

PART 1–GENERAL

1.01 RELATED DOCUMENTS

- A. The Drawings and provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.02 SUMMARY

- A. Provide labor, materials, and equipment necessary to spray-apply polyurethane foam (SPF) insulation, air seal and water repellent treatment for *[chose one of the three following and delete the rest: cavity wall CMU OR exterior stud wall brick cavity OR stud wall assembly]* throughout the Project.

1.03 SUBMITTALS

- A. Submit manufacturer's technical product data of material intended for use, including specifications, installation instructions, material safety data sheets, and general recommendations.
- B. Submit an installer's certification or recommendation letter from the spray polyurethane foam material manufacturer.

1.04 PROJECT CONDITIONS

- A. Substrate: Proceed with spray polyurethane foam application only after substrate construction, penetration work, and related welding and other hot work has been completed. For CMU applications, verify that mortar has cured sufficiently and masonry substrate is dry by checking surface for moisture with Moisture Detection Paper (MDP) strips.
- B. Weather Limitations: Do not install spray polyurethane foam during precipitation or when precipitation is imminent. Do not install when the ambient temperature is less than 50°F without specific authorization of the manufacturer. Do not install when the ambient humidity exceeds the manufacturer's limits.

1.05 QUALITY ASSURANCE

- A. Installer shall be a firm which has had at least 3 years of successful experience in application of spray polyurethane foam. Installer must be an NCFI GoldStarSM certified insulation contractor or have SPF manufacturer's certification for the application.
- B. Installer will provide equipment to spray-apply polyurethane foam including, but not limited to, high pressure plural component proportioning pump, heated hoses of suitable length, spray gun, drum pumps or other material feeding system, and other ancillary equipment necessary for the Project.

- C. Test application: Prior to start of work, installer will spray-apply an area of approximately 100 square feet at the specified thickness as directed by Architect for the purpose of demonstrating visual and physical effects. Proceed with work only after Architect’s acceptance of test application.

PART 2–PRODUCTS

2.01 MATERIALS

- A. Spray polyurethane foam shall be InsulBloc[®] manufactured by NCFI Polyurethanes, Mount Airy, NC. Spray polyurethane foam shall have the following physical properties:

Property	Value	Units	Test Method
Core Density	1.9 - 2.2	lb/ft ³	ASTM D-1622
Closed Cell Content	≥ 90	%	ASTM D-2856
Water Vapor Transmission	≤ 1.0 @ 2" thick	perms	ASTM E-96
R-Value	13 @ 2" thick	hr•ft ² •°F/Btu	ASTM C-518
Compressive Strength	20 (min)	psi	ASTM D-1621
Flame Spread	≤25		ASTM E-84
Smoke Developed	≤450		ASTM E-84
Air Leakage	0 @ 1.57 psf	cfm/ft ²	ASTM E-283
Tensile Strength	≥ 20	psi	ASTM D-1623
Hydrostatic Pressure Resistance	21.6" with no penetration	in H ₂ O	AATCC 127
Water Resistance	6.24 with no penetration	psf	ASTM E-331

- B. Products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product. Requests for Architect’s approval and complete technical data for evaluation must be received at least 10 days prior to bid due date. Additional approved manufacturers will be issued by Addendum.

2.02 MISCELLANEOUS MATERIALS

- A. Foam Repair Kit: Closed-cell foam sealants such as Handi-Foam two part kits from Fomo Products and Touch ‘n Seal 2 component systems from Convenience Products, or other equivalent kits.
- B. Seam Tape: Butyl Seam Tape by NCFI Polyurethanes.
- C. Moisture Detection Paper (MDP) Strips: MDP Strips manufactured by NCFI Polyurethanes, Mount Airy, NC.

PART 3–EXECUTION

3.01 PREPARATION

- A. Clean surfaces to receive insulation of substances which would interfere with the adhesion of the spray polyurethane foam. Remove loose dirt, sawdust, and debris by blowing with compressed air.
- B. Cover gaps greater than 2 inches with seam tape or gypsum backer board, then spray foam over the opening.
- C. Mask adjacent materials as needed to prevent overspray or apply releasing agent prior to foam application to block adhesion (thru wall flashing).
- D. Test substrate with Moisture Detection Paper (MDP) strips to affirm that the substrate is dry.

3.02 APPLICATION

- A. Apply spray polyurethane foam directly to the masonry block or exterior sheathing in accordance to the manufacturer’s installation instructions. All surfaces to be sprayed with foam must be free of all forms of moisture and ice. Apply foam to a uniform monolithic density without voids.
- B. Do not apply spray polyurethane foam during inclement weather or when ambient temperature and humidity are outside the ranges prescribed by the manufacturer.
- C. Apply the spray polyurethane foam to an average thickness of _____ inches with a minimum thickness of _____ inches. Apply the full thickness in any given area the same day.

Note to Specifier: Base average thickness on the R-value requirements (1" ≈ R-6.5). Specify minimum thickness as average thickness less 1/4 inch per inch of average thickness as in table below.

