



CASTIA STONE™
DESIGN & INSTALLATION
MANUAL



**RAINSCREEN TECHNOLOGY
LOOKS AS GOOD AS IT PERFORMS.**



CASTIA STONE™ DEALER/ INSTALLATION CERTIFICATION

Castia dealers and installers are certified so you'll be satisfied. Castia Stone takes great pride in a finished project and the complete satisfaction of our customers. We manufacture a high quality product and ensure a superior Castia Stone custom design. The quality of the final installation is equally important to the product and design. For this reason, we have developed an extensive Dealer/Installation certification program which trains and certifies all our dealers and installers on Castia Stone standards for design and sales procedure as well as proper installation of Castia Stone. This certification ensures that Castia Stone is installed in accordance with our manufacturer specifications. Prior to becoming authorized and certified, dealers and installers must complete a training class and participate in hands-on training which takes place both on and off the job site. Working closely with our dealers and installers and making follow-up visits to the site allows Castia Stone to provide the highest quality workmanship and service. Castia Stone stands behind our dealers and installers, and we are dedicated to providing continual service and support to our customers.

BASIC INTRODUCTION TO CASTIA STONE™ INSTALLATION:

Castia Stone manufactures a siding system that has been used in North America since 1988. It consists of concrete tiles and trim that range in thickness from 5/8" - 4". They are attached using an embedded bracket that creates a 1/2" air space behind the tile and substrate wall. This gap allows for proper drainage and ventilation. All seams are caulked with a special commercial-grade sealant.

Castia Stone is installed over a proper vapor barrier and attached directly onto the building substrate. Unlike brick, the installation of Castia Stone does not require angle iron or other reinforcements.

Each tile has embedded brackets that have a hole at each end. This allows the tile to be installed either right-side-up or up-side-down. To fasten the tile to the wall, stainless steel screws are driven through the bracket holes into the substrate.

Cutting Castia Stone is done with a good quality circular saw fitted with a dry cutting diamond blade. (See your circular saw instructions for details about use/installation of blade.)

All seams are caulked with Tremco Dymonic™ Caulking or Dow Corning Silicone weatherproofing sealant. These caulking seams are then covered with Sand to give them a mortared appearance.

NOTE:

Proper installation of Castia Stone™ is contingent upon all other aspects of the construction completed in direct compliance with local building codes and proper engineering and architectural design.

PRIOR TO THE CASTIA STONE™ INSTALLATION

WALL SHEATHING

The wall sheathing must meet U.B.C. Code. Castia Stone recommends using CDX plywood sheathing because it has a high shear tolerance. Apply sheathing per manufacturer's specifications.

PRE WINDOW INSTALLATION FLASHING



Install 12" flashing on bottom.

POST WINDOW INSTALLATION FLASHING



Install 6" flashing on sides.

WINDOW FLASHING

Windows are to be installed per manufacturers specifications. Castia Stone requires all windows to be installed with flexible flashing (Blueskin or equivalent). 12" flashing must be installed on the sill so that it overhangs on the outside, and then 6" flashing must be installed on both the right and left sides. After this, the window must be installed per manufacturers specifications. Once the window is installed, use 6" flashing on the right and left side and then the top. When the Vapor Barrier is installed, pull out the bottom 12" flashing so that water will drain out onto the vapor barrier.

DOOR FLASHING

Install pan flashing on all doors so any water drains out. On the exterior, install 6" flexible flashing on the right and left sides and then on the top. Install the vapor barrier after all flashing is installed.



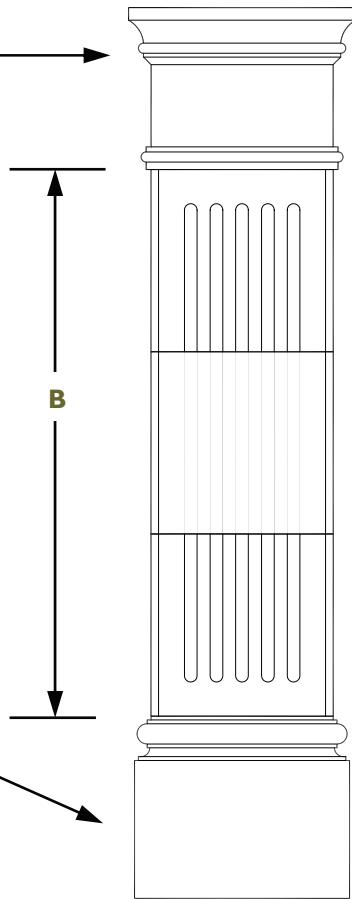
VAPOR BARRIER

The vapor barrier must meet U.B.C. Standard No. 14-1. Castia Stone recommends either 15 Lb. Felt paper, Tyvek, R-Wrap, or other moisture barrier wraps of the installer's choice. Remember, the idea is to let the house breathe and vent moisture, not wrap it in a plastic bag. Install the vapor barrier system per manufacturer's specifications.

2 Install Capital Molding 2nd.

3 Measure at B and determine how you will need to cut the tiles. Fluted tiles are 18" tall and standard tiles are 12" tall. Make sure that you lay them out to look even on the top and the bottom. Start from the bottom and work your way up.

1 Install Plinth Base at desired elevation 1st.



COLUMNS & BUILD-OUTS

When framing for columns or build-outs always keep in mind that you will have to cut the tiles and show that outside cut if the framing isn't done to exact measurements.

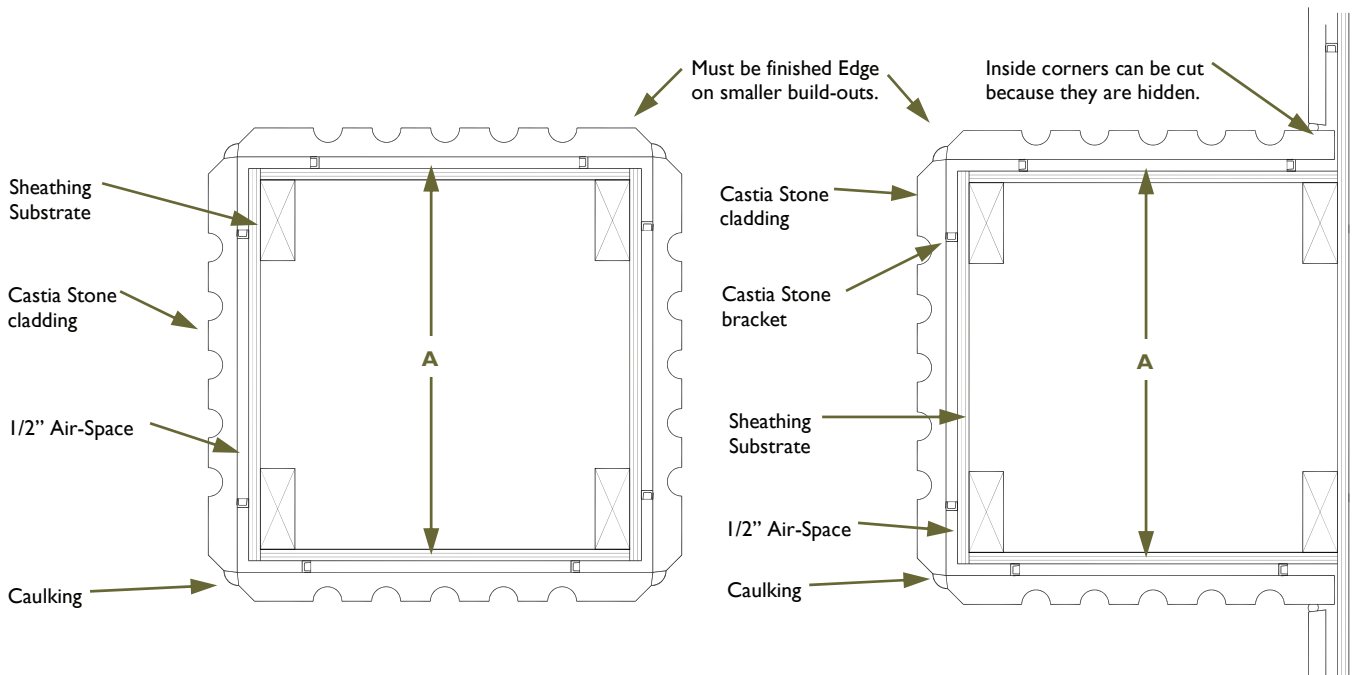
Framing Dimensions for Columns (A)

