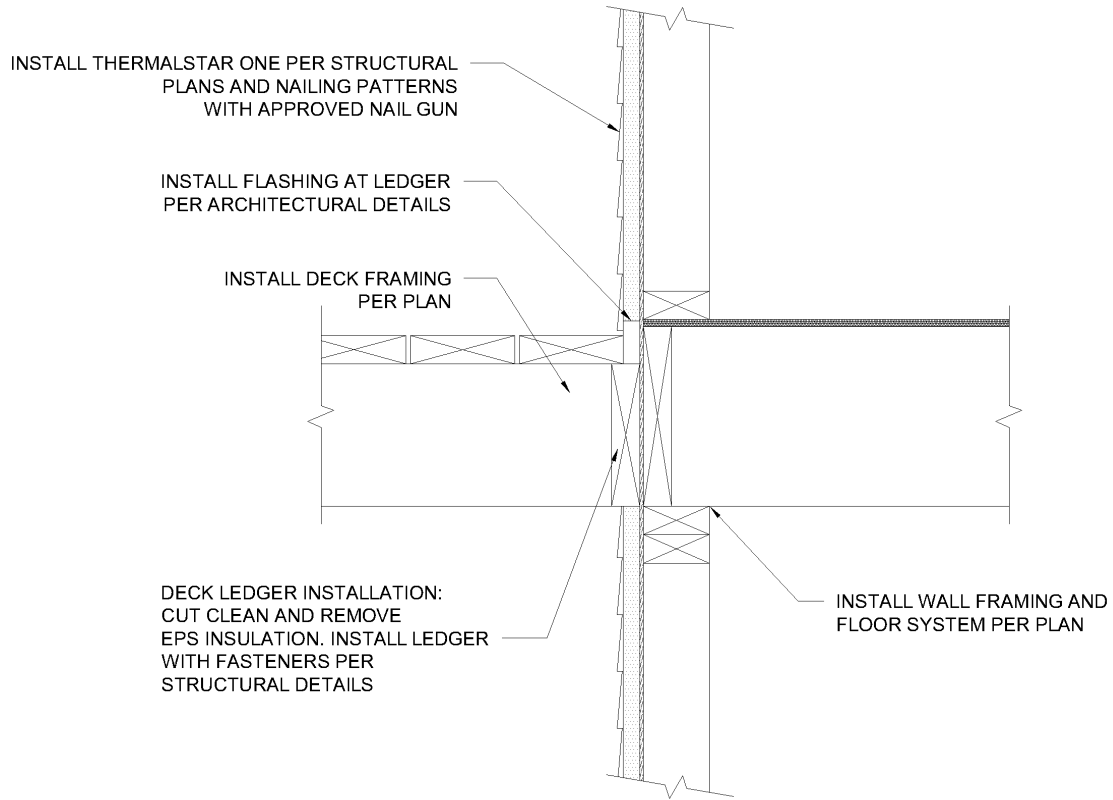
Detail 11
Typical Wall Section at 8" Foundation with Brick



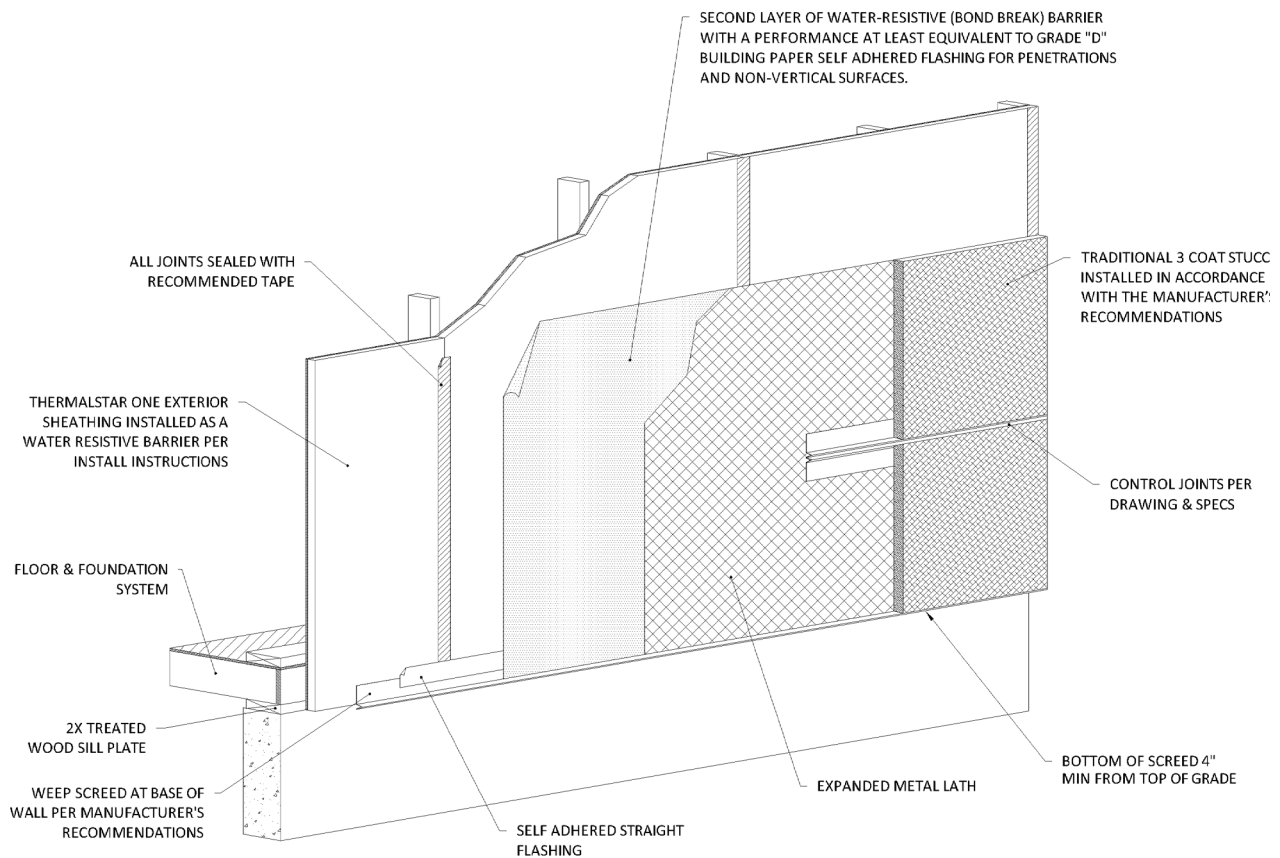
Detail 12
Typical Wall Section at Foundation with Brick