Table 1: Typical R-Values at Specified Thicknesses

R-Value of Insulation	Average Thickness (inches)	Minimum Thickness (inches)
6.8	1	3/4
9.6	1 1/2	1 1/4
13	2	1 1/2
16	2 1/2	2

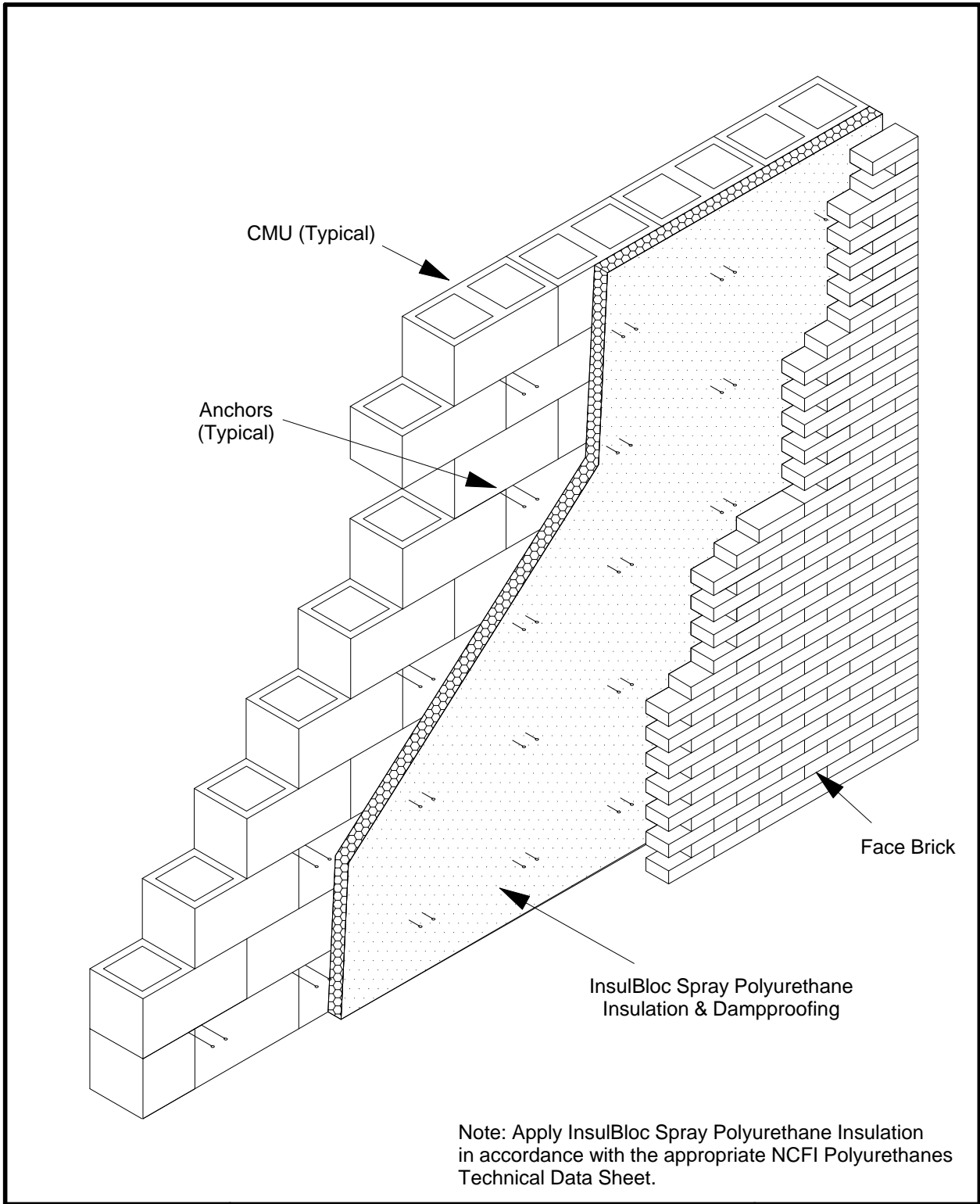
- D. Shield the spray polyurethane foam from interior exposure with an approved thermal barrier.
- E. Remove overspray from adjacent surfaces.


- F. If the foam is applied at a thickness in excess of the specified depth and does not interfere with the installation of the brick and does not block the drainage plane, it can be left in place. If these conditions are not met, the foam should be trimmed or sanded back to a depth that alleviates these problems. Planing the foam can be done with a hand saw to trim off slices when the thickness excess is the result of bulges or lumps. If large areas need to be planed, a circular sander or wire wheel grinder may be used. Removing the foam surface skin layer does not diminish the air blockage, dampproofing ability or R value per inch of the foam membrane. Once the foam layer is planed down to a satisfactory depth, no additional treatment is required before the brick veneer is installed. In some cases, such as small areas around penetrations, it may be easier to completely scrape the foam off of the block surface and re-spray the foam. Patching the foam in this manner is acceptable.