Columns Size	Net Frame (A)
24"	23"
18"	17"
12"	11"

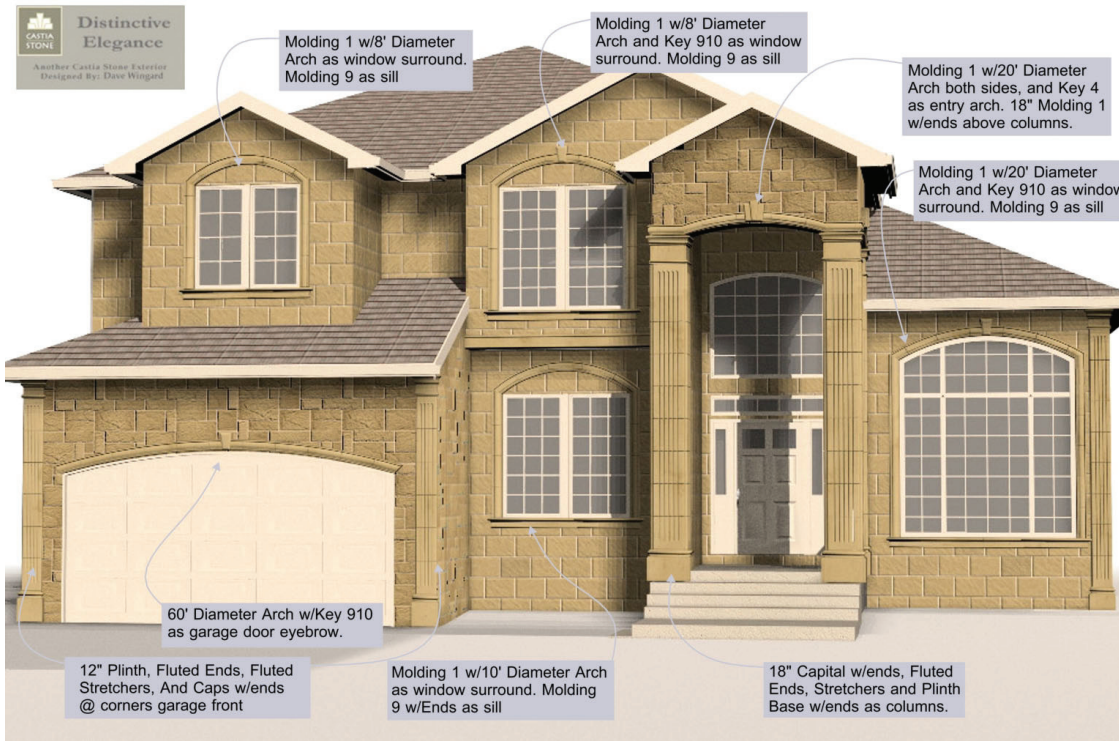
The above column sizes are designed to fit with our product. Please do not use any other sizes. When specifying a framing size, make sure that the outside dimensions (plywood to plywood) are framed exactly to the above measurements. This would include Fluted, Slate and Chiseled Stone. If you do not frame to these dimensions, the outer edge will show a cut on it and not finish well.

Note: When covering a large build-out like a chimney or bay, you can cut the last tile. Just make sure that the cut side faces one of the inside tiles and not the corner. This way you can cover the cut with mortar at that joint.

BUILD-OUTS



PREPARATION FOR THE CASTIA STONE™ INSTALLATION



INSTALLATION PLANS

The Castia Stone design usually originates from the Castia Stone design center located in Portland, Oregon. The installation plans will be included with your product delivery. These plans will be very descriptive. Keep in mind that onsite job modifications may have to be made due to framing changes or any other change made during construction. As a Castia Stone installer, you will be required to sometimes make design decisions yourself.



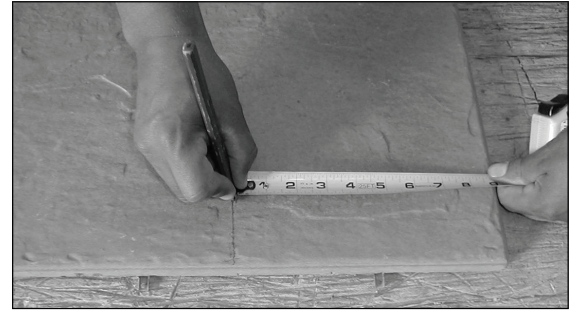
TOOLS REQUIRED

All the tools needed are available through Home Depot or your local HILTI representative at 800-879-8000.

- Hammer Stapler
- 7 1/4" Circular Saw (Makita)
- 7" Diamond Dry-cut blade
- 4" Grinder
- Tape Measure & Pencil
- 48"x24" working table
- Small Cordless Drill
- 4" Stiff Paint Brush
- Caulking Gun and Tooling Tools
- Small Hammer Drill
- 3' Level
- Torpedo Level
- Chalk Line
- Tin Snips
- Hammer
- Utility Knife
- Laser Level
- Extension Cords & Pig Tail
- Safety Glasses
- Dust Mask & Ear Protection

MARKING THE TILES

All the tiles can easily be marked with a pencil. For straight edges it is easiest to hold the tape in one hand and hold the pencil against the end of the tape in the other hand and run it along the edge producing a straight edge on the tile. Drywallers use the same technique when cutting sheetrock.



CUTTING THE TILES

After marking the tile there are two ways to cut the tile pieces:

1 1/4" Chop Saw—Just set the piece of tile or molding in the chop saw and cut just like you would cut a normal piece of wood

7 1/4" Circular Saw—Many installers find this to be one of the easiest ways to cut. After marking the tile, set the tile on the table and freehand cut the tile on the specified line. This saw allows you to cut many different ways—arches, partial cut etc.

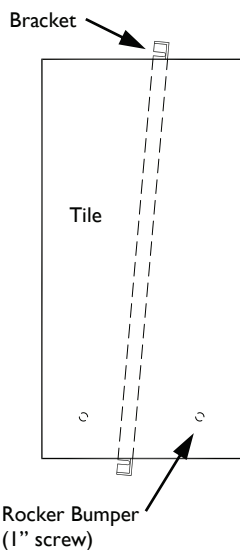


SCORING THE TILES

The reason you score a tile is to produce a simulated seam. Usually this is used between window mulls or where a vertical row of tiles may be used in a space that is 18" wide or less. By running using the 7 1/4" blade to produce a channel about 1/4" deep and 3/16" wide you can produce a simulated seam without having to install two separate tiles.



Front View



STABILIZING SINGLE BRACKET TILES

The use of rocker bumpers (a 1" screw placed on either side of the bracket before installation of the tile) will maintain stability of tiles with only one bracket. If you do not use the rocker bumpers to stabilize the tile, the tile will rock back and forth on the one bracket. The rocker bumpers can also be used in other applications to make sure that the 1/2" air space is always present.

