



HANDS-ON PERFORMANCE EXAM ASSIGNMENT for ARCHITECTURAL METAL FLASHINGS and ACCESSORIES INSTALLERS



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NATIONAL ROOFING CONTRACTORS ASSOCIATION





AMFA-A1: ARCHITECTURAL METAL FLASHINGS AND ACCESSORIES INSTALLATION

Installer Performance Assignment and Instructions

Here are the instructions for your performance exam assignment. It is important you pay close attention to these instructions. Some of the tasks are ranked high in importance for scoring purposes. These tasks are marked **HIGH!**

Be aware you also will be scored on your ability to follow instructions. You will lose points if you do not follow these instructions exactly as they are given. Your ability to follow instructions is also ranked **HIGH!** You will not be given any more information about this assignment. You can keep this copy of your instructions to look at any time during your exam.

There are two parts to this assignment. In Part One, you will set up and demonstrate how to properly put on and use a personal fall-arrest system, or PFAS. This part of your assignment is not timed. In Part Two, you must assemble and install a gutter; an A-type embedded metal edge flashing; and a coping with three types of joints while following specific instructions. If the metal components you are provided have pre-punched holes or pre-marked fastener locations, you must ignore them and only fasten the components following the specific fastening instructions provided. Also, you must perform all work while remaining on the roof deck as though you were working on a roof. This part of your assignment is timed. Remember, you must follow all instructions exactly as they are given. Your Qualified Assessor will review the details with you before starting each part of this assignment.

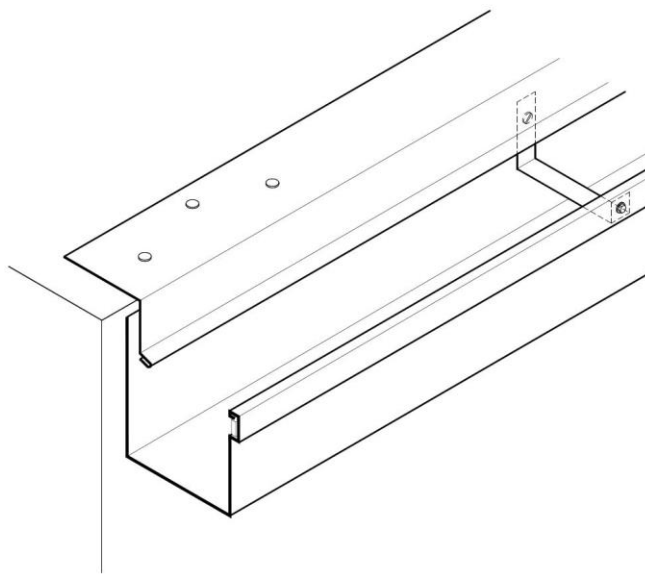
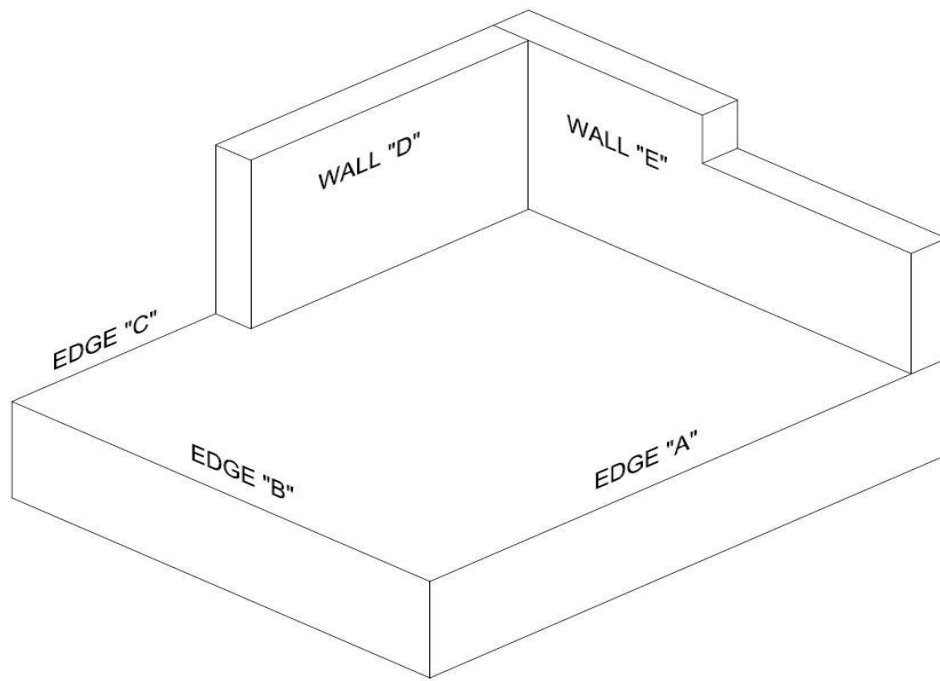
EXAM PART ONE: SETUP, PFAS DEMONSTRATION AND SAFETY INSTRUCTIONS