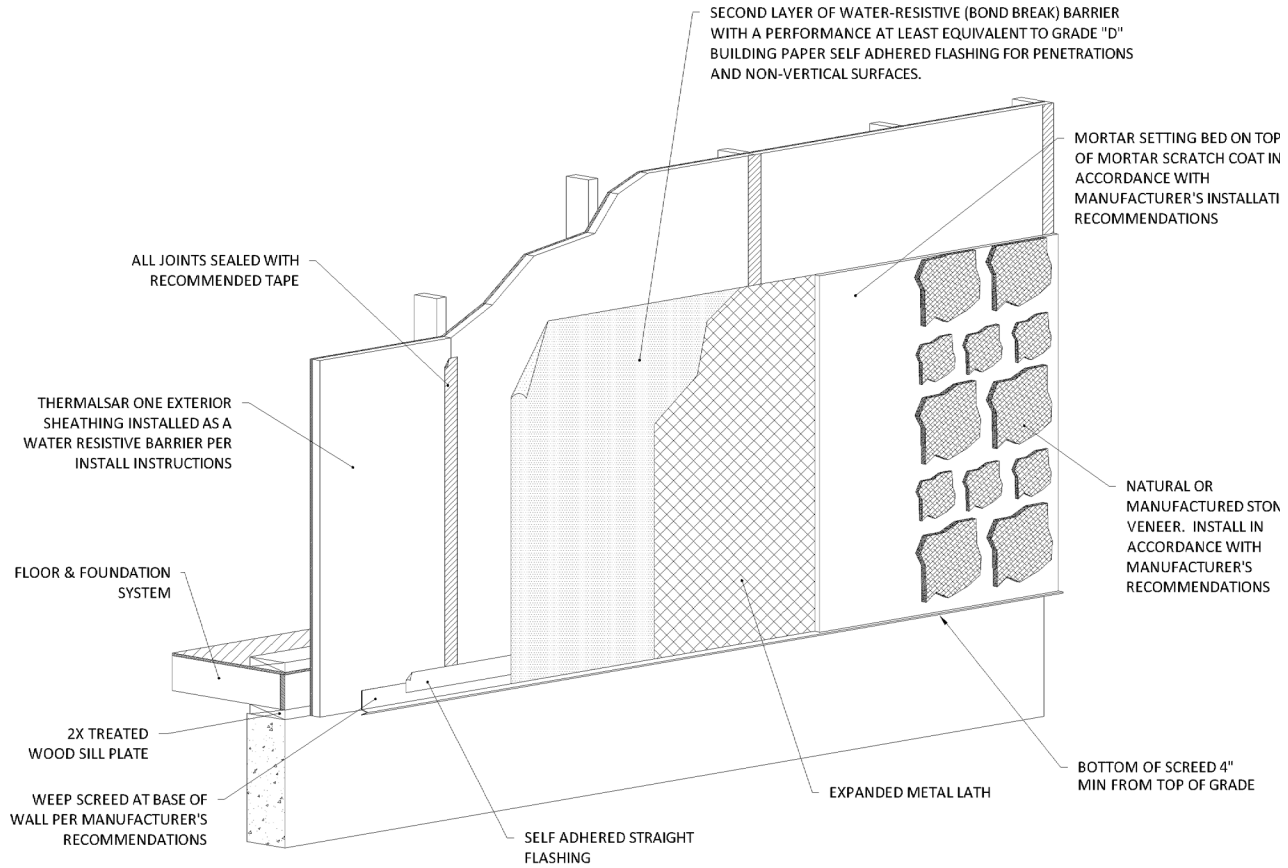
Detail 13
Typical Wall Section at Exterior Deck



Detail 14
Typical Wall Section at Foundation — 3 Coat Stucco



Detail 15
Typical Wall Section at Foundation – Stone Veneer



Detail 16
Typical Taping and Window Installation Guide