GRINDING THE TILES

After making a cut it is important to grind the edge to produce a nice chamfer for the caulking to rest in. This eliminates having a sharp edge showing.



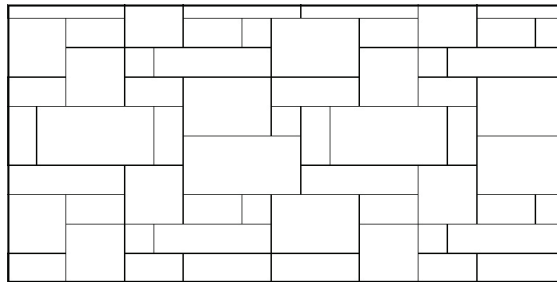
INSTALLALLING THE CLADDING

Chiseled Stone Cladding

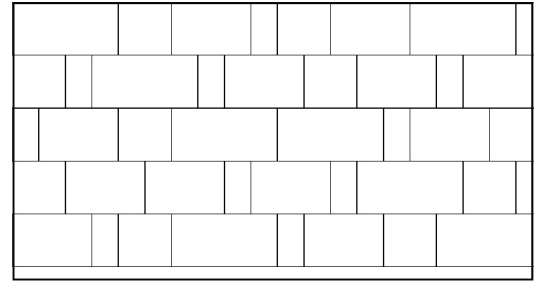
The layout on chiseled stone is a random pattern. Tiles should be installed similar to the order that they are packaged, otherwise you may end up with all of one size towards the end of the job.

The Castia Stone™ cladding system should be installed after the moldings have been installed. The cladding will butt up to the moldings. All of the cladding will be installed per the supplied plans. Keep in mind the elevations may be slightly different at construction. Start at the bottom working your way up the wall per the plans. The layout may be important depending on the type of product that is being installed.

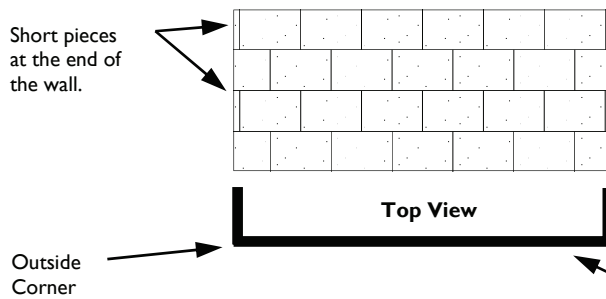
RANDOM PATTERN



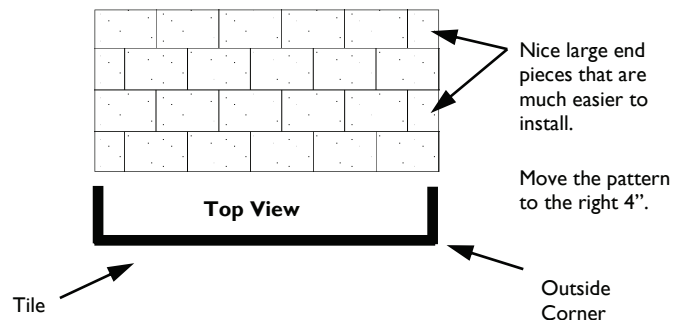
CLASSIC PATTERN



INCORRECT

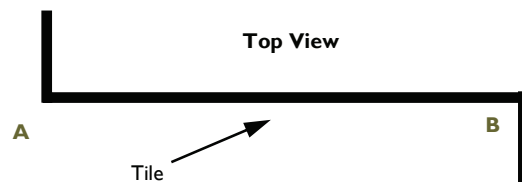
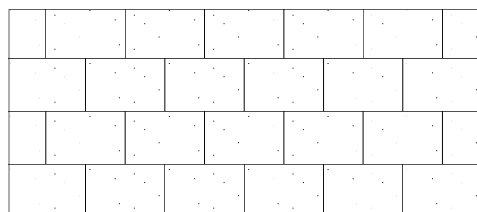


CORRECT

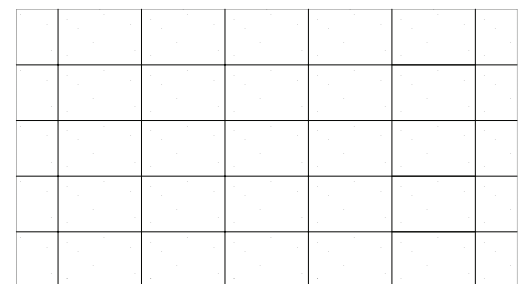


Slate Cladding

The layout on the Slate Tile is a specific pattern. All of the pieces should be installed at 9" on center above the other one. When installing a wall make sure that you measure out that wall so that your 1st or 2nd row does not end with a very short piece. If this happens, move your layout to the right or left approximately 4" and start there. Always start from the center bottom.

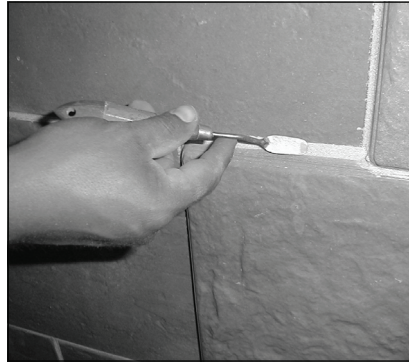
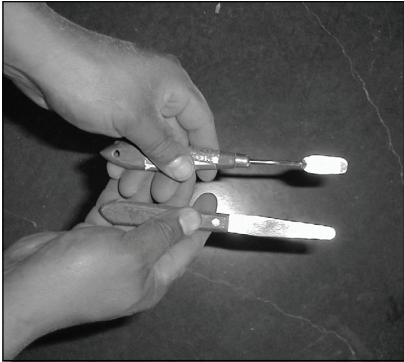


Usually you can start your pattern on the outside corner (A) with a full tile and finish at the inside corner (B) with a cut tile. Your second row (C) will start with half of a full tile (9" long). Make sure that cut edge is at seam of next tile and not on exterior corner.



The figure above shows the layout on an outside wall with two outside corners.

Follow the same guidelines for a stacked pattern as the staggered pattern making sure to position the tiles to create equal lengths at the edges.



CAULKING AND FINISHING THE JOINTS

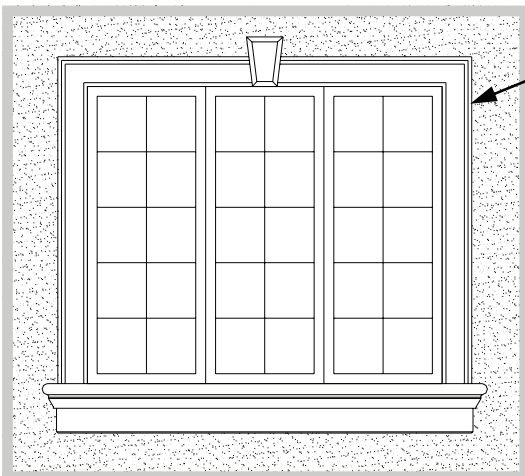
Specifications—Caulking joints will never exceed 1/2" in width and caulking will never touch the vapor barrier (joint should never be wide enough that caulking should penetrate back to the vapor barrier). If caulking is going to penetrate this far, use a backer rod to eliminate adhesion to the vapor barrier.

There are two steps in finishing the joints. The first step is caulking the joints and the second is putting sand on the caulking to produce a true mortared look but keep the same flexibility as a caulking would have.

