

SUPPLEMENTAL INFORMATION

VERTICAL SURFACES / INTERIOR STONE WALL CLADDING

SECTION 1. INTRODUCTION

1.01 Installation Methods. There are several methods by which interior stone cladding can be installed. Consideration should be given to the various features of each method in making a selection for a particular installation. See detailed illustrations of examples at the close of this section.

For additional information, refer to Chapter 13 Installation – General Information.

1.02 Geographic Methods. Some installation methods and materials are not recognized and may not be suitable in some geographic areas because of local trade practices, building codes, climatic conditions, or construction methods. Therefore, while every effort has been made to produce accurate guidelines, they should be used only with the independent approval of technically qualified persons.

1.03 General Precautions. During construction, the General Contractor shall protect all stone from staining and damage.

SECTION 2. DESIGN CRITERIA

2.01 Stone Size and Thickness. Most dimension stones, as defined by ASTM C119, are suitable for interior cladding. Stone panel size and thickness are closely interrelated with the type of stone being installed and its particular engineering qualities. Generally, consideration for greater stone thickness should be made for larger-sized stones (over 12 sq ft) set at higher elevations, and more fragile stones, with the exception of natural stone veneer panels with integrated reinforced backers, which have a limited availability of up to 5' x 10'.

2.02 Installation. Stone wall facing panels may be installed either by conventionally set method using nonstaining anchors, dowels, pins, cramps, wire, and mortar spots; nonstaining adhesive in securing thin tile units to interior vertical surfaces; or by one of the several mechanical methods.

2.03 Physical Property Values. Final design should always be based on specific physical property values of the stone. These values are available from the Stone Supplier.

SECTION 3. MECHANICAL SYSTEMS

3.01 Performance Criteria. The Specifying Authority must determine the performance criteria of the mechanical system to be employed.

3.02 Engineering. A knowledgeable and experienced Installer must be engaged to engineer and fabricate a system that will satisfy the functional and aesthetic requirements of the project.

3.03 Anchorage systems must be securely attached and located as shown on the approved shop drawings and shall be plumb and in true plane.

3.04 Assembly/Installation Systems. A number of proprietary assembly and installation systems are available.

3.05 Panel Installation. Stone panels must be installed to the mechanical system in the prescribed manner, with vertical lines plumb and horizontal lines level.

3.06 Conditions. In all conditions, the substrate must be installed sufficiently true and level so that the stone panels

or tiles may be installed true and level and sufficiently rigid to ensure a satisfactory backup surface to the stone installation. (Industry standard: 1/8" in 10'-0" with no more than 1/32" between individual stones.)

3.07 Masonry Backup. May be poured- in-place concrete, hollow concrete block, brick, or other solid masonry surface. Normally, stone installation with this substrate will be set with a cavity.

3.08 Metal Studs. Must be 16 gauge or thicker. Stone anchors may attach directly to the studs, or a horizontal track component may be used to carry the load of the anchor to several studs. May use plywood, cementitious backer board, or gypsum board as a non-loadbearing sheathing.

3.09 Wood Studs. Stone anchors may attach directly to the studs, or a horizontal track component may be used to carry the load of the anchor to several studs. May use plywood, cementitious backer board, or gypsum board as a non-loadbearing sheathing.

3.10 Mechanical Systems. Each mechanical system is different. Follow Manufacturer's recommendations.

3.11 Wet Areas. Avoid the use of plywood or gypsum board as substrate materials. Provide a moisture barrier. Suitable substrates are masonry backup and cementitious backer board on metal or wood studs. Apply appropriate water proofing membranes to all substrates.

SECTION 4. STONE PANELS

4.01 General. Stone panels that cover a wall (wall die) or a lower portion of a wall (wainscot) are supplied in several standard as well as custom thicknesses depending on the stone, its location on the wall, and its use in the project. Normally, stone thickness of 3/4" is sufficient. In some instances of very large or fragile stones, thickness of 1-1/4" or greater may be necessary.

4.02 Base. The base may be in coplanar position with the wainscot or die or be offset so that a portion or all of the top edge of the base stone remains prominent. It may be profiled or otherwise decorated to achieve architectural effect. The base must be separated from the floor with a "soft" joint appropriately sized to accommodate anticipated building movements and prevent damage to either the horizontal or vertical surface.

4.03 Installation. Stone panels may be solid set or standard set (with a cavity) to the substrate. Normally, standard set is the more economical method, and is most commonly employed. The solid-set method is seldom used, except for installing wainscot or in certain wet or special circumstance area conditions. In the standard-set method, space allowed between the substrate and the back face of the stone may be as little as 1". Wider spaces over 2" should have strap anchors instead of twisted-wire anchors.

4.04 Weight Relief. Stone panels should have their weight relieved when spanning openings over windows or doors, at all floor lines, at any expansion joints in the substrate, or at 12' to 15' intervals in height.

SECTION 5. STONE TILE

5.01 Color Differential. Stone tiles are subject to manufacturing processes different than other dimension stones and natural stone veneer panels. There is greater latitude in

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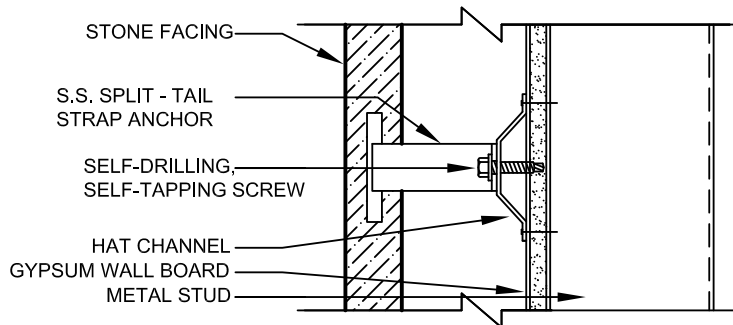
the acceptability of shaded stones, and Installers should obtain approval of the stone layout prior to installation.

- 5.02 Installation.** Stone tile may be installed in almost any location for which stone panels are considered. The exception is for elevations higher than 15'-0", which require anchors. Thin stone tiles are not suitable for use with anchors. Stone tile may be installed in a full mortar bed, in a thin-set mortar bed, or with an approved adhesive.
- 5.03 Back Buttering.** For all applications, the stone tile shall be back buttered to achieve, as close as practical, 100% adhesive contact between the stone and the backup.
- 5.04 Size.** Tile patterns shall be laid out so that no perimeter tile is less than 1/2 the width of the typical stone tile, except at the front of cutouts.
- 5.05 Substrates.** Suitable substrates for stone tile are masonry, cementitious backer board, and gypsum board. Do not use gypsum-based products in wet areas.
- 5.06 Fire Rating.** Two (2) layers of gypsum board are required in elevator shaft walls and where a fire rating is required.