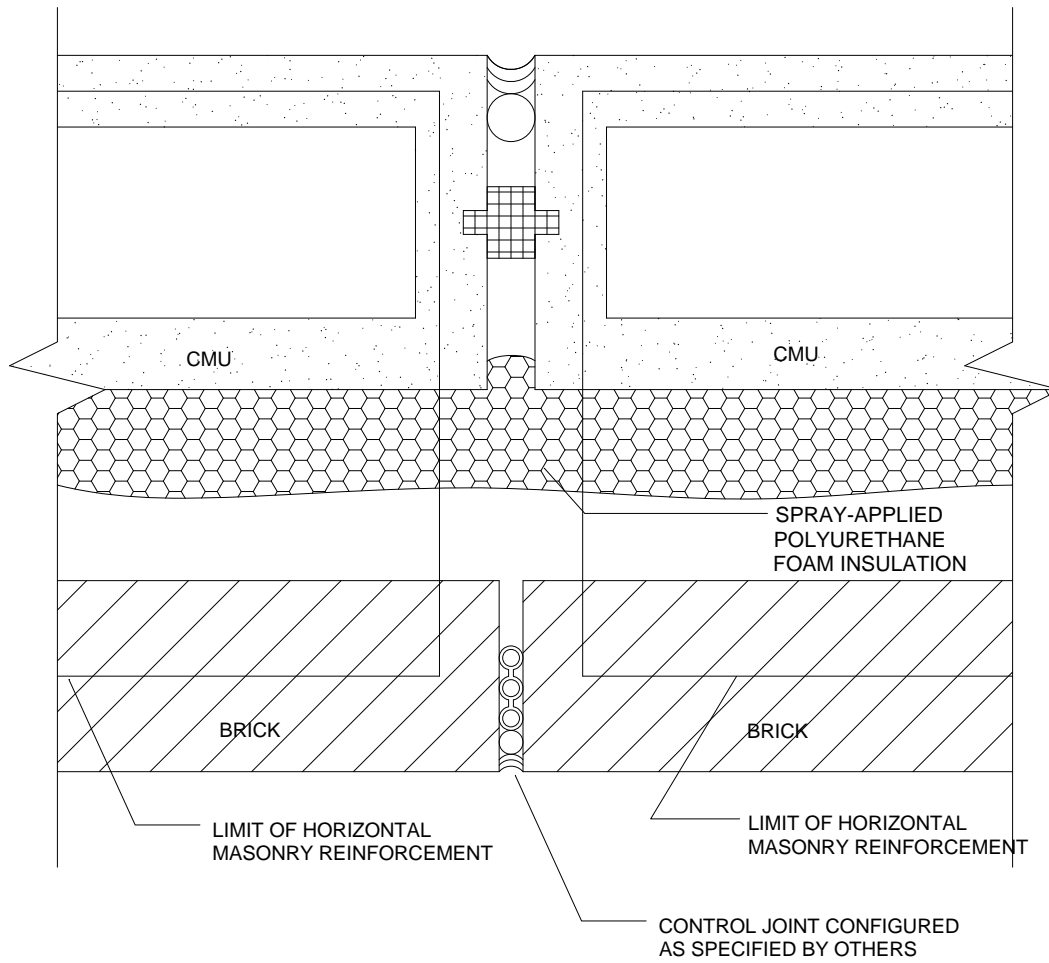
3.03 REPAIR TECHNIQUES

- A. Where damage occurs which violates the spray foam's air seal and moisture seal, repair as needed using the specified spray polyurethane material or the specified foam repair kit material.
- B. If electrical or plumbing penetrations are cut that violate the air, thermal, or moisture seal after the foam application, utilize filler foam to patch and recreate the seamless foam membrane.
- C. Repair larger damaged areas with an additional application of the spray foam.

END OF SECTION 07200



 <p>Masonry Cavity Wall Insulation</p>	<p>Masonry Cavity Wall Insulation System</p>	<p>Dwg. # 1-01</p>
	<p>These details are intended for use by design professionals and users of NCFI products and systems to assist in developing project specific details. They should be modified where necessary to accommodate specific project conditions. Final details and specifications must be approved by a licensed professional.</p>	<p>11-25-05 N.T.S.</p>



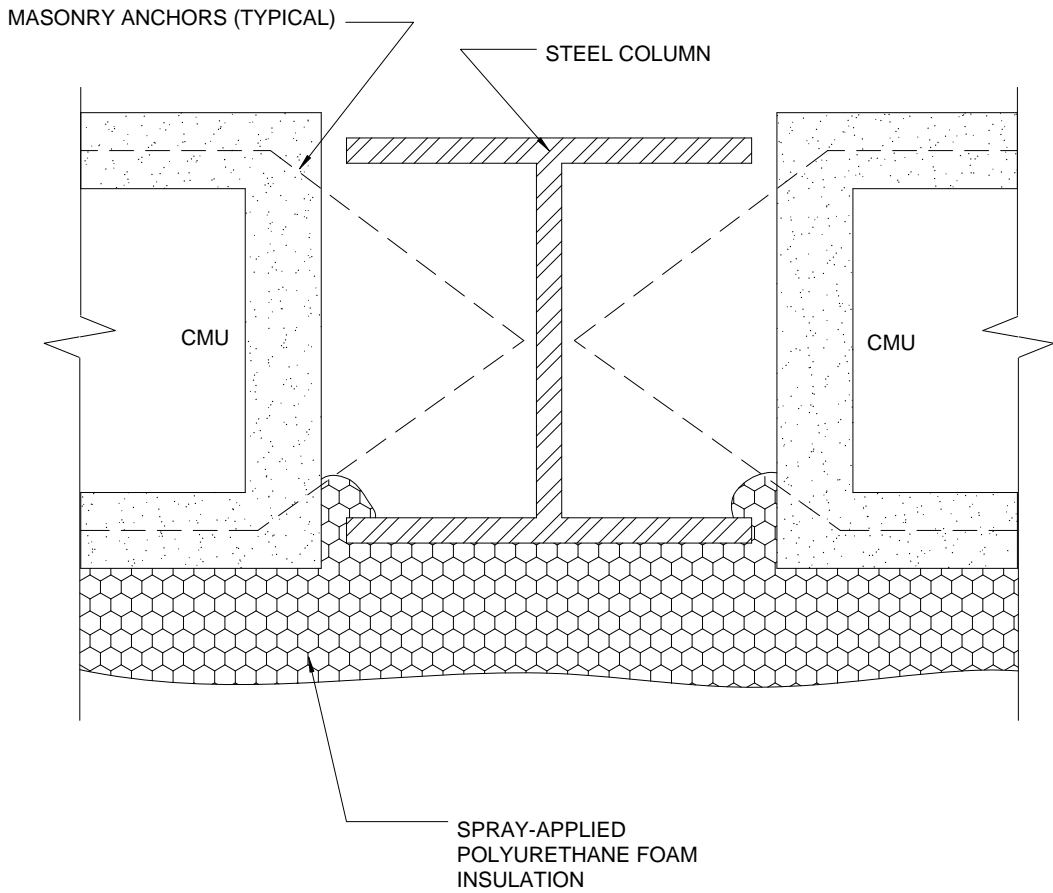
Masonry Cavity
Wall Insulation

Masonry Cavity Wall Control Joint

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Dwg. # 1-02

1-26-07
N.T.S.



