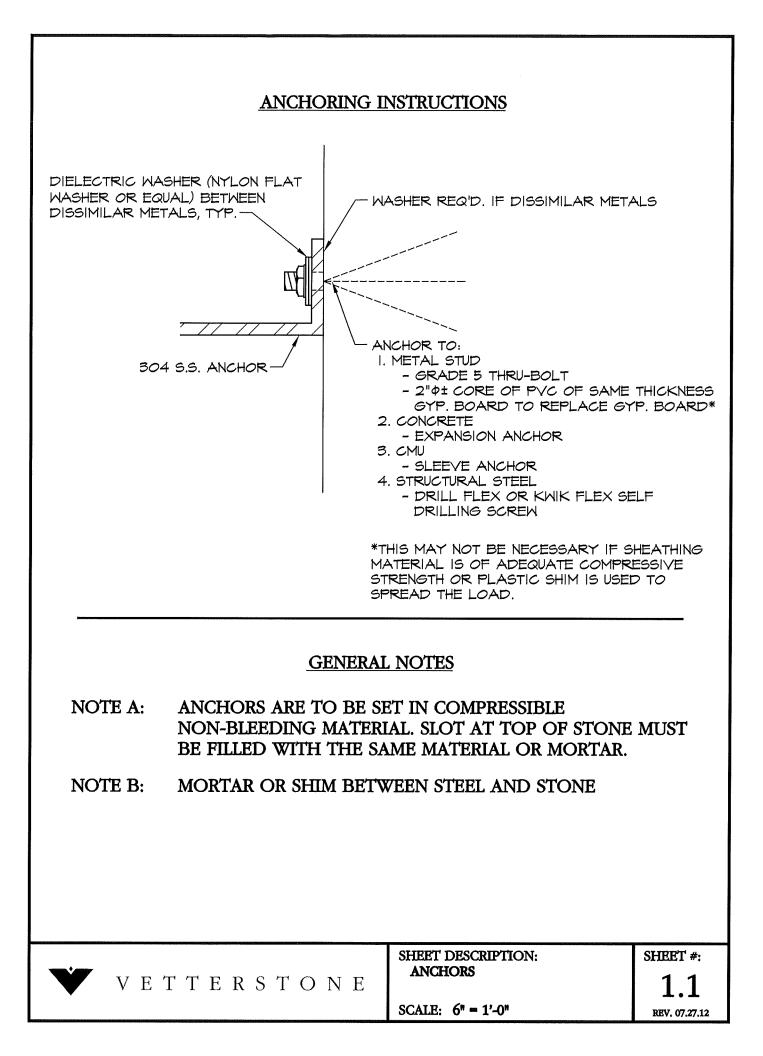
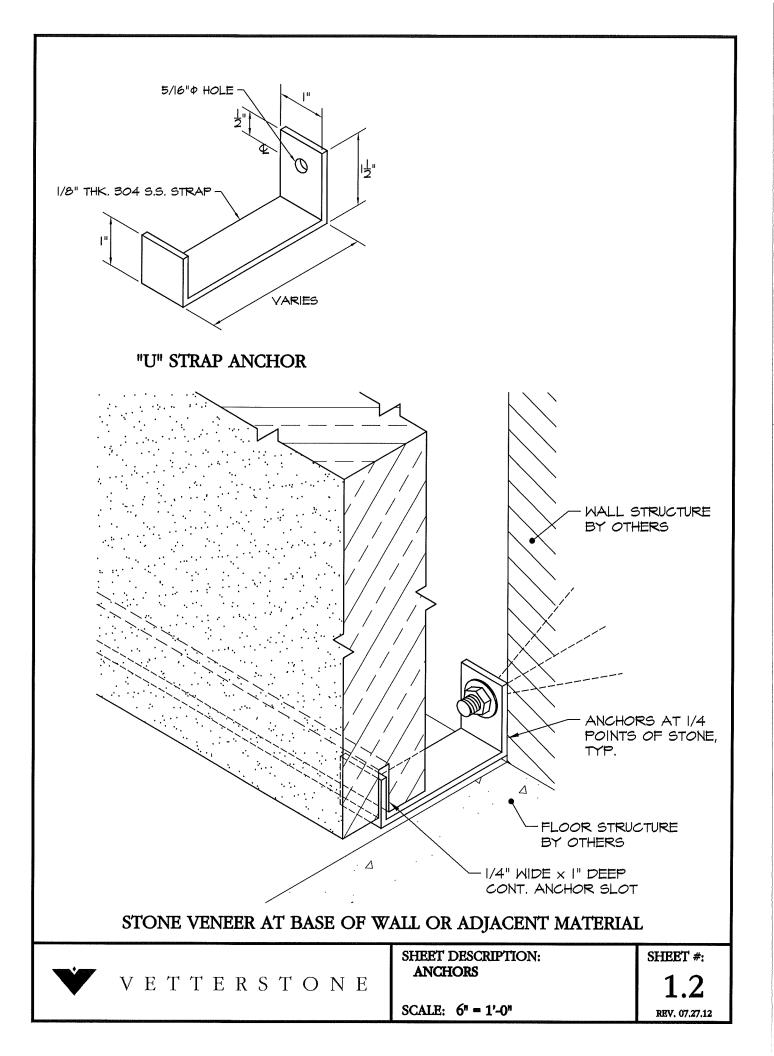
MINNESOTA STONE DETAIL BOOK