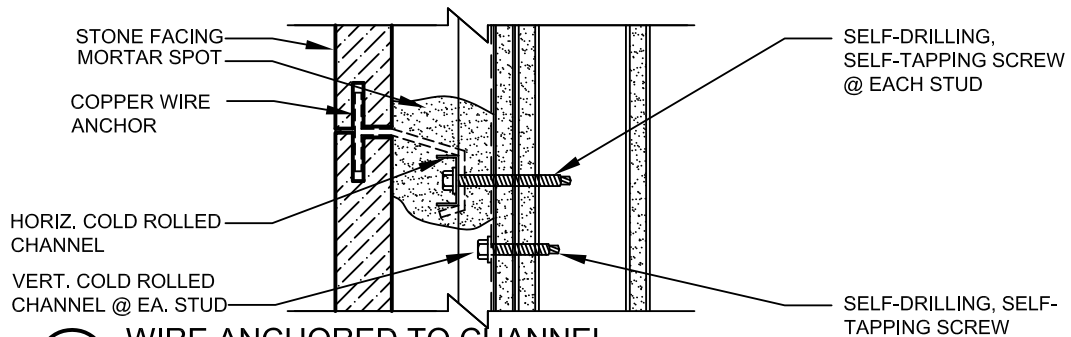
SECTION 6. LIGHTWEIGHT NATURAL STONE VENEER PANELS

- 6.01 Definition.** This product is a bi-material panel using a thin (± 5 mm) stone face adhesively bonded to a lightweight aluminum backer. Most stone varieties and finishes are available, although each manufacturer has several preferred stones available in their offerings.

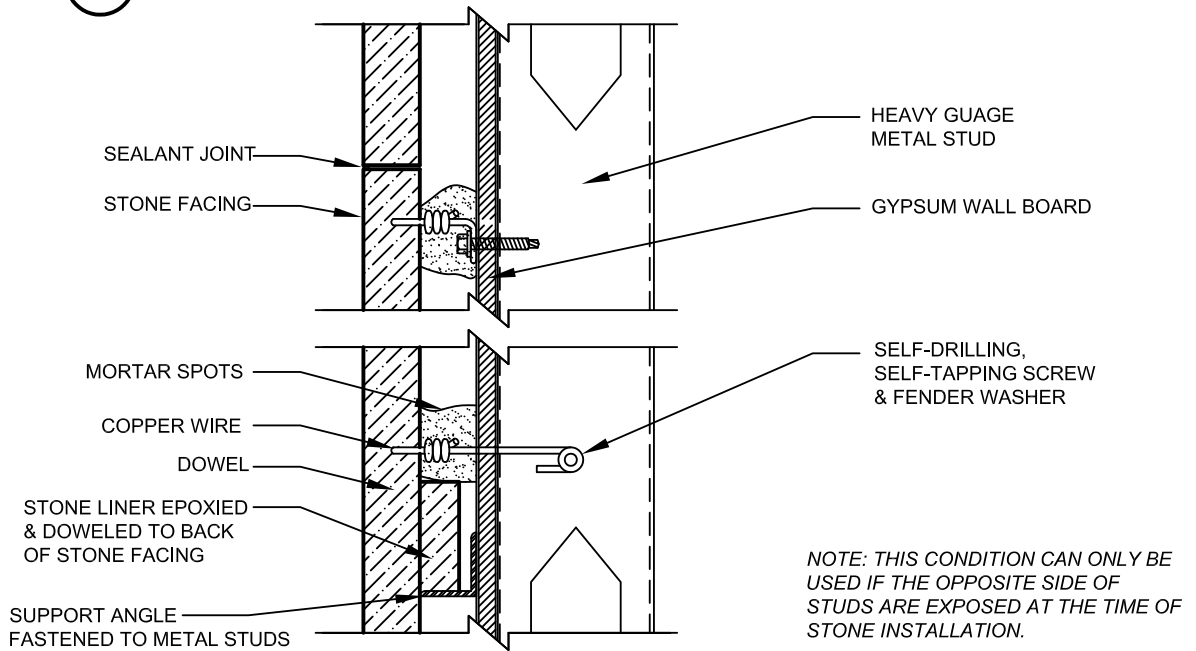
SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



1 STRAP ANCHORED TO METAL STUDS



2 WIRE ANCHORED TO CHANNEL



3 WIRE ANCHORED TO METAL STUDS

NOTE: THIS CONDITION CAN ONLY BE USED IF THE OPPOSITE SIDE OF STUDS ARE EXPOSED AT THE TIME OF STONE INSTALLATION.



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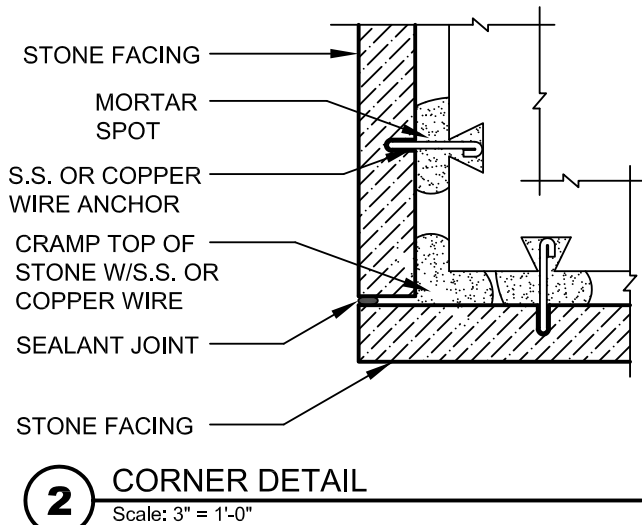
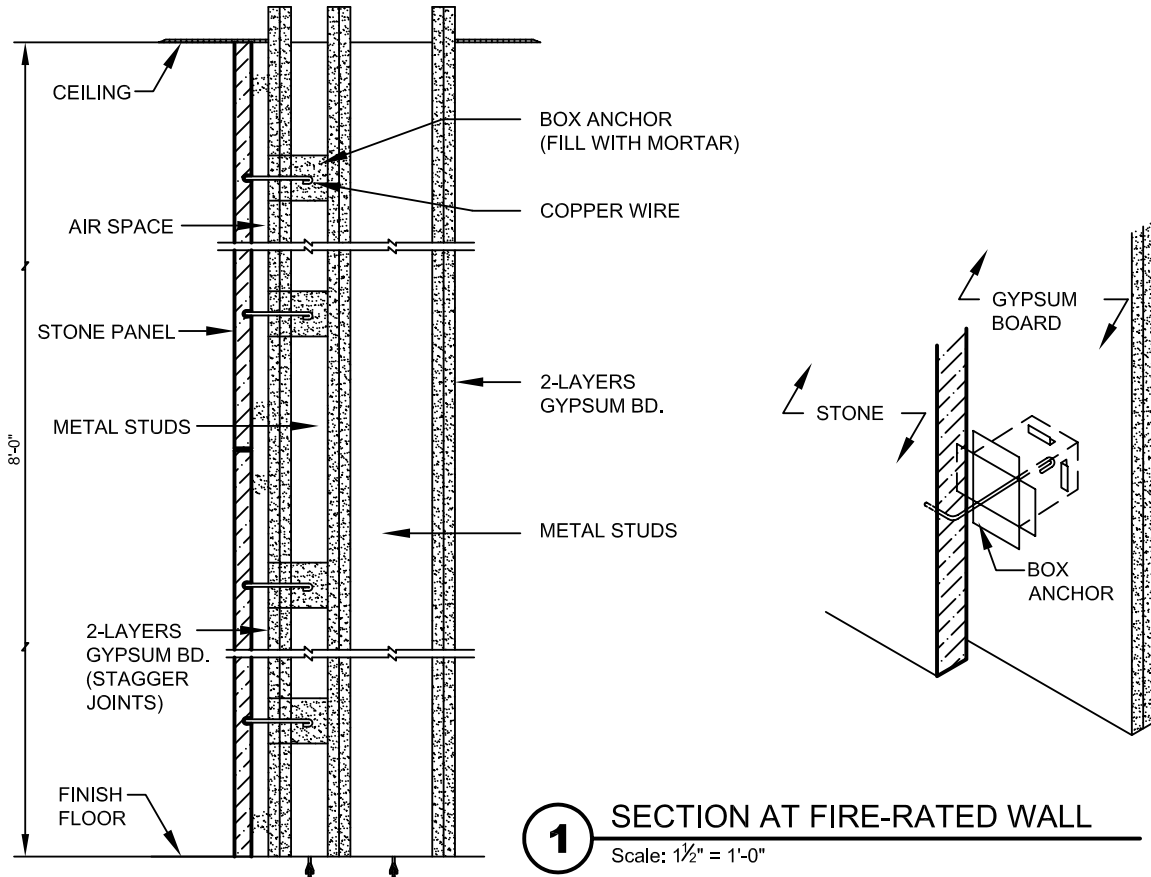
INTERIOR STONE WALL CLADDING WALL FACING DETAILS