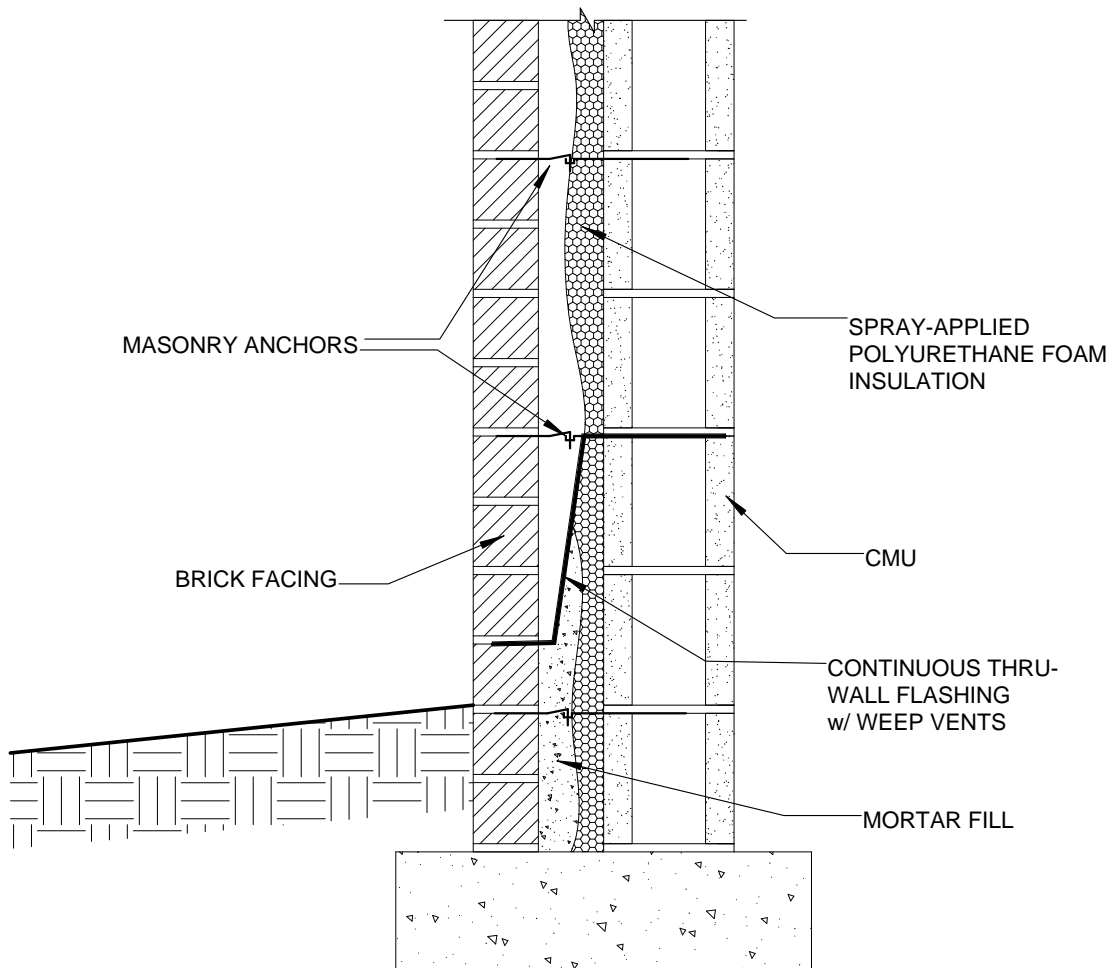
Masonry Cavity
Wall Insulation

Masonry Cavity Wall Column Joint

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Dwg. # 1-03

1-26-07
N.T.S.