1	This is Part One of your assignment. This part is not timed.
2	You may NOT ask your assessor or anyone else questions about: <ul style="list-style-type: none">- How to set up or use any tools, equipment or materials- How to wear or use a PFAS. NOTE: You must wear the harness during the exam.- Correct or incorrect procedures, steps or techniques to help you do any task
3 HIGH!	For Part One of this exam, you must demonstrate and explain to your assessor how to use a PFAS including: <ul style="list-style-type: none">- How to inspect and use each PFAS component and how they work- How to put on your harness- How to connect the lanyard to the harness and to the lifeline- How to use the rope grab device and lifeline so that if you fall, you will not hit the ground or swing sideways and strike something- How and where to attach an anchor device on a roof- How to connect the lifeline to the anchor (Your Qualified Assessor will show you the demo anchor device to use). NOTE: You are not required to stay connected during the exam.
4	When you finish Part One, your assessor will read the instructions for Part Two.
5	Your assessor will show you the demo anchor device you will use to connect the lifeline.

EXAM PART TWO: INSTALLATION TASKS INSTRUCTIONS

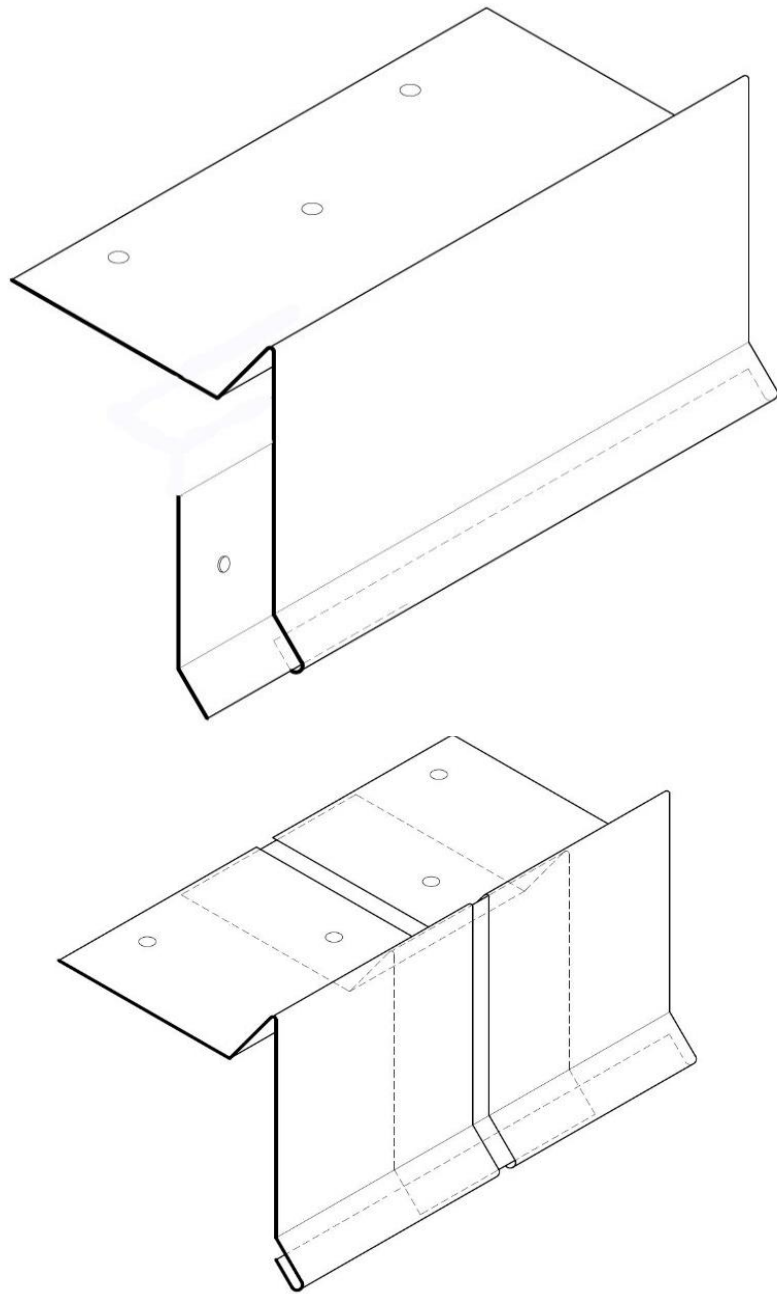
6	This is Part Two of your assignment. This part of your exam is timed. Once the timer starts, you will have 4 hours to complete this part of the exam.
7 HIGH!	You must use the correct PPE when doing the work. Your assessor will stop your work if you do something unsafely. You must correct the safety error before proceeding. You do not get extra time when you are stopped for a safety issue.
8	Take whatever time you need to set up all tools, equipment and stage materials any way you want. But you cannot ask for help from your assessor or anybody during the setup. You must tell your assessor when you are ready to start. Only then will your assessor start the timer.
9	Your assessor will tell you when you have 10 minutes left on the timer.