MIA DIMENSION STONE DESIGN MANUAL VII

DRWG NO: 15-D-11

SCALE:
3" = 1'-0"

SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



NOTE: 1½" SETTING SPACE REQUIRED WHEN MARBLE LINERS ARE NOT EMPLOYED.



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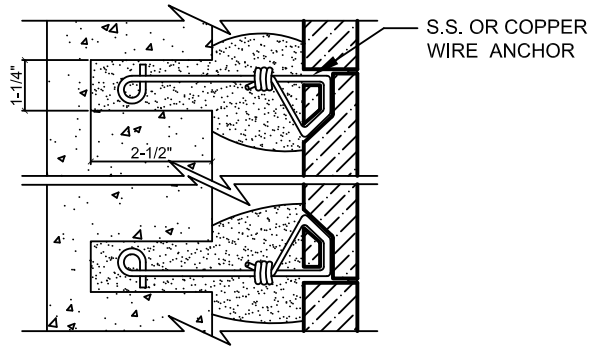
INTERIOR STONE WALL CLADDING WALL FACING DETAILS

MIA DIMENSION STONE DESIGN MANUAL VII

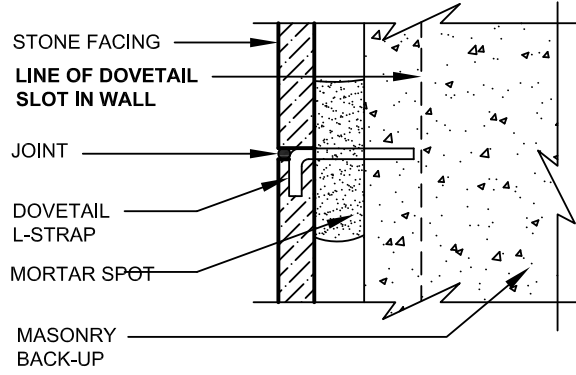
DRWG NO: 15-D-12

SCALE:
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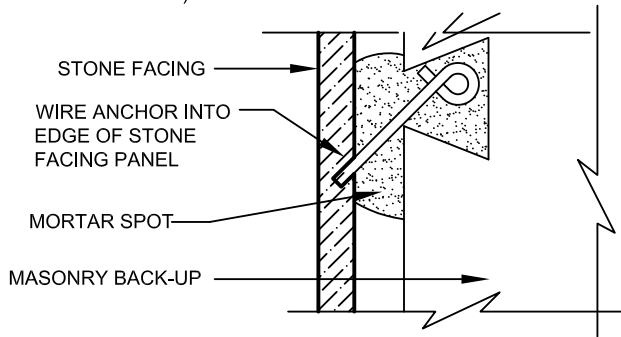
SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



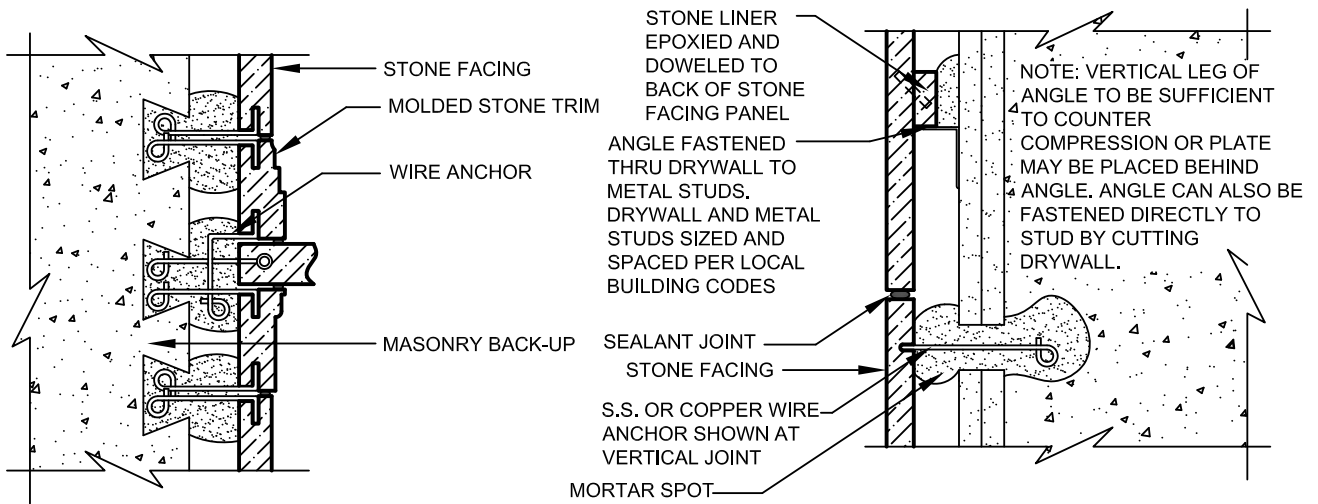
1 **WIRE LACE ANCHOR**
(TO BE USED ONLY WHERE EDGE CONDITION IS NOT AVAILABLE FOR ANCHORING)