Caulking—It is very important that all joints are **clean** and **dry** before applying the caulking to produce maximum adhesion. **Always immediately brush off leftover dust after cutting the tiles.** Clean dust off nearby tiles as well to prevent possible contamination or discoloration of material. By cutting the end of the caulking tube a particular way, it will make it much easier to run the tube along the joints and cut down on the amount of tooling that will be needed to finish joints. Tooling is essential, however, to insure maximum adhesion of sealant to concrete tile. See the photos on this page to see the proper way to cut the tip of a tube. The warmer the outside air is, the more difficult the caulking will be to work with. It is best to do your caulking in the morning on summer days and in the afternoon on winter days.

Sanding—After the joints have been caulked, tooled, and finished, apply a layer of Sand on them to produce a true mortared look. This is done by putting the sand in a container (coffee can) and spreading it on the joints with a wide stiff paint brush as shown.

Note—Use caulking and sand to cover exposed cuts. Colored grout can also be used.



STUCCO & MOLDINGS

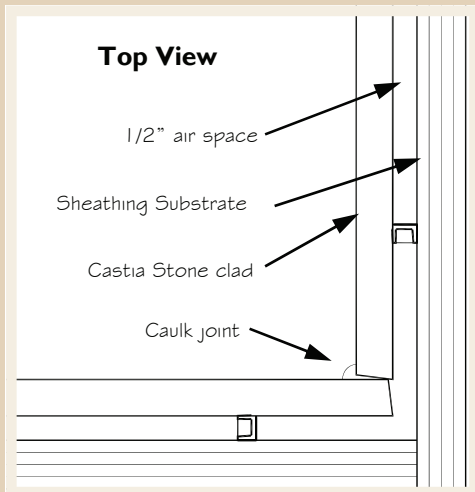
When using Castia Stone Moldings with stucco or EIFS, leave a 3/8" gap between stucco or EIFS and the Castia Stone Moldings for expansion and contraction. Fill the gap with a matching caulking.

INSTALLATION DETAILS

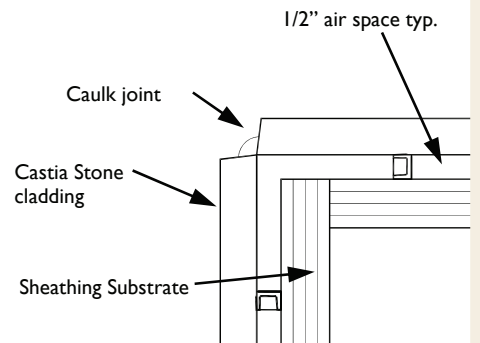
CAULKING DETAILS

CAULK OUTSIDE CORNER

The tiles must come together at their bases and caulking must be applied in the space between them, as shown to right.

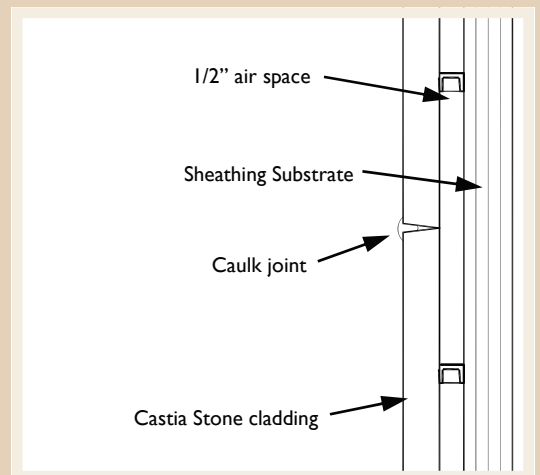


Top View



CAULK INSIDE CORNER

The tiles must come together. The end of one tile must intersect the face of another tile with caulking in the gap left by the angled end, as shown to right. The caulking line must be a minimum of 1/4" between all Castia Stone products.



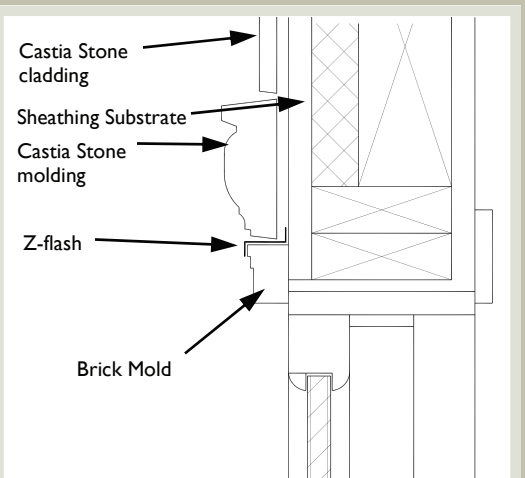
CAULK WALL

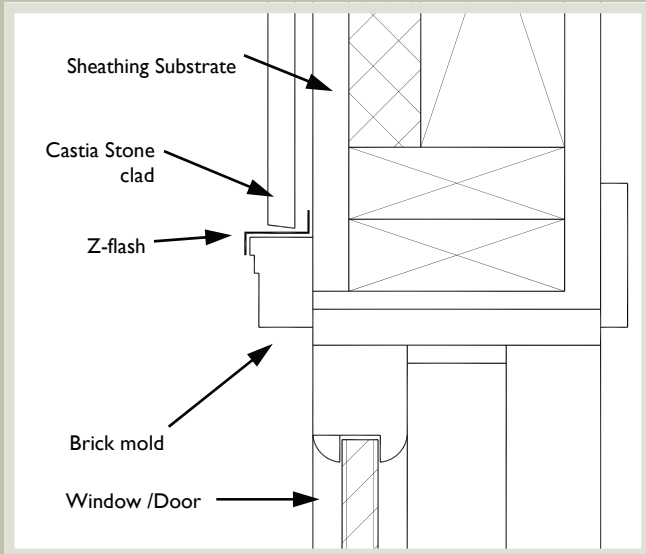
The tiles must come together as close as possible to produce a 1/4" joint between the top and bottom tile.

OPENING DETAILS

OPENING WITH TRIM

When starting the installation above any brick mold always install standard Z-Flashing to keep any water from going behind the brick mold. Leave the bottom of the tile open next to the Z-Flashing so any moisture may drain properly.



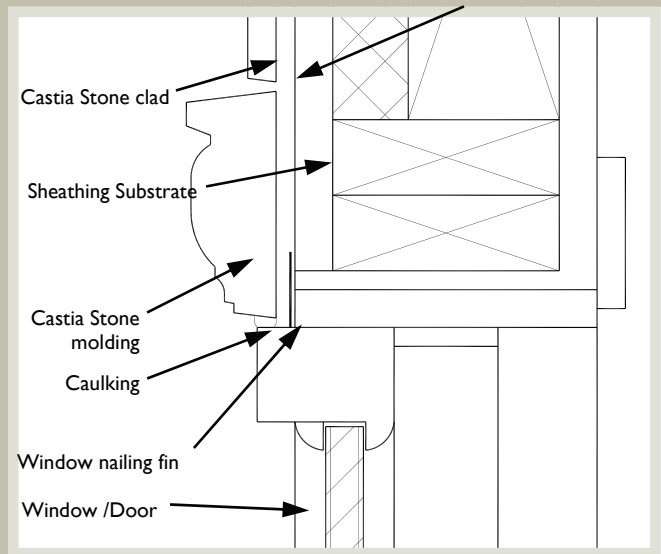


OPENING WITHOUT TRIM

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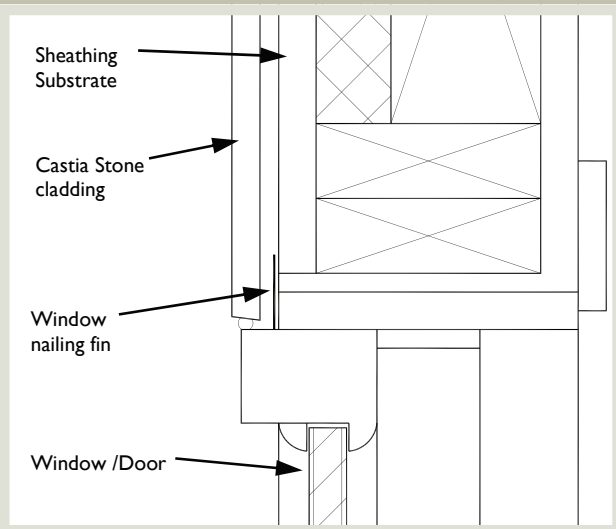
FINNED OPENING WITH TRIM

The finned opening works just like the brick mold except there is no need for Z-Flashing because the finned window acts as its own flashing.