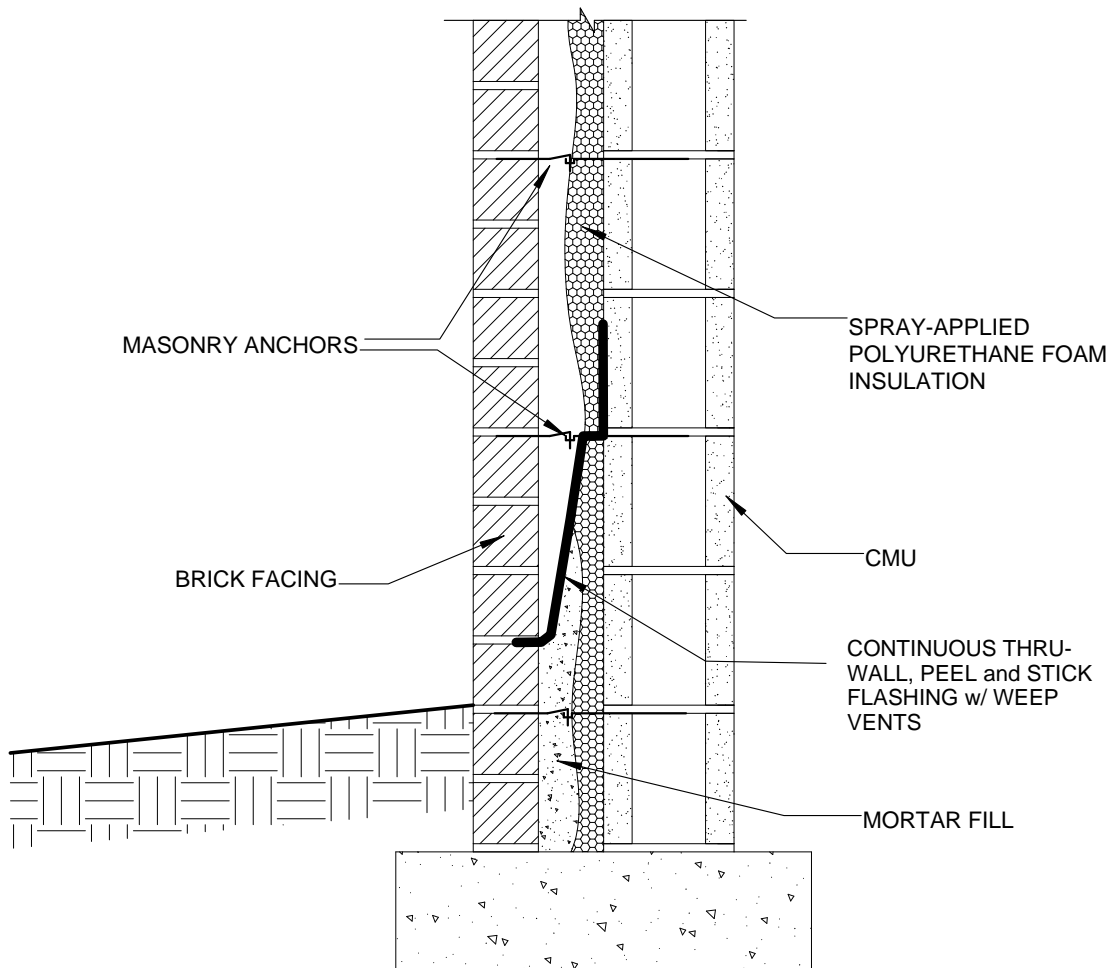
Masonry Cavity
Wall Insulation


Masonry Cavity Wall Section at Footer

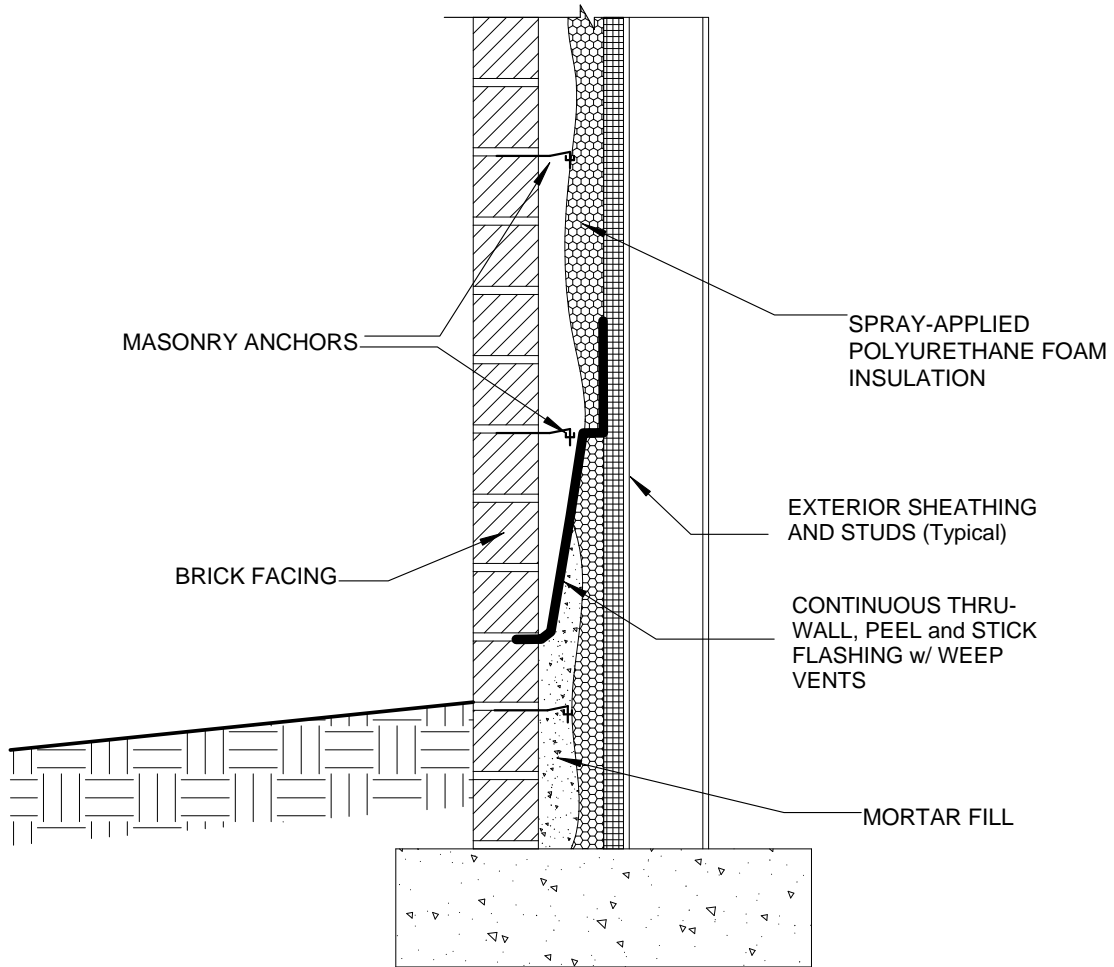
Dwg. # 1-04


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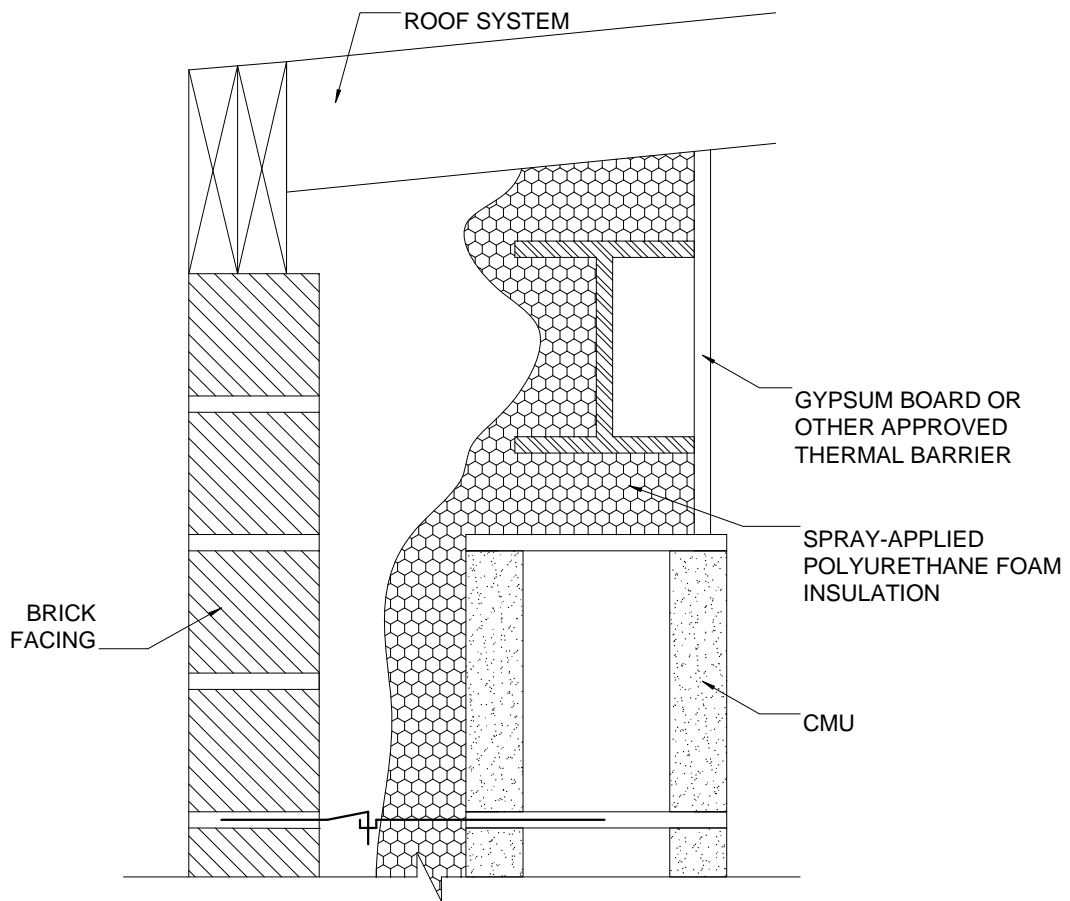
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 <p>Masonry Cavity Wall Insulation</p>	<p>Masonry Cavity Wall Section at Footer</p>	<p>Dwg. # 1-04A</p>
	<p>These details are intended for use by design professionals and users of NCFI products and systems to assist in developing project specific details. They should be modified where necessary to accommodate specific project conditions. Final details and specifications must be approved by a licensed professional.</p>	<p>3-04-07 N.T.S.</p>