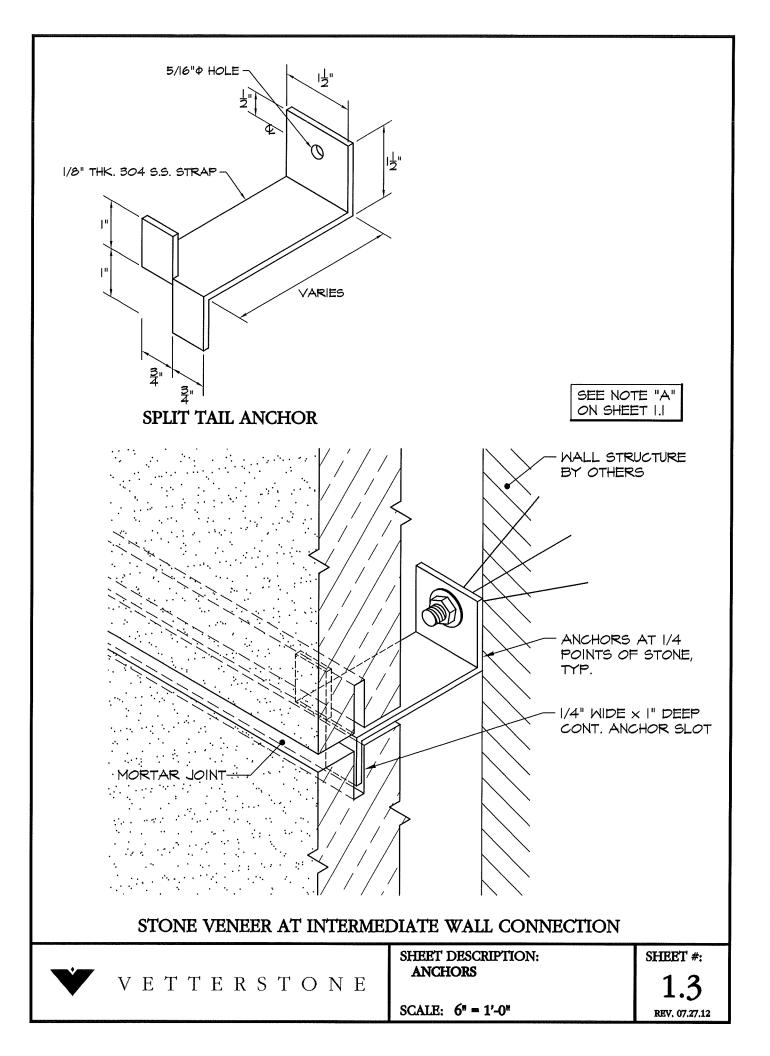


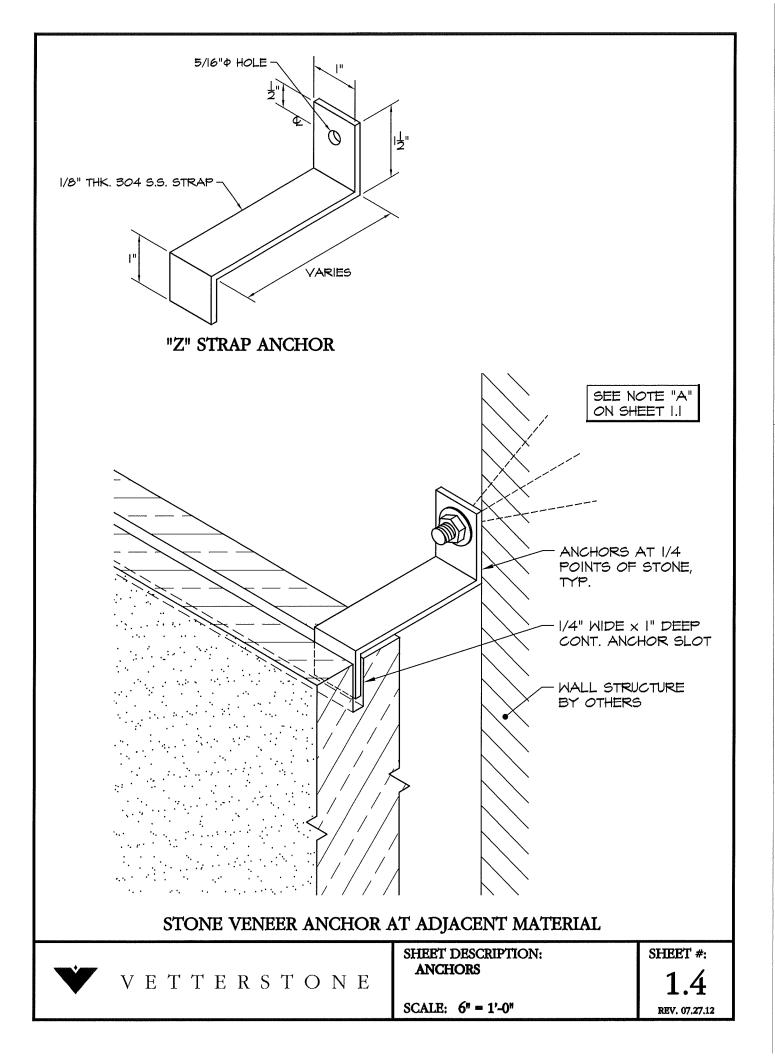
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