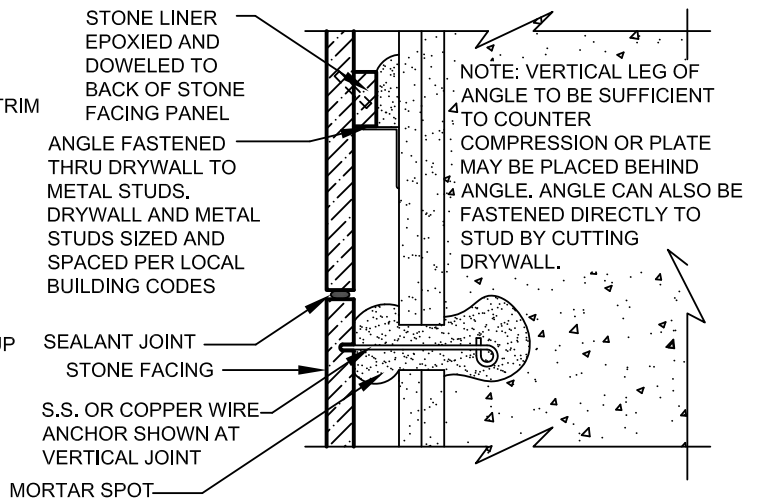
2 **DOVETAIL ANCHOR IN MASONRY**



3 **WIRE ANCHOR IN MASONRY**



4 **WIRE ANCHORED MOULDED TRIM**



5 **WIRE ANCHORED TO METAL STUDS**

NOTE: 1-1/2 INCH SETTING SPACE REQUIRED WHEN MARBLE LINERS ARE NOT EMPLOYED.



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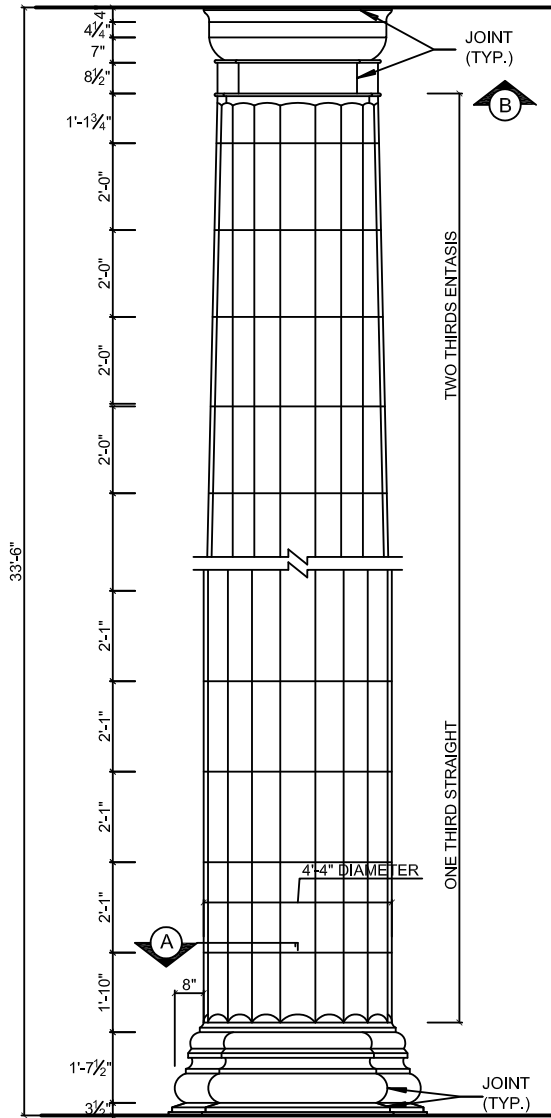
INTERIOR STONE WALL CLADDING WALL FACING DETAILS

MIA DIMENSION STONE DESIGN MANUAL VII

DRWG NO: 15-D-13

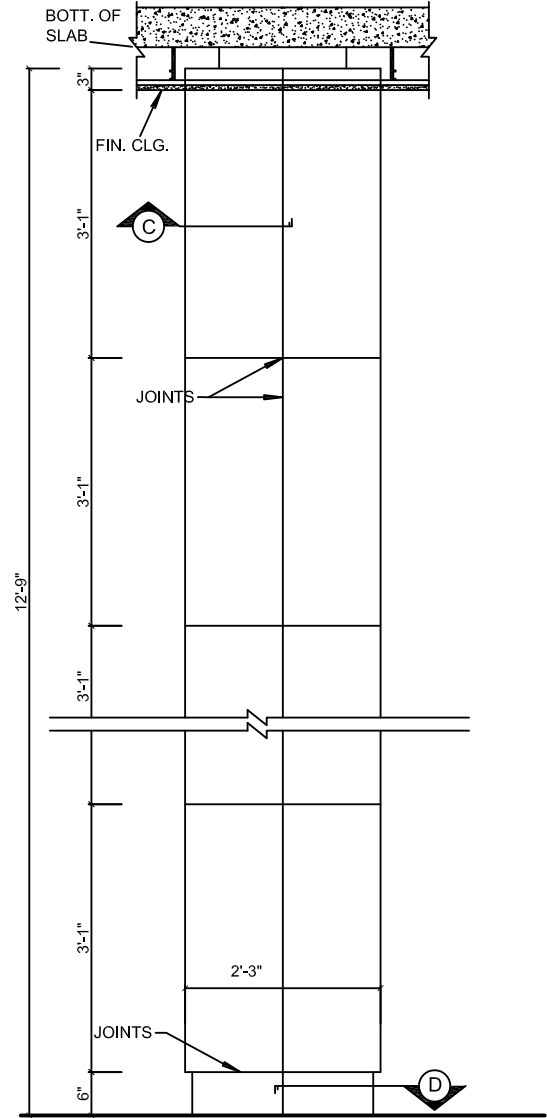
SCALE:
3" = 1'-0"

SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



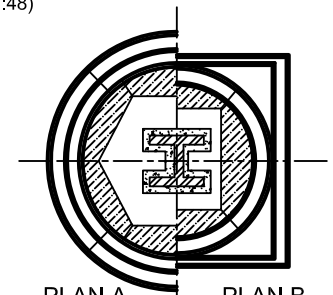
ELEVATION

1/4"=1'-0" (1:48)



ELEVATION

1/2"=1'-0" (1:24)

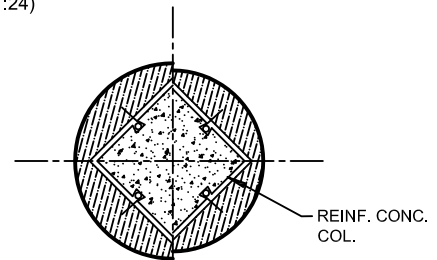


PLAN A

1/4"=1'-0" (1:48)