 <p>Masonry Cavity Wall Insulation</p>	<p>Masonry Cavity Wall Section at Footer</p> <p>These details are intended for use by design professionals and users of NCFI products and systems to assist in developing project specific details. They should be modified where necessary to accommodate specific project conditions. Final details and specifications must be approved by a licensed professional.</p>	<p>Dwg. # 1-04B</p> <p>9-28-09 N.T.S.</p>
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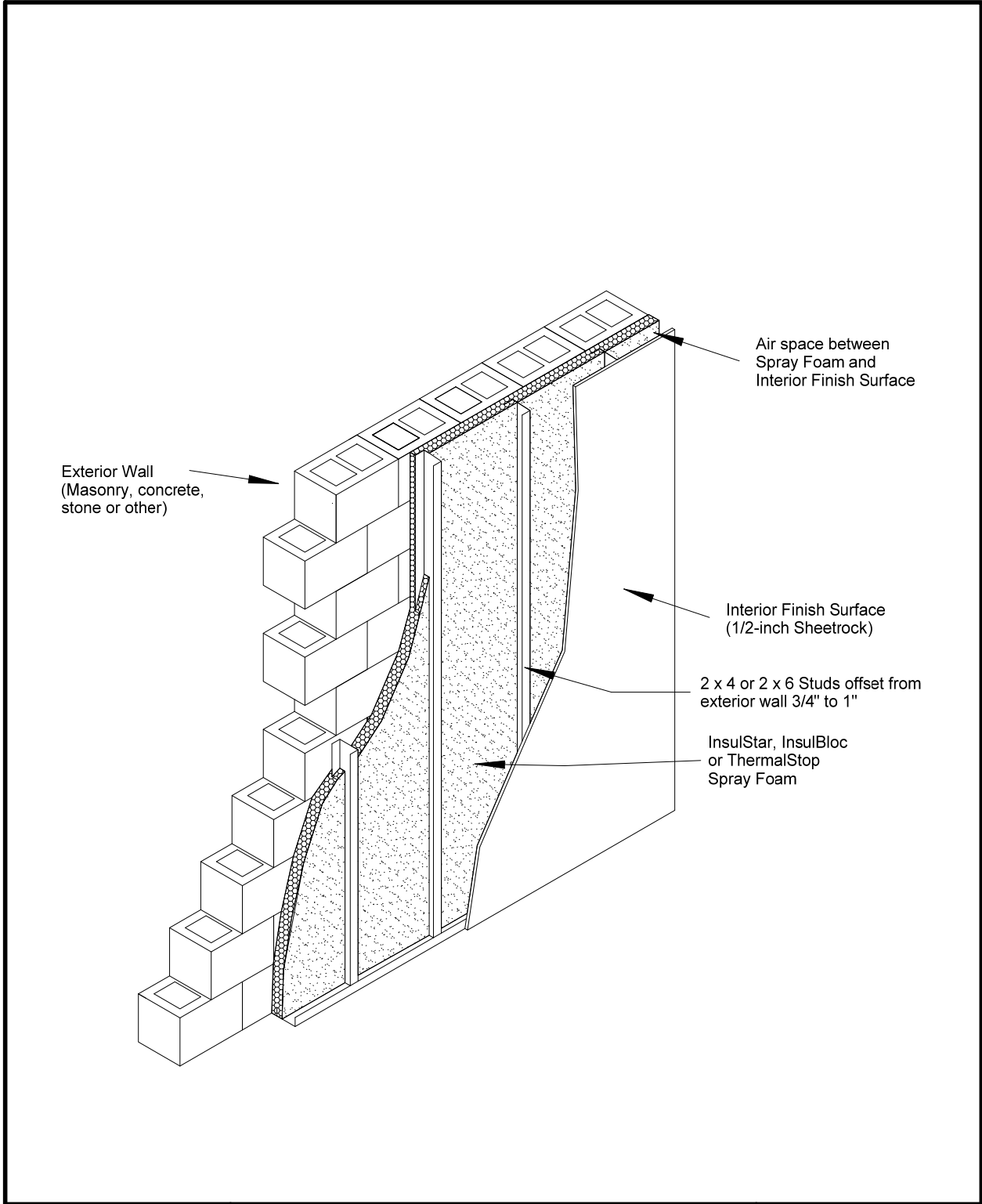
Masonry Cavity
Wall Insulation

Masonry Cavity Wall Section at Roof

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Dwg. # 1-05

1-26-07
N.T.S.



