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STONE VENEER
SQUARE PENETRATION - OVERALL DETAIL

NOTE: THE PRESENCE OF A CONTINUOUS RELIEVING ANGLE AND FLASHING AS SHOWN IS NOT REPRESENTATIVE OF TYPICAL STONE VENEER CONSTRUCTION, AND IS INTENDED TO CONVEY THE IMPORTANCE OF DESIGNING AN ANCHORING SYSTEM THAT MINIMIZES OR ELIMINATES THE NEED FOR PENETRATIONS THROUGH THE FLASHING IN CAVITY-TYPE EXTERIOR WALL CONSTRUCTION.
NOTE: ENSURE ALL SHEATHING/CONCRETE/CMU SURFACES ARE PROPERLY PREPARED AND PRIMED IN ACCORDANCE WITH THE MANUFACTURER REQUIREMENTS PRIOR TO INSTALLING THE WALL DRAINAGE PLANE PRODUCT. DETAIL THE DRAINAGE PLANE PRODUCT TO PREVENT WATER INFILTRATION AT THE STONE VENEER ANCHORS AND OTHER PENETRATIONS. THE VARIOUS PRODUCTS THAT CAN BE USED FOR THE DRAINAGE PLANE MATERIAL HAVE A WIDE RANGE OF AIR AND VAPOR PERMEANCE VALUES; SEE THE TABLES AND THE GENERAL SECTION CONTAINED WITHIN THE WALL PORTION OF THE WBDG FOR MORE SPECIFIC INFORMATION WITH REGARDS TO VAPOR RETARDERS AND AIR BARRIERS.

STEP 1:
INSTALL GLASS MAT FACED EXTERIOR SHEATHING OVER BACK-UP WALLS. INSTALL FOLLOWING ALL MANUFACTURER INSTRUCTIONS.

INSTALL HORIZONTAL JOINT SEAL (PEEL-AND-STICK MEMBRANE SHOWN) SECURE PER MANUFACTURER INSTRUCTIONS. ENSURE ALL SURFACES ARE PRIMED PRIOR TO INSTALLING HORIZONTAL JOINT SEAL. THE LOCATION OF THE JOINTS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE INTENDED TO CONVEY EXTERIOR SHEATHING JOINT SEALING CONCEPTS. MAKE CUTOUT FOR PENETRATION. MINIMIZE SIZE OF OPENING WHILE ALLOWING FOR ADJUSTMENT OF EQUIPMENT/DUCT/ETC.

INSTALL WALL MEMBRANE PRODUCT BELOW THE RELIEVING ANGLE OR INDIVIDUAL RELIEVING CONNECTIONS. INDIVIDUAL CONNECTIONS ARE TYPICALLY USED INSTEAD OF A FULL RELIEVING ANGLE. THE WALL DRAINAGE PLANE PRODUCT SHOULD BE CARRIED BEHIND THESE CONNECTIONS AND CARRIED ABOVE THEM A MINIMUM OF 6-INCHES. SEE THE 2-DIMENSIONAL DETAILS CONTAINED WITHIN THE STONE SECTION IN THE WBDG FOR MORE INFORMATION. THE JOINT BETWEEN THE SHEATHING AND SLAB IS TO BE SEALED WITH A HORIZONTAL JOINT SEAL (SELF-ADHESIVE FLASHING) TO PROVIDE AIR BARRIER CONTINUITY AT THIS INTERFACE. DEPENDING ON THE DRAINAGE PLANE PRODUCT, THIS PRODUCT MAY BE USED TO PROVIDE FOR THE AIR BARRIER CONTINUITY AT THIS INTERFACE. A DETAIL SHOULD BE INCLUDED IN THE DRAWINGS FOR THE PROJECT SHOWING WHAT METHOD IS TO BE USED AT THIS INTERFACE TO PROVIDE AIR BARRIER CONTINUITY. THE DETAILS IN THIS SET SHOW THIS USING THE DRAINAGE PLANE PRODUCT.