FINNED OPENING WITHOUT TRIM

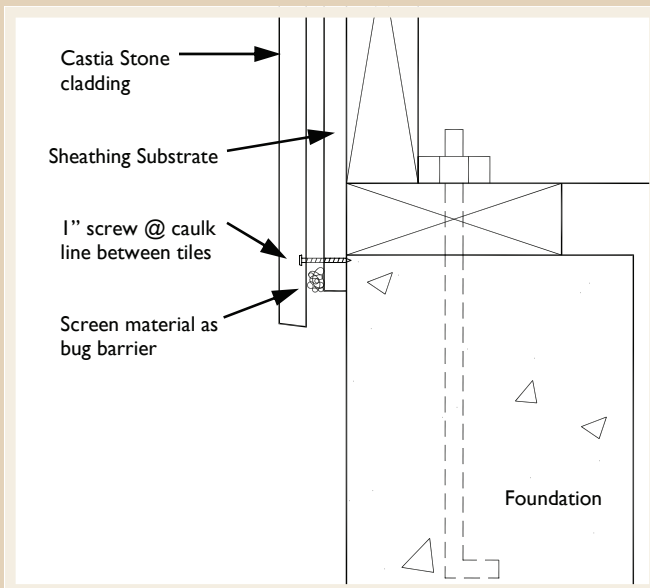
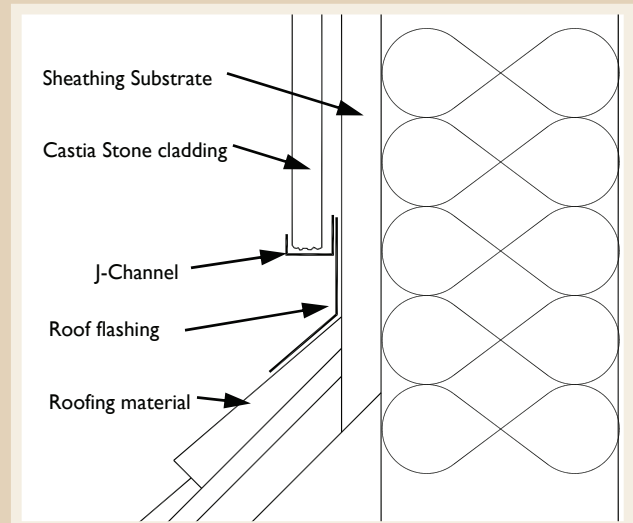
The finned opening works just like the brick mold except there is no need for Z-Flashing because the finned window acts as its own flashing.



TILE START EDGE DETAILS

CUT EDGE START

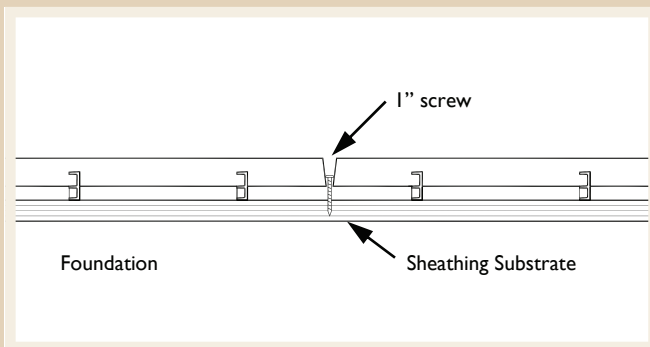
Use a specified J-Channel to start any tile that has a cut bottom edge, usually used where tile starts from a roof line as shown. The channel will cover the cut edge and it will also keep the tile from pulling out at the bottom.



CLEAN EDGE START (SIDE VIEW)

When starting the first row of tile, install tile minimum 2" below wall sheathing. Once first course is installed insert screening material behind top of tile to create a bug barrier.

When attaching tile to a concrete wall, attach 3/4" Pressure Treated Plywood and then screw the tiles into the plywood with 5/8" screws. Make sure the plywood is attached firmly with adhesive and some type of anchor. Always check local building codes when doing this.



CLEAN EDGE START (TOP VIEW)

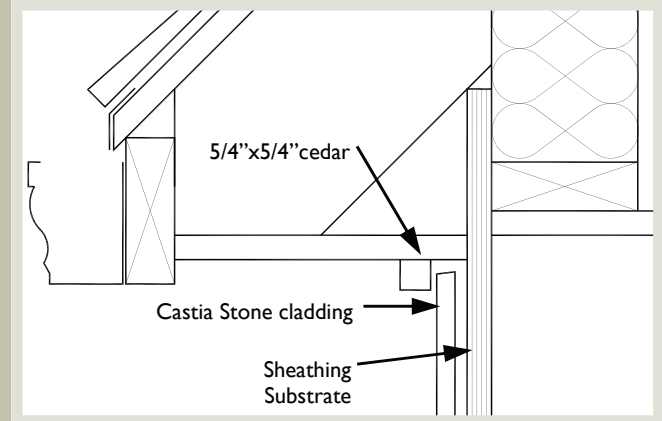
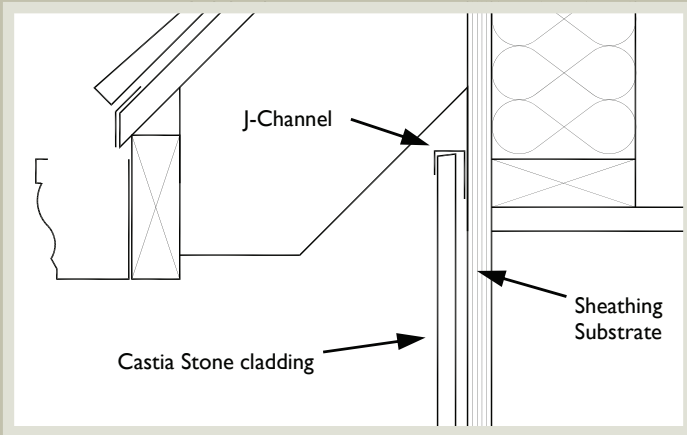
Attach a screw at a minimum of every other tile in the vertical caulk line to keep bottom edge from pulling out

EAVE DETAILS

NOTE: Gutters must maintain a 3" clearance from all adjacent walls where Castia Stone™ is applied.