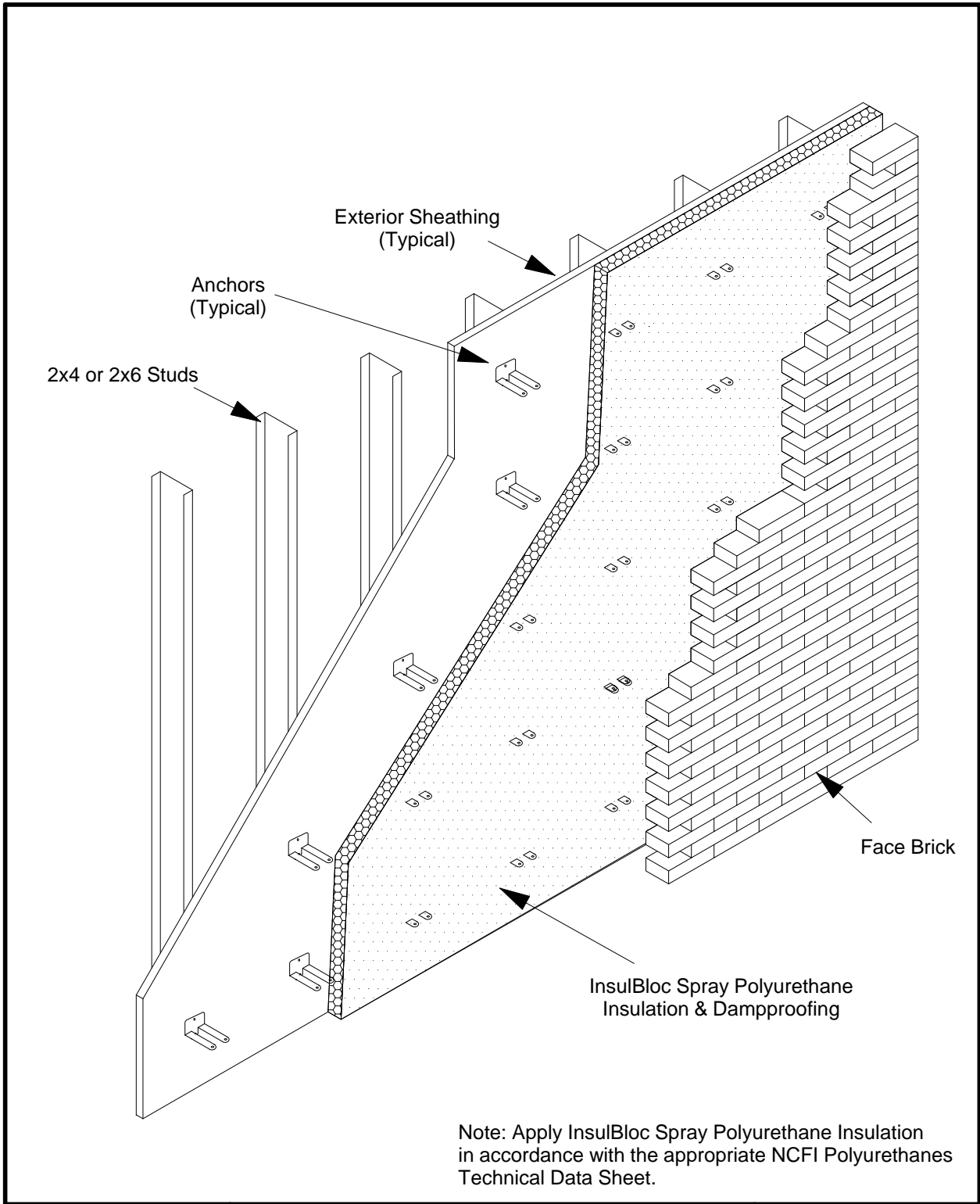
Masonry Wall
Insulation

Masonry Wall with Metal Studs (Typical)

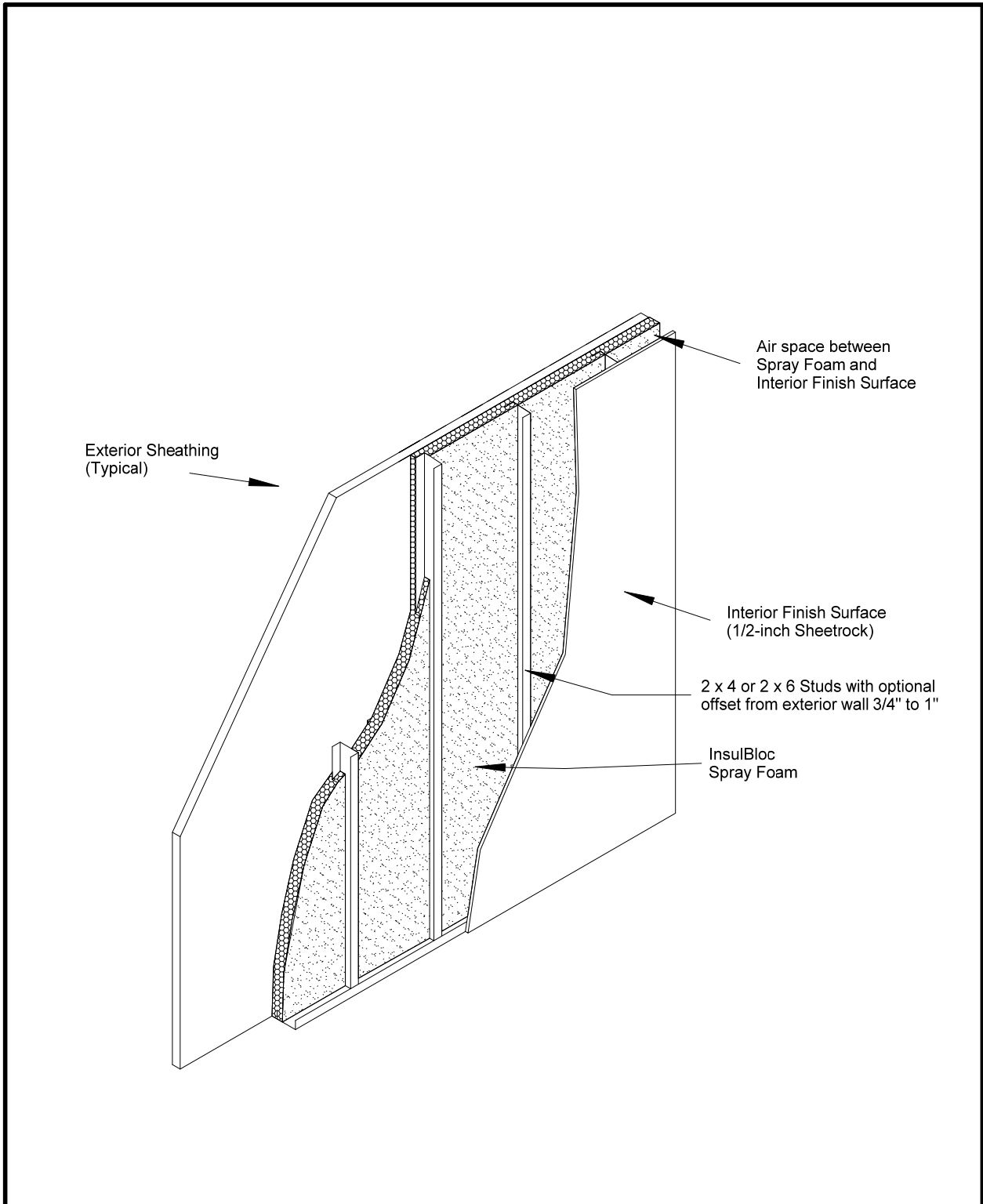
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Dwg. # 1-06

1-2-08
N.T.S.



 <p>Masonry Cavity Wall Insulation</p>	<p>Masonry Cavity Wall Insulation System</p> <p>These details are intended for use by design professionals and users of NCFI products and systems to assist in developing project specific details. They should be modified where necessary to accommodate specific project conditions. Final details and specifications must be approved by a licensed professional.</p>	<p>Dwg. # 1-07</p> <p>9-28-09 N.T.S.</p>
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 Exterior Wall Insulation	Exterior Sheathing with Metal Studs (Typical)	Dwg. # 1-08
	<small>These details are intended for use by design professionals and users of NCFI products and systems to assist in developing project specific details. They should be modified where necessary to accommodate specific project conditions. Final details and specifications must be approved by a licensed professional.</small>	9-29-09 N.T.S.