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**STONE VENEER SQUARE PENETRATION - STEP 3**

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STONE VENEER SQUARE PENETRATION - STEP 4

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STONE VENEER SQUARE PENEration

STEP 6
INSTALL PEEL-AND-STICK BARRIER MEMBRANE (AIR AND BULK WATER BARRIER) BELOW AND SECURE TO EQUIPMENT/DUCT/ETC. CARRY UP ONTO THE EQUIPMENT/DUCT/ETC. A MINIMUM OF 3 INCHES, OR AS RECOMMENDED BY MANUFACTURER, WHICHEVER IS GREATER.

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STEP 8:
INSTALL PEEL-AND-STICK BARRIER MEMBRANE (AIR AND BULK WATER BARRIER) ABOVE EQUIPMENT AND SECURE TO EQUIPMENT/DUCT/ETC. CARRY UP ONTO THE EQUIPMENT/DUCT/ETC. A MINIMUM OF 3-INCHES AND OVERLAP ONTO SECTIONS AT SIDES A MINIMUM OF 3-INCHES, OR AS RECOMMENDED BY MANUFACTURER, WHICHEREVER IS GREATER.

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STONE VENEER SQUARE PENETRATION - STEP 9

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STEP 10:
INSTALL THE MEMBRANE FLASHING ABOVE THE METAL THROUGH-WALL FLASHING AND SECURE WITH A CONTINUOUSLY SEALED TERMINATION BAR AT THE UPPER EDGE. INSTALL FOLLOWING ALL MANUFACTURER GUIDELINES. CARRY ON THROUGH-WALL FLASHING PER THE MANUFACTURERS MINIMUM DISTANCE PLUS 1-INCH AND SECURE PER MANUFACTURER REQUIREMENTS. TREAT ALL JOINTS AND EDGES PER MANUFACTURER REQUIREMENTS (MASTIC OR OTHER REQUIRED PRODUCT) AND OVERLAP ALL JOINTS A MINIMUM OF 2-INCHES MORE THAN THAT REQUIRED BY THE MANUFACTURER.

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STEP 11:
INSTALL THE WALL MEMBRANE ABOVE THE THROUGH-WALL FLASHING, SECURE AT PENETRATION PER THE MANUFACTURER’S GUIDELINES. CARRY ONTO THROUGH-WALL FLASHING AND EQUIPMENT OR EQUIPMENT SLEEVE PER THE MANUFACTURERS MINIMUM DISTANCE PLUS 1-INCH AND SECURE PER MANUFACTURER REQUIREMENTS.

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STONE VENEER SQUARE PENETRATION -
STEP 12

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STONE VENEER SQUARE PENETRATION - STEP 13

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Interface conditions between building envelope materials, components and systems should be fully detailed in a manner that is both technically sound and serviceable. Detailing should, at a minimum, allow for coordination of drainage planes when two or more different wall types are used in the same facade; allow for thermal and moisture-induced changes in material properties and differential thermal movement; and allow for in-service deflection, shrinkage, creep and similar behavior considered to be within the allowable structural limits of the project without compromise to the weather-tight integrity and thermal performance of the building envelope.

The air barrier can either be formed by employing the interior side airtight drywall approach or an exterior side air barrier.

The location of or need for a vapor retarder within wall assemblies will vary based upon climate, and can be significantly influenced by the storage capacity and vapor permeance of the materials selected for each layer of the wall system. A climate-specific, hygrothermal analysis for any wall assembly should be considered to further evaluate this concern.

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STONE VENEER SQUARE PENETRATION - STEP 15

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STONE VENEER SQUARE PENETRATION - STEP 16

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**KEY CONCEPTS:**

**STEP 17:** Install backer rod and sealant at all joints and at the penetration. Twisted and undersized backer rod must not be used. Prime joints, if required by the manufacturer. Ensure the sealant profile will meet the manufacturer requirements. The joint at the flashing will require weep holes, approximately every 2-feet. Vented weeps may be used at vertical stone joints. Alternatively, the joint can be left open. Ensure any UV sensitive membrane material is back far enough to not UV degrade if the joint is left open. All joint sealant in contact with natural stone cladding shall be tested prior to construction for adhesion, movement capacity, and stain response in accordance with applicable ASTM standards. Conduct field peel adhesion testing of installed joint sealant by a qualified technical representative of the sealant manufacturer.

**STONE VENEER SQUARE PENETRATION - STEP 17**

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STONE VENEER
SQUARE PENETRATION
STEP 18

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