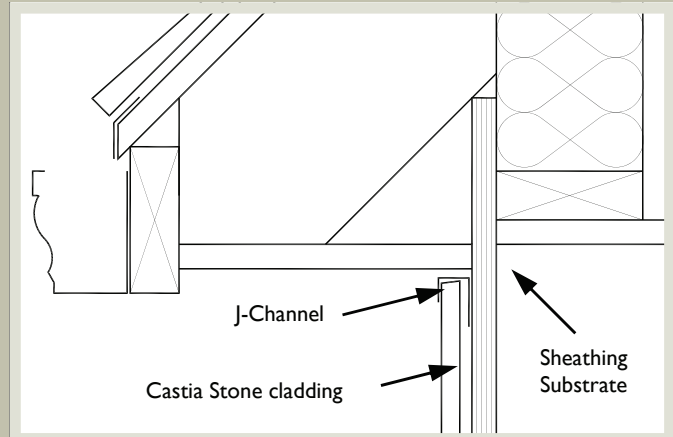
SOFFITED EAVE

Wood soffit needs a 5/4" x 5/4" cedar trim piece. This still allows for an air space to vent and also looks like a finished detail to the soffit.



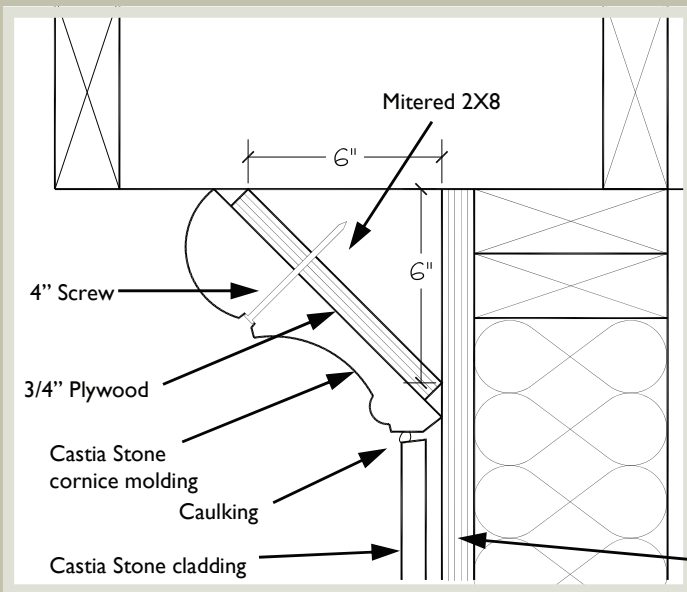
OPEN EAVE

To finish this way, take the Top J-Channel and turn it upside down. Cut the tile about 3/8" of an inch short so that you can slide the tile up into the J-Channel and then drop the bracket behind the other tile below.



NON WOOD SOFFIT

When using either a vinyl or metal soffit, you will have to use the Top J-Channel. Take the J-Channel and turn it upside down. Cut the tile about 3/8" of an inch short so that you can slide the tile up into the J-Channel and then drop the bracket behind the other tile below.



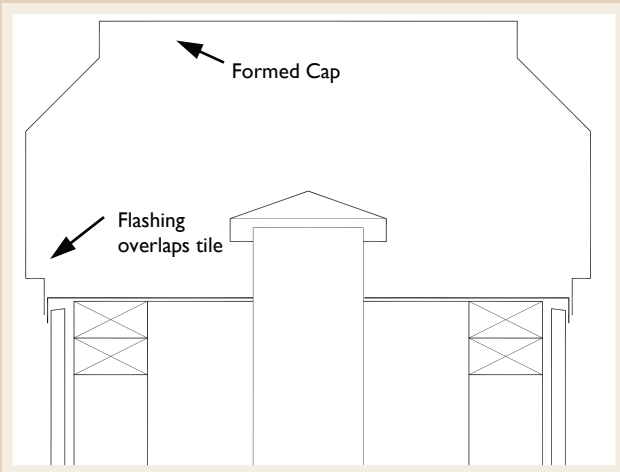
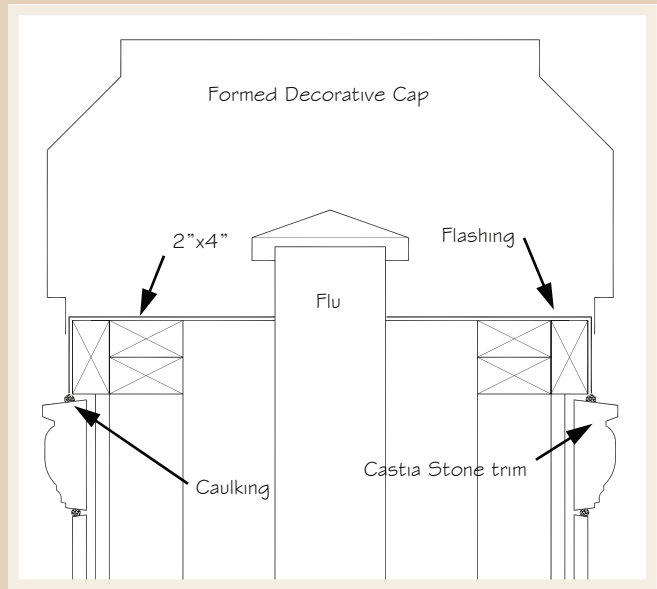
EAVE WITH CORNICE

The eave should be framed in with a triangular piece in the corner that is 90 degrees and has (2) six-inch legs. Attach the cornice molding with at least (4) 4" screws through 1/2" horizontal groove on face.

Sheathing Substrate

CHIMNEY WITH TRIM

When trim is used at the top of a chimney, install a 2"x 4" around the top perimeter so that the flashing can be flashed over the top and intersect with the trim. Caulk at the intersection of the trim and the flashing. To finish off the chimney install a decorative cap for a final touch.

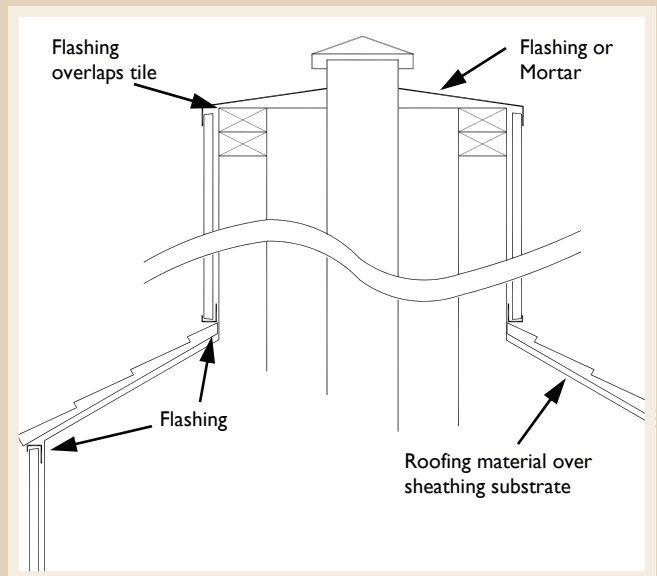


CHIMNEY WITHOUT TRIM

Bring the Cladding to the top of the framing and then install the flashing over the cladding and down about 2".