PLAN B

1/4"=1'-0" (1:48)



PLAN C

1/2"=1'-0" (1:24)

PLAN D

1/2"=1'-0" (1:24)

KEY TO MATERIALS:

STONE

CONCRETE

STEEL



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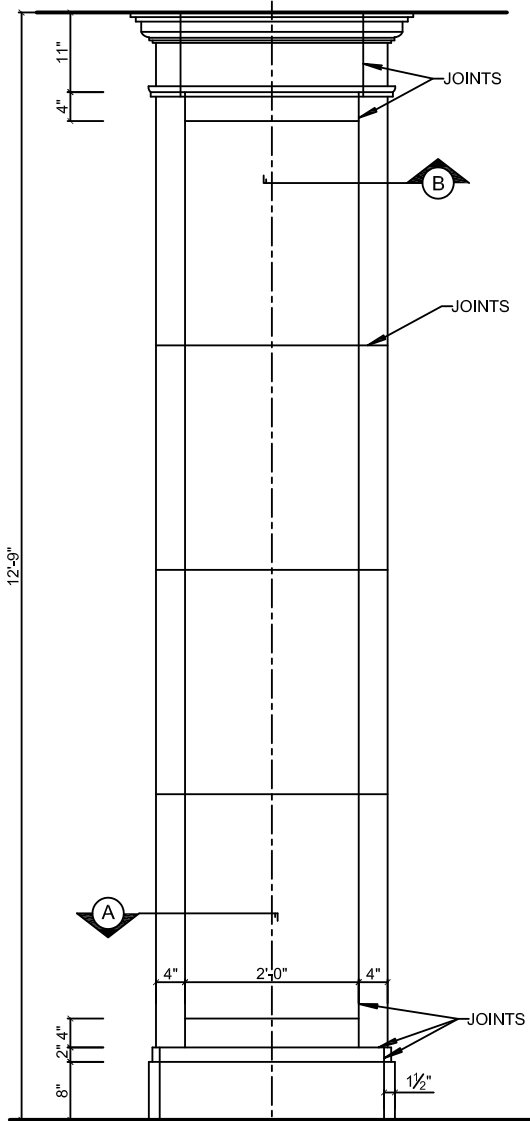
INTERIOR STONE WALL CLADDING FREE-STANDING COLUMN DETAILS

MIA DIMENSION STONE DESIGN MANUAL VII

DRWG NO: 15-D-14

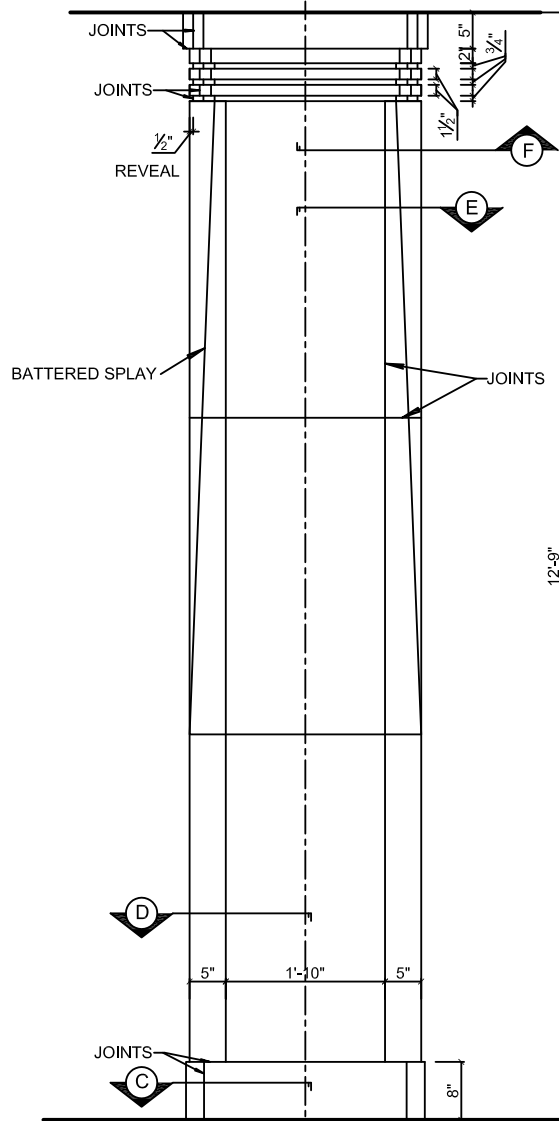
SCALE:
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SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



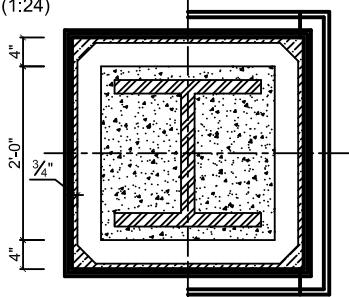
ELEVATION

1/2"=1'-0" (1:24)



ELEVATION

1/2"=1'-0" (1:24)

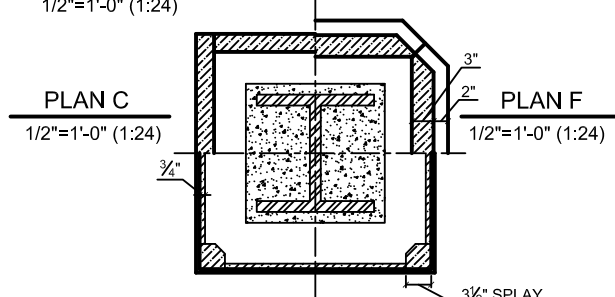


PLAN A

1/2"=1'-0" (1:24)

PLAN B

1/2"=1'-0" (1:24)



PLAN C

1/2"=1'-0" (1:24)

PLAN F

1/2"=1'-0" (1:24)

PLAN D

1/2"=1'-0" (1:24)

PLAN E

1/2"=1'-0" (1:24)

KEY TO MATERIALS:

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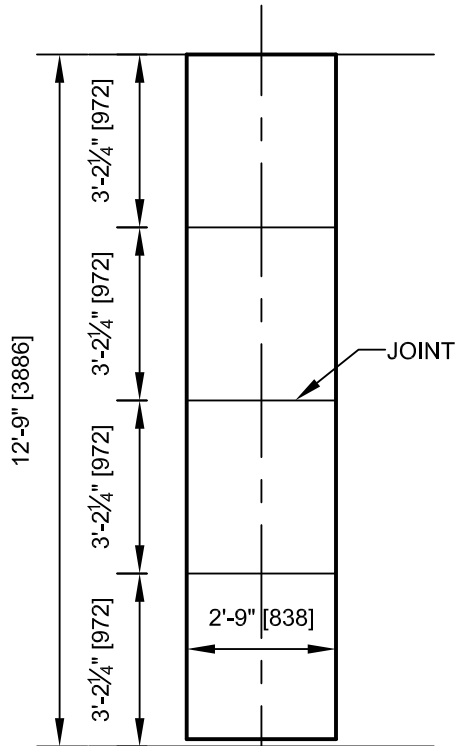
INTERIOR STONE WALL CLADDING FREE-STANDING COLUMN DETAILS