10	Your assessor will tell you when the time ends, and you must stop. If you finish your task before the timer ends, tell your assessor you are finished.
11	As mentioned, you must fasten all metal flashings or accessories following the patterns and instructions provided. If the materials provided to you have pre-punched fastening holes or pre-marked fastener locations, do not use them unless they conform with the fastening patterns and instructions.
12	Your assessor will read your assigned tasks. These tasks are not provided in any particular order. You can perform them in any order you think is best within the allotted time. Your assessor can repeat any instruction for you at any time during the exam if you ask, but you cannot ask questions about how to do any part of the work or ask for help in any way to complete the assignment.
13 HIGH!	Install on Edge A of the mockup a 5-inch Style A box gutter using two pieces with a minimum 1/8 of an inch per foot slope and fastened to the fascia a maximum of 12 inches on center using self-piercing 1 1/2-inch-long pancake-head screws. Set the gutter ends even with Edge B and with the inside edge of Wall E. You may slope the gutter in either direction. See Diagram 1.
14 HIGH!	Assemble the two gutter pieces with a minimum 3-inch overlapped joint, riveted 2 inches on center. No end caps are required.
15	Install one 4-inch outlet tube located 6 inches on center from the gutter end secured with two rivets on each long side plus one rivet on each short side.
16	Install L-style gutter brackets spaced a maximum of 30 inches on center. Fasten each bracket to the outer gutter lip with one rivet and into the fascia substrate through the gutter using 1 1/2-inch-long self-piercing pancake head screws.
17	Install an L-type drip edge metal gutter flashing in two pieces and overlap a minimum of 3 inches at the joint. Fasten the deck flange using 1 1/4-inch-long roofing nails staggered a maximum of 3 inches on center.
18	Identify all areas that require applying sealant during the gutter installation process.