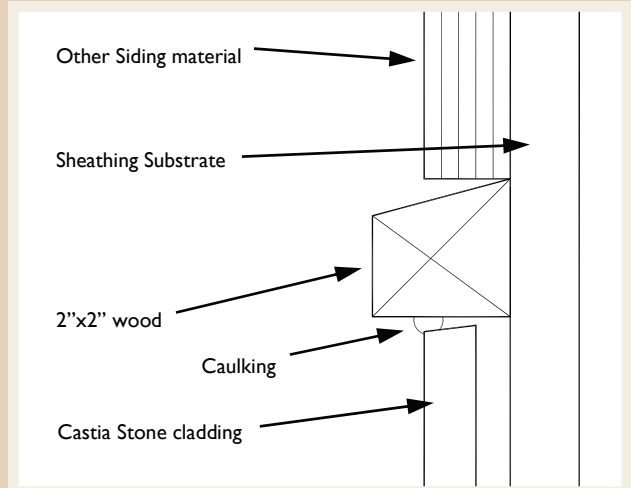
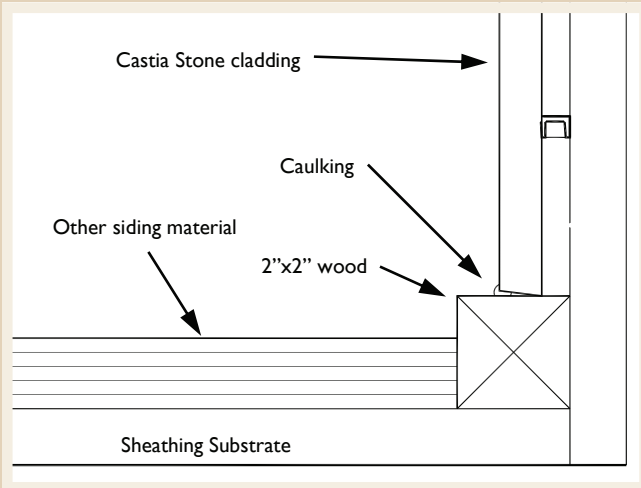
CHIMNEY EYEBROW CAP

For eyebrows on the chimney, install typical roofing material over sheathing substrate. Make sure that all the cladding above the roofing material overlaps it so that any water will drain correctly. Flashing required where roof overlaps cladding and where cladding continues above roofing material



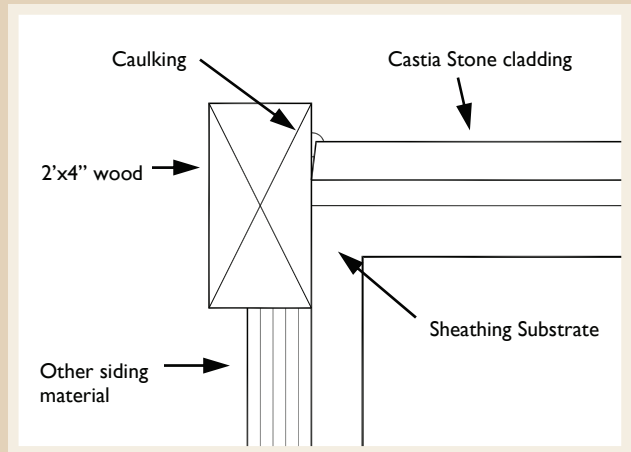
TILE TO SIDING WALL

When making a transition from Castia Stone to siding on a flat wall, use a cedar 2"x2" between the Castia Stone cladding and the siding. Vinyl or metal siding transition should be done with a standard J-Channel.



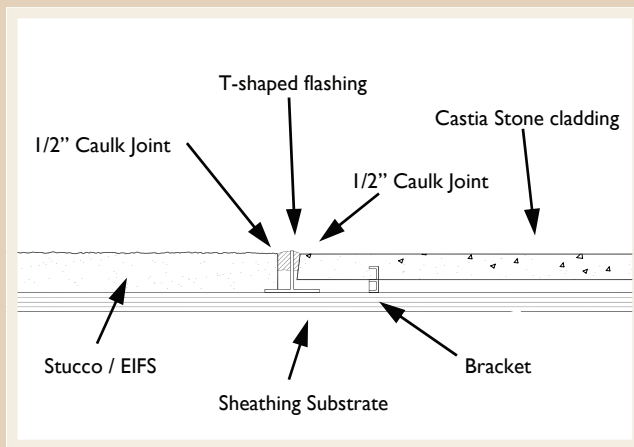
TILE TO SIDING IN CORNER

When a transition from Castia Stone cladding to siding is at an inside corner, place a cedar 2"x2" in the corner and intersect both the siding and the Castia Stone cladding. Properly caulk the intersection.



TILE TO SIDING OUT CORNER

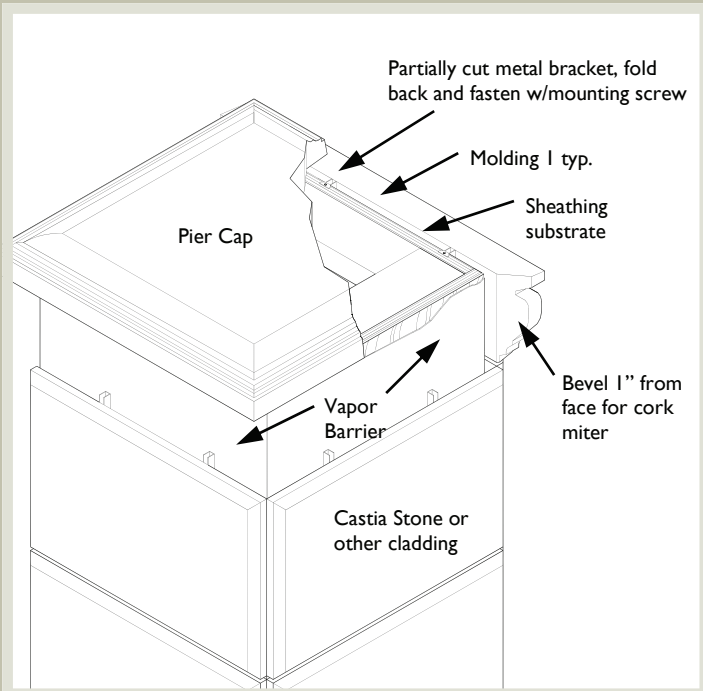
If you need to intersect at an outside corner, use a cedar 2"x4" on the outside corner. Make sure that the 2"x4" is mounted approximately 2" past the outside corner framing. This will allow for a proper caulking line from the Castia Stone cladding to the 2"x4".



TILE TO STUCCO

Stucco/EIFS installers generally attach a T-shaped flashing at the transition between the stucco/EIFS and Castia Stone. When intersecting EIFS leave a 1/2" space for back'er rod and caulking to allow for expansion and contraction.

PIER CAP DETAILS



CORK MITER PIER CAP

15", 21", & 27" pier caps are designed to fit piers framed at 11", 17", & 23" respectively. Typically a molding I with end details and metal brackets is installed between the cap and cladding below. Bevel cut the molding 1" from the face for a cork miter. To fasten the molding I, cut the sides of the metal brackets, fold back at a right angle to flange over the sheathing and fasten with a mounting screw. Fasten the pier cap with an exterior construction grade adhesive caulking.

FOLLOW UP INSPECTION

A thorough follow-up inspection should be conducted by the installer or homeowner to ensure that the following quality standards are met and exceeded. A Castia Stone representative can be contacted if questions arise.

Substrate Preparation

- Building paper correctly installed.
- Opening surrounds properly sealed.
- Start measurements as per plan.
- All flashing installed correctly.
- All windows and doors caulked properly.
- All shims / build-outs completed neatly.

Molding Installation

- All moldings are installed level.
- All moldings are clean.
- Obvious color harmony maintained.
- All openings are cut to fit neatly.
- All moldings are fastened as per design.
- Installation minimized waste.

Tile Installation

- Tiles are installed straight.
- All cuts are square and fit neatly.
- Tile fit is tight in all directions.
- Layout is correct as per plan.
- All tiles are clean.
- All tiles are installed level.
- All tiles are attached as per design.
- Fixtures, mailbox, numbers, etc. are replaced.

Caulking

- Tiles & molding must be clean of dust & other contaminants prior to caulking.
- Tiles & molding must be dry
- All joints and openings are caulked properly.
- Backer rod used as required.
- Caulking applied within temperature guidelines.
- Sand is applied neatly.