MIA DIMENSION STONE DESIGN MANUAL VII

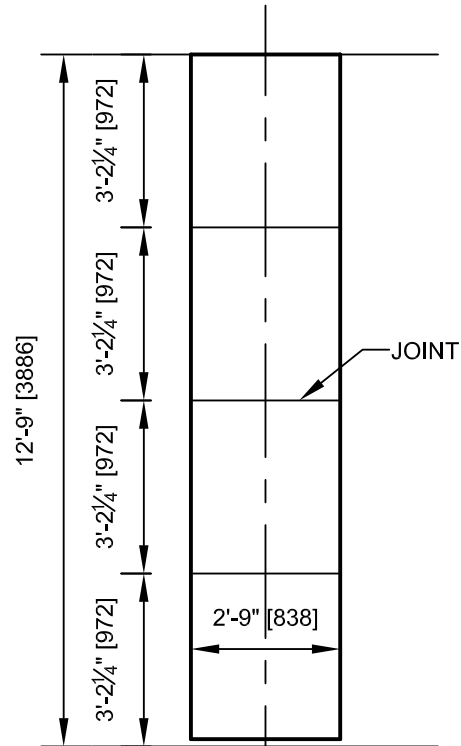
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SCALE:
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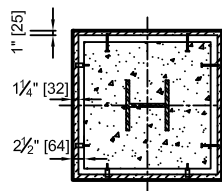
SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



SQUARE COLUMN
ELEVATION 1/2"=1'-0" (1:24)

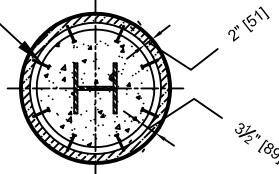


ROUND COLUMN-FOUR SECTIONS
ELEVATION 1/2"=1'-0" (1:24)



PLAN
1/2"=1'-0" (1:24)

STRAP ANCHORS, OR, SEE TYPICAL STANDARD ANCHOR SECTION FOR OTHER ANCHOR TYPES



PLAN
1/2"=1'-0" (1:24)

KEY TO MATERIALS: STONE CONCRETE STEEL



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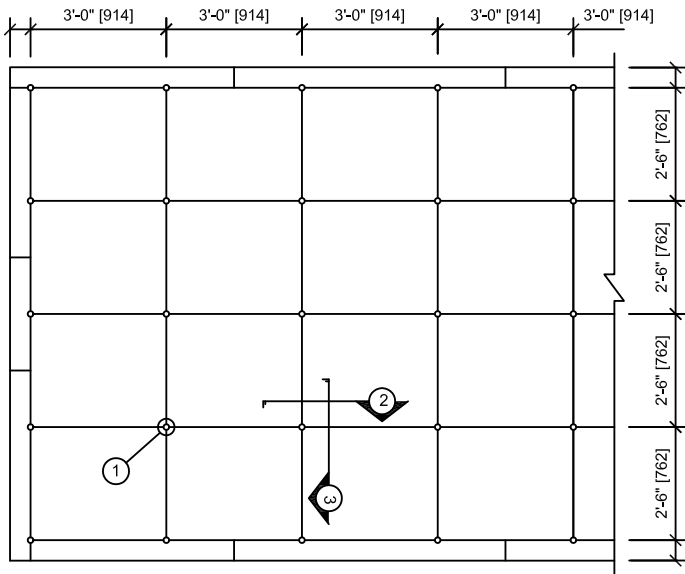
INTERIOR STONE WALL CLADDING FREE-STANDING COLUMN DETAILS

MIA DIMENSION STONE DESIGN MANUAL VII

DRWG NO: 15-D-16

SCALE:
1/2" = 1'-0"

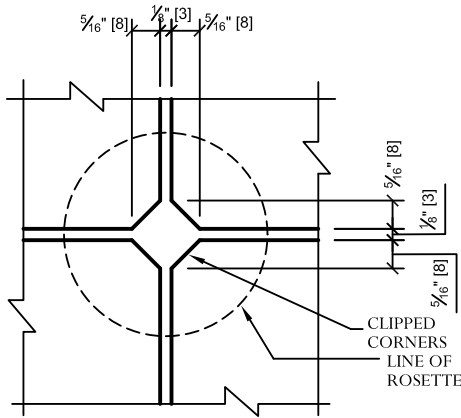
SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



NOTE: DIMENSIONS ARE TO CENTER OF 1/8" JOINTS. TOP, BOTTOM AND SIDE TRIM PIECE WIDTH VARIES.

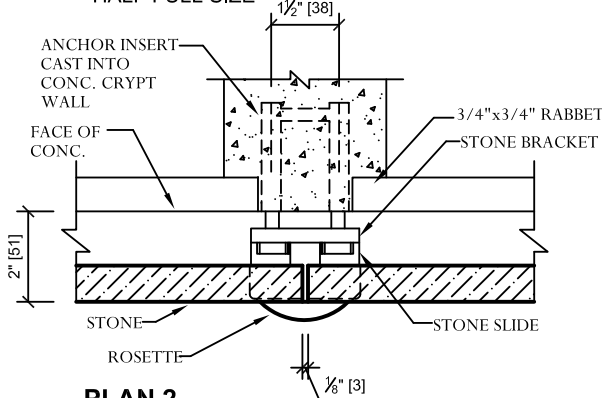
ELEVATION

1/4"=1'-0" (1:48)



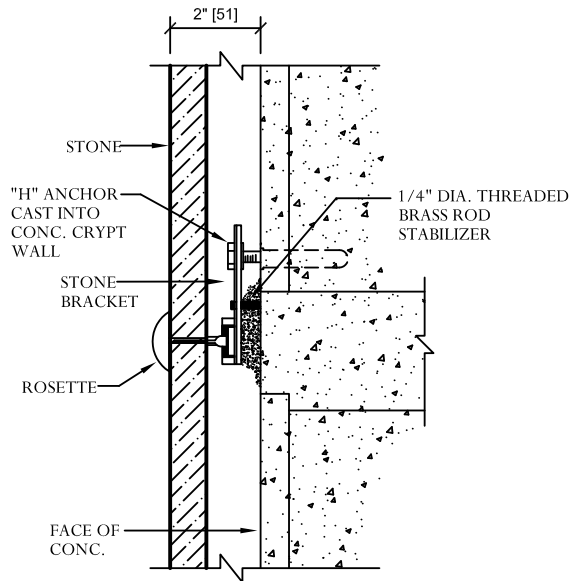
DETAIL 1

HALF FULL SIZE



PLAN 2

3"=1'-0" (1:4)



SECTION 3

3"=1'-0" (1:4)