19	Install on Edges B and C a continuous cleat with a 1/2-inch gap between pieces to accept an A-type embedded edge metal flashing. Fasten the cleat face using 1 1/4-inch-long roofing nails spaced a maximum of 6 inches on center and located 1 3/4 inches above the hem break. See Diagram 2.
20 HIGH!	Install the A-type embedded edge metal flashing using three pieces secured to the continuous cleat. Fasten the flashing through the deck flange using 1 1/4-inch-long roofing nails staggered a maximum of 3 inches on center. Miter the outside corner using two pieces. Abut the edge metal into the face of Wall D. See Diagram 2.
21	Cut, fold and close the open end of the A-type perimeter edge metal at the gutter edge.
22	Install a concealed backer plate at the A-type embedded edge metal joint. See Diagram 2.
23 HIGH!	Install a continuous L-cleat on the exterior side of Walls D and E with a 1/2-inch gap between pieces to accept a new coping, fastened using 1 1/4-inch roofing nails spaced a maximum of 6 inches on center and located 1 inch above the hem break. See Diagram 3.
24 HIGH!	Install new coping sections on the parapet walls secured to the cleat and fastened at the inside wall using 1 1/2-inch self-piercing screw fasteners spaced a maximum of 18 inches on center. See Diagram 3.
25 HIGH!	Turn the lower coping section of Wall E up the vertical side at the elevation change a minimum of 4 inches. Install a separate piece of coping to cover the vertical side. Fasten the vertical piece at the inside wall with one 1 1/2-inch self-piercing screw fastener. Miter cut the inside and outside coping flanges where the vertical piece overlaps the lower coping section. Fasten the inside and outside coping flanges to the underlying flange with one pop rivet. See Diagram 4.
26 HIGH!	Install the upper coping section on Wall E in one piece from the outside corner to the elevation change. Field form and install a minimum 1-inch-high overlapping standing-seam joint to miter the outside corner. Field fabricate a coping end cap at the top of the elevation change, folded down and over the vertical coping piece. Insert the end cap tabs under the inside and outside coping faces. Fasten the end cap tabs with one pop rivet. See Diagrams 4 and 5.
27	Field fabricate a 2-inch-wide x 10-inch-long drive cleat using any color scrap metal. Then, install one coping joint using a drive cleat at either Wall D or E. See Diagram 6.
28	Field form and install one coping joint using a cover plate at either Wall D or E. See Diagram 7.
29	Remove protective masking film from all metal components as your work progresses.
30	And remember, you must perform all work while remaining on the roof deck as though you were working on a roof.



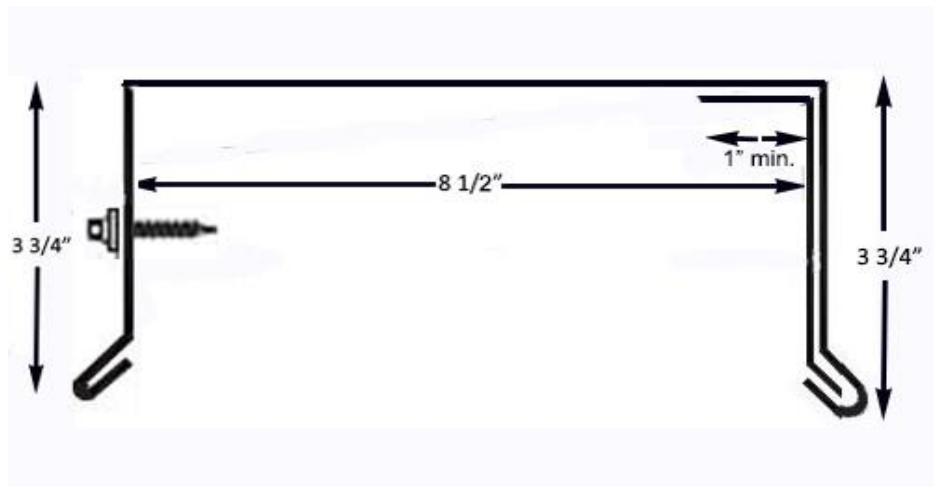
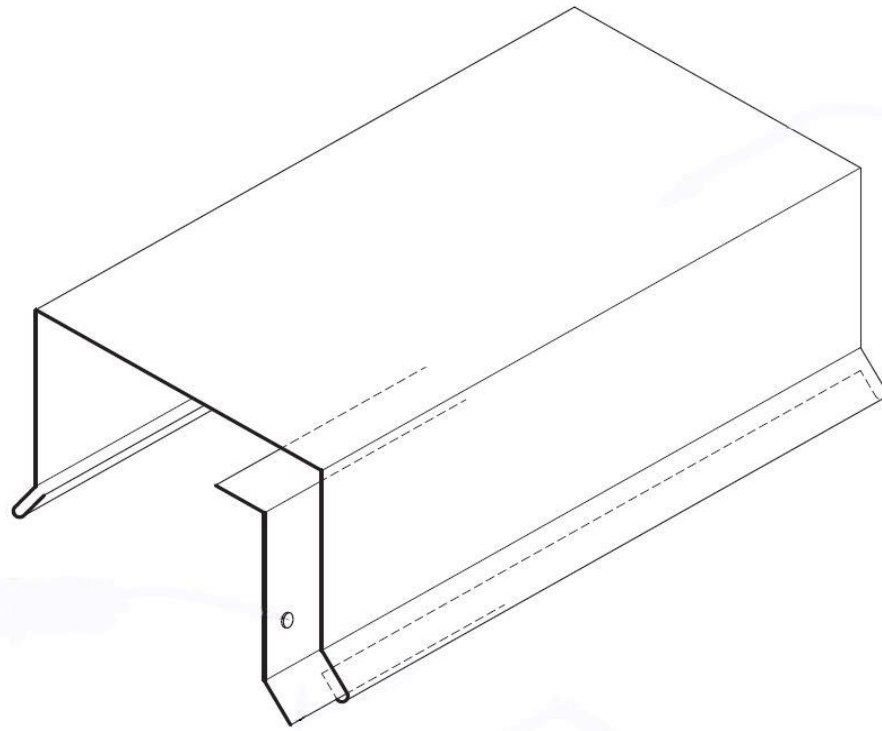
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DIAGRAM 1: MOCKUP and GUTTER WITH L-TYPE DRIP EDGE METAL



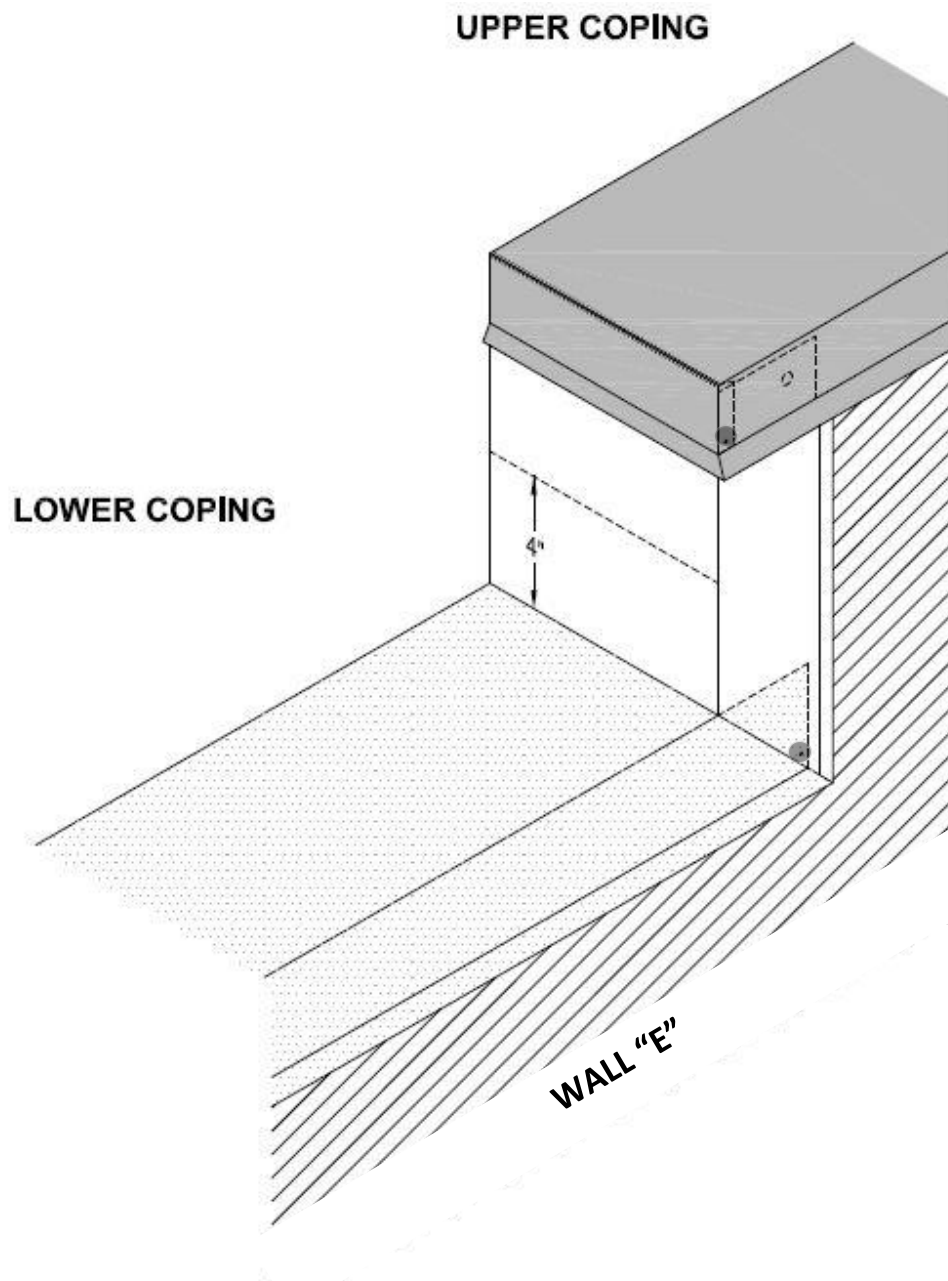
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**DIAGRAM 2: A-TYPE EMBEDDED EDGE METAL WITH CONTINUOUS
CLEAT and BACKER PLATE SEAM**



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DIAGRAM 3: COPING WITH L-CLEAT

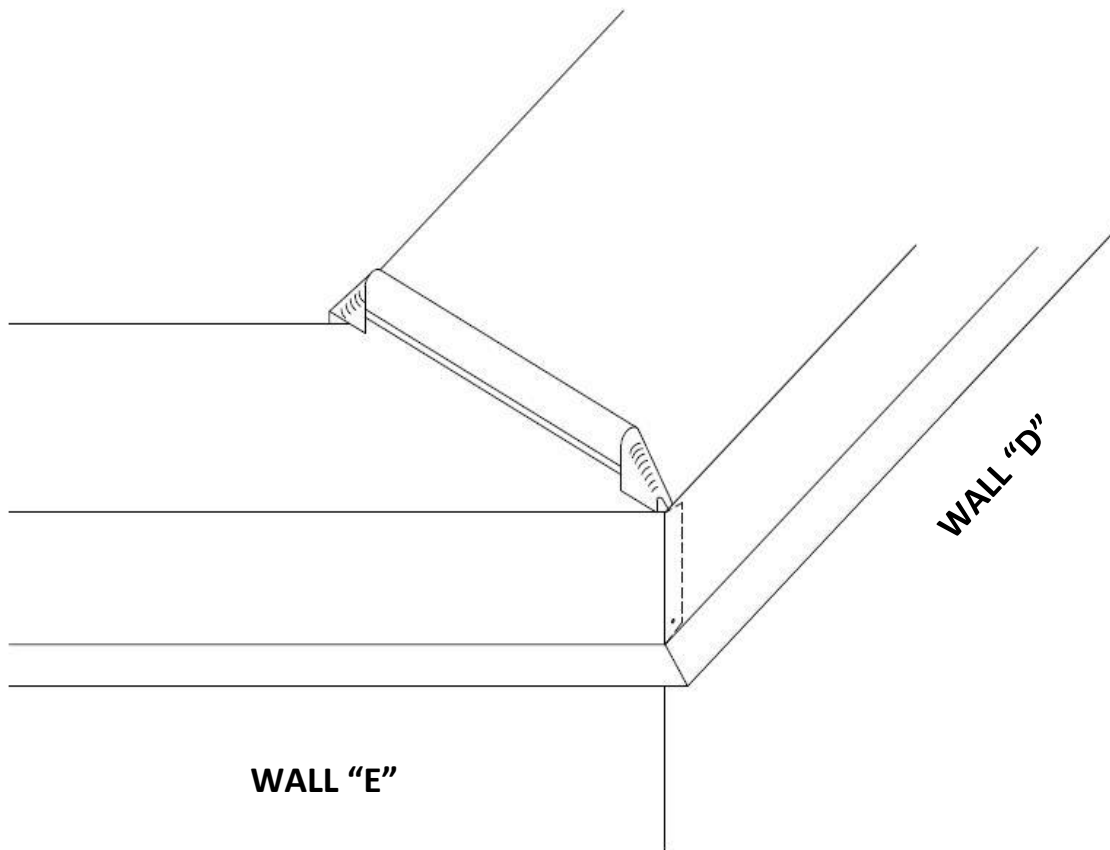
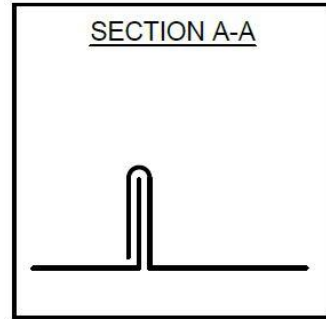


L-CLEAT NOT SHOWN FOR CLARITY



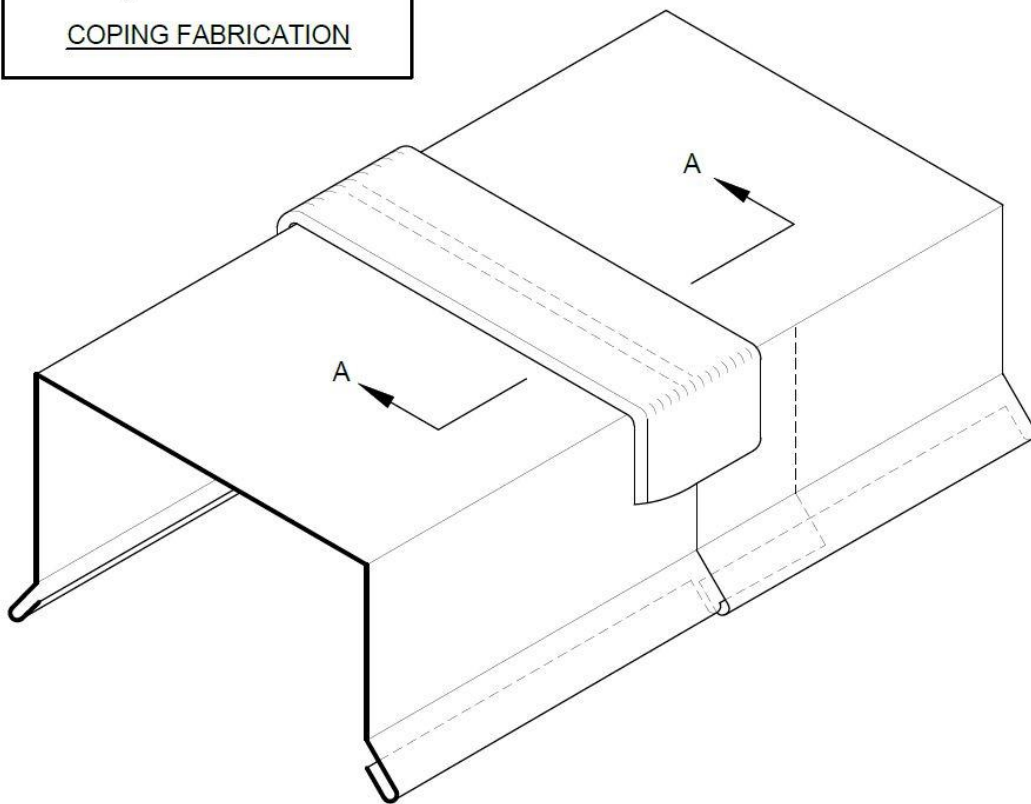
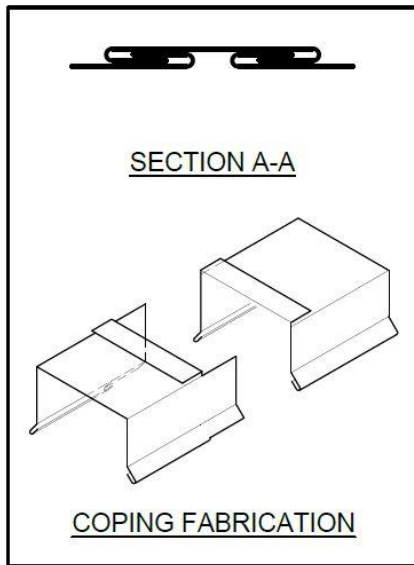
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**DIAGRAM 4: WALL "E" COPING ELEVATION CHANGE
and END CAP**



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**DIAGRAM 5: OVERLAPPING STANDING SEAM FOR
COPING OUTSIDE MITER CORNER**



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DIAGRAM 6: DRIVE CLEAT SEAM FOR COPING