CARE AND MAINTENANCE OF YOUR CASTIA STONE™ EXTERIOR

A small investment in maintaining your Castia Stone cladding system pays in the long-term appearance and protection of your home. With an investment as important as your home, we recommend that you inspect the sealants once a year and clean the surface thoroughly at least once every five years.

VISUAL INSPECTION OF HOUSE EXTERIOR

The purpose of the visual inspection is to detect potential problem areas which could allow water entry. Specific areas that may be problematic are addressed as follows:

- Roofs – Ensure that all flashings are functional for proper drainage (away from and off of the roof).
- Gutters and Downspouts – Should be properly sloped and cleaned regularly.
- Chimney – make sure that water is directed away from chimneys.
- Windows & Doors – Check window/door frames for frame separation at corners. Check the weeps to ensure that they are clean and functional. Check wood windows to ensure that exposed edges have been primed and painted. Check windows/doors to ensure that they have been caulked to the abutting cladding.
- Penetrations, Attachments and Terminations – Inspect to ensure the presence of proper sealant joints and flashings.

NOTE: Required repairs should be performed by a qualified professional.

CASTIA STONE™

SPECIFICATION INFORMATION

CAULKING

Caulking Choices have been designed to specifically adhere to concrete. Please look at websites for spec sheet, color choices, application, and warranty information.

Tremco Dymonic™ www.tremcosealants.com

Dow Corning® www.dowcorning.com

- 791 Weatherproofing Sealant
- Contractors Weatherproofing Sealant (CWS).

CASTIA STONE™ SPECIFIED INSTALLATION MATERIALS (ALL AVAILABLE THROUGH CASTIA STONE™).

Caulking Tremco Dymonic™
Dow Corning® 791 Weatherproofing Sealant
Dow Corning® Contractors Weatherproofing Sealant (CWS)
(Check local Dealers for color options)

Silica Sand (other sand can be purchased elsewhere if desired)

Stainless Steel Screws

J-Channel (flashing)

<u>Substrate</u>	<u>Castia Stone Specified Fastener</u>
1/2" Minimum CDX plywood	#6 NocoRod Anodized Screws or equivalent (Non-coastal regions)
1/2" Minimum CDX plywood	#6 304 SS (Coastal regions)
Concrete (2000psi minimum)	Torx Bit 3/16" Fastener (Minimum 1" embedment Depth)
Hollow Block	Torx Bit 3/16" Fastener (Minimum 1" embedment Depth)
Red Brick	Torx Bit 3/16" Fastener (Minimum 1" embedment Depth)

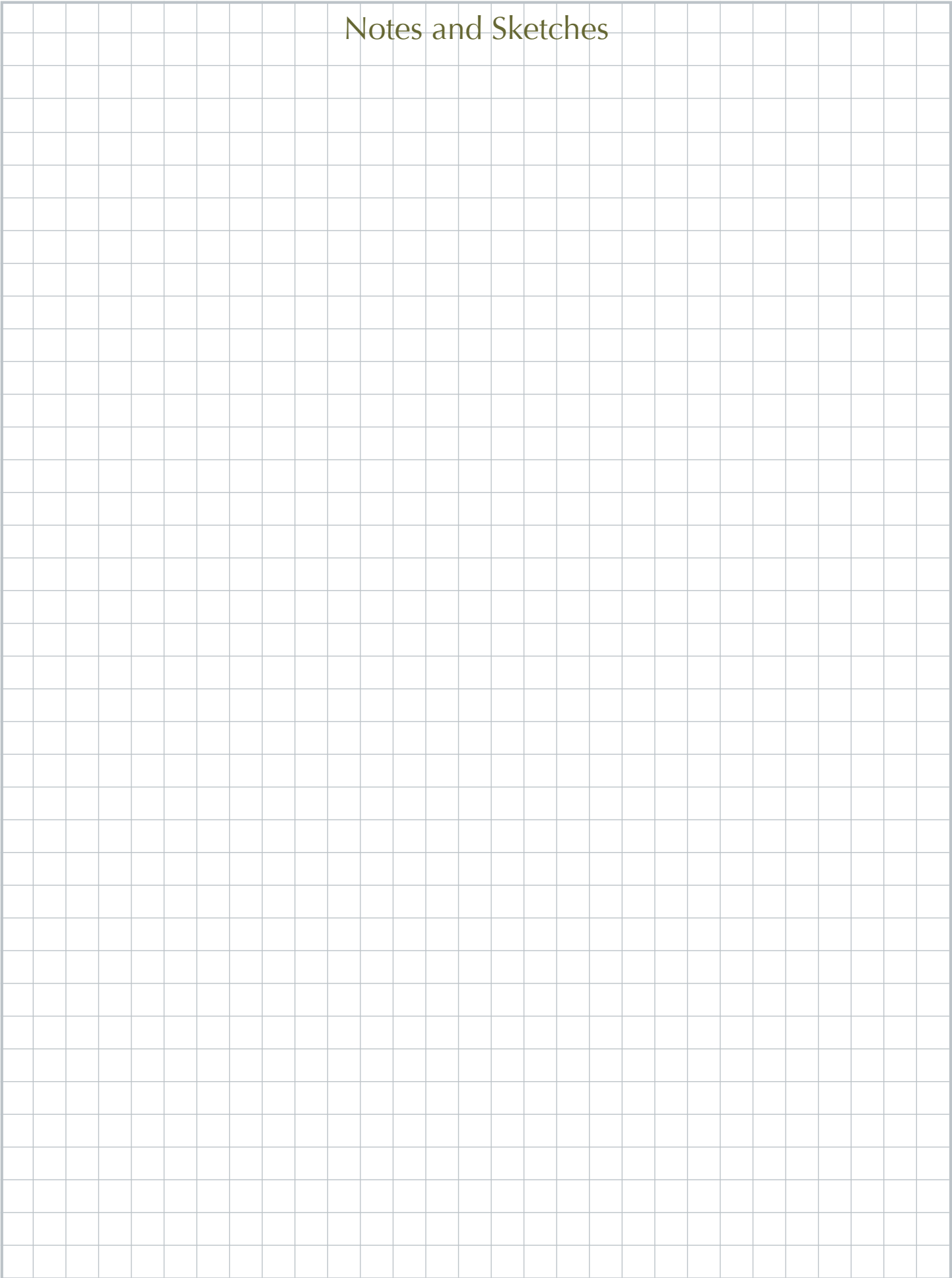
Refer to our website, www.castiastone.com for the most updated fastening specifications.

WARNING

AVOID BREATHING SILICA DUST

This product contains silica. Installation of this product will create silica dust. Inhalation of irrespirable silica dust can cause silicosis a potentially disabling lung disease, and is known to the State of California to cause lung cancer. When drilling, cutting, or abrading product during installation or handling; (1) Work outdoors where feasible, otherwise use mechanical ventilation, (2) Wear a dust mask or, if dust may exceed PEL, use NIOSH approved respirator, (3) Warn others in area. For further information, refer to material safety data sheet or consult employer. This has been prepared to meet current Federal OSHA hazard communication regulations, and is offered without any warranty or guarantee of any type. Castia Stone cannot control the use of its products, and therefore specifically disclaims liability and responsibility arising from the use, misuse, and alteration of its products.

Notes and Sketches





CASTIA

STONE™

WWW.CASTIASTONE.COM

INFO@CASTIASTONE.COM

DOWNLOAD THE INSTALLATION MANUAL AT:

WWW.CASTIASTONE.COM/INSTALLATION/CASTIASTONE_INSTALLATION_MANUAL.PDF