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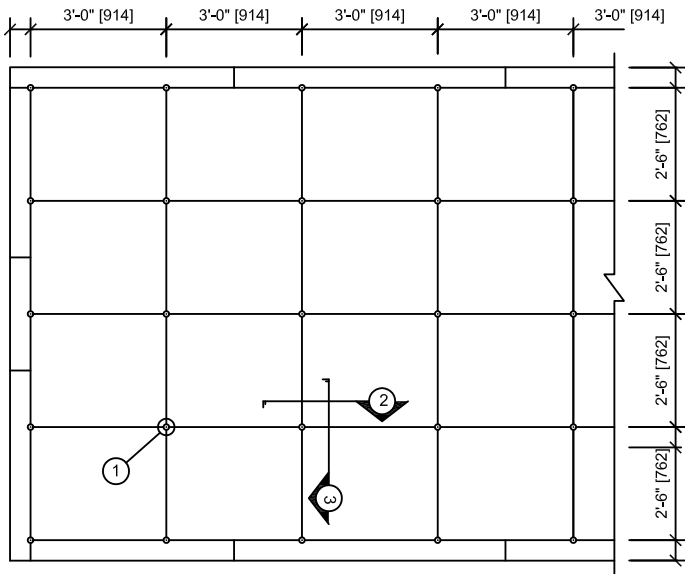
Interior Stone Wall Cladding Crypt with Bracket and Rosette Detail

MIA DIMENSION STONE DESIGN MANUAL VII

DRWG NO: 15-D-17

SCALE:
As Noted

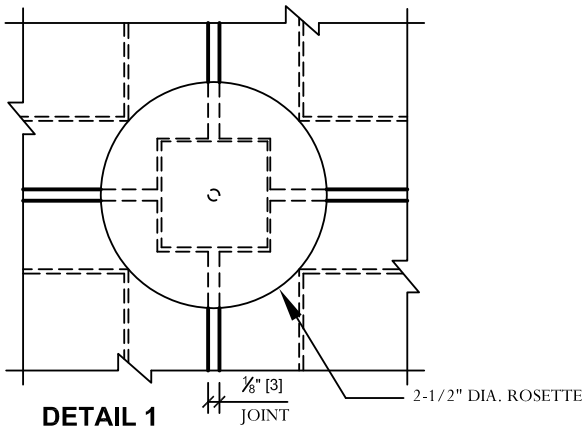
SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



NOTE: DIMENSIONS ARE TO CENTER OF 1/8" JOINTS. TOP, BOTTOM AND SIDE TRIM PIECE WIDTH VARIES.

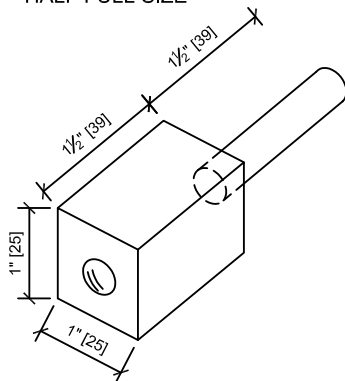
ELEVATION

1/4"=1'-0"(1:48)



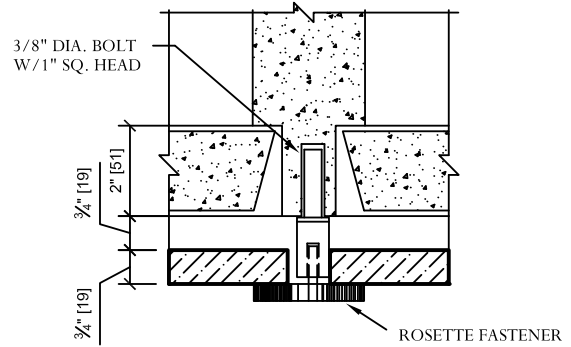
DETAIL 1

HALF FULL SIZE



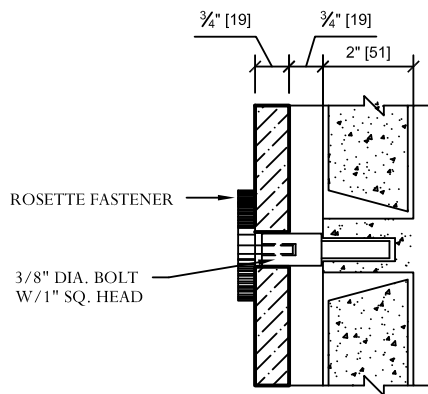
3/8" DIA. BOLT W/1" SQ. HEAD

HALF FULL SIZE



PLAN 2

3"=1'-0"(1:4)



SECTION 3

3"=1'-0"(1:4)



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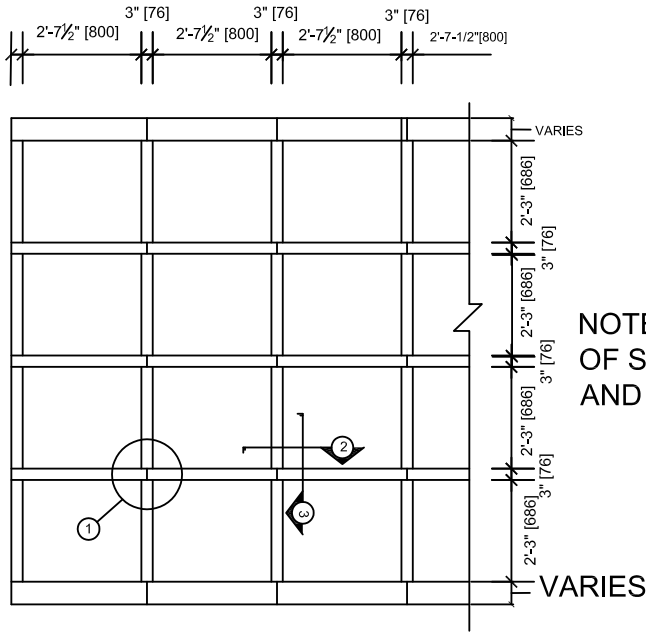
Interior Stone Wall Cladding Crypt with Bolt and Rosette Fasteners

MIA DIMENSION STONE DESIGN MANUAL VII

DRWG NO: 15-D-18

SCALE:
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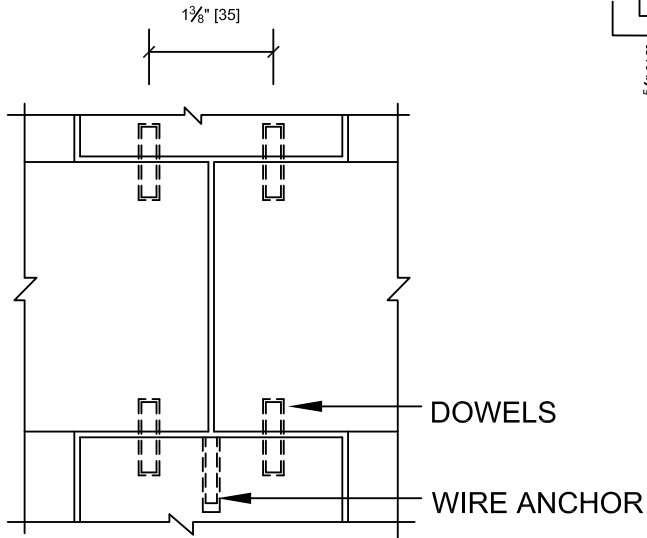
SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



NOTE: DIMENSIONS ARE TO EDGE OF STILE OR RAIL. TOP, BOTTOM AND SIDE TRIM PIECE WIDTH VARIES.

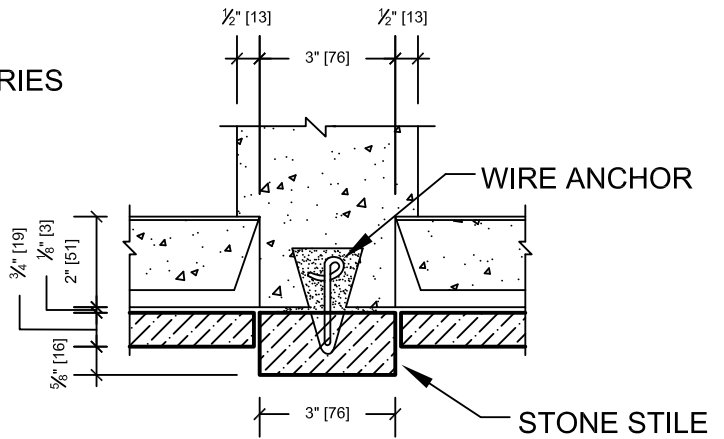
ELEVATION

1/4"=1'-0" (1:48)



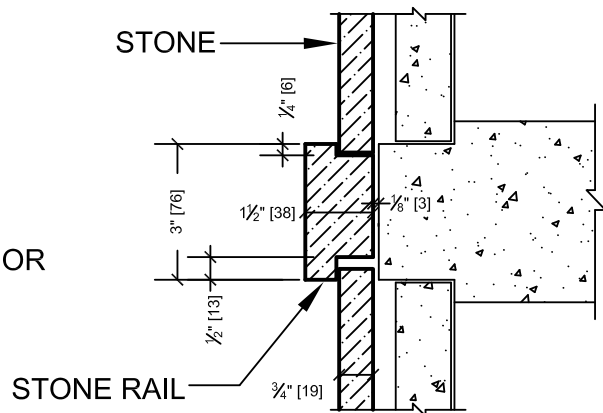
DETAIL 1

HALF FULL SIZE



PLAN 2

3"=1'-0" (1:4)



SECTION 3

3"=1'-0" (1:4)



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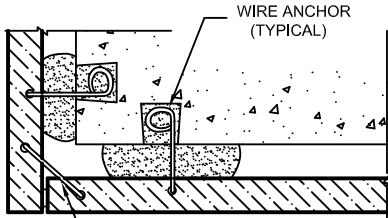
Interior Stone Wall Cladding Crypt with Stile and Rail Detail

MIA DIMENSION STONE DESIGN MANUAL VII

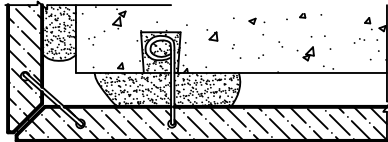
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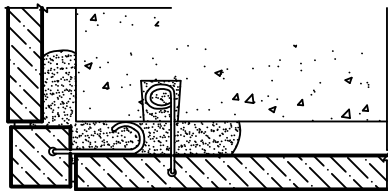
SUPPLEMENTAL INFORMATION VERTICAL SURFACES / INTERIOR STONE WALL CLADDING



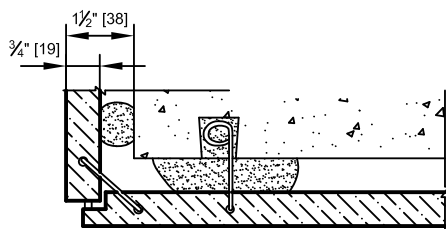
1 BUTT JOINT
EXTERNAL CORNER



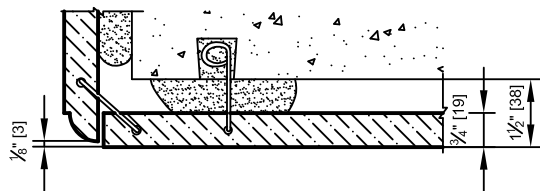
2 QUIRK MITER JOINT
EXTERNAL CORNER



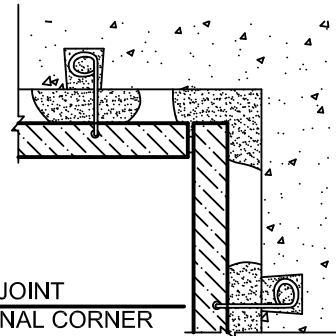
3 CORNER BLOCK JOINT
EXTERNAL CORNER



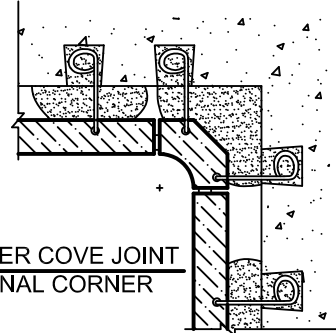
5 RABBETTED JOINT
EXTERNAL CORNER



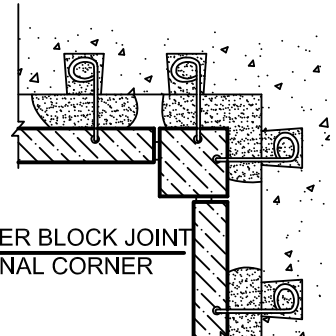
6 MOLDED JOINT
EXTERNAL CORNER



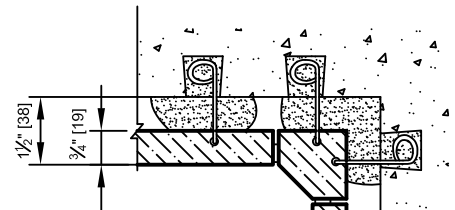
7 BUTT JOINT
INTERNAL CORNER



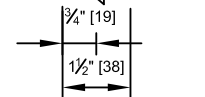
8 CORNER COVE JOINT
INTERNAL CORNER



9 CORNER BLOCK JOINT
INTERNAL CORNER



10 BEVELED BLOCK JOINT
INTERNAL CORNER



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REV	DATE
0	Aug 2006
1	Oct 2006

INTERIOR STONE WALL CLADDING CORNER DETAILS

MIA DIMENSION STONE DESIGN MANUAL VII

DRWG NO: 15-D-20

SCALE:
3" = 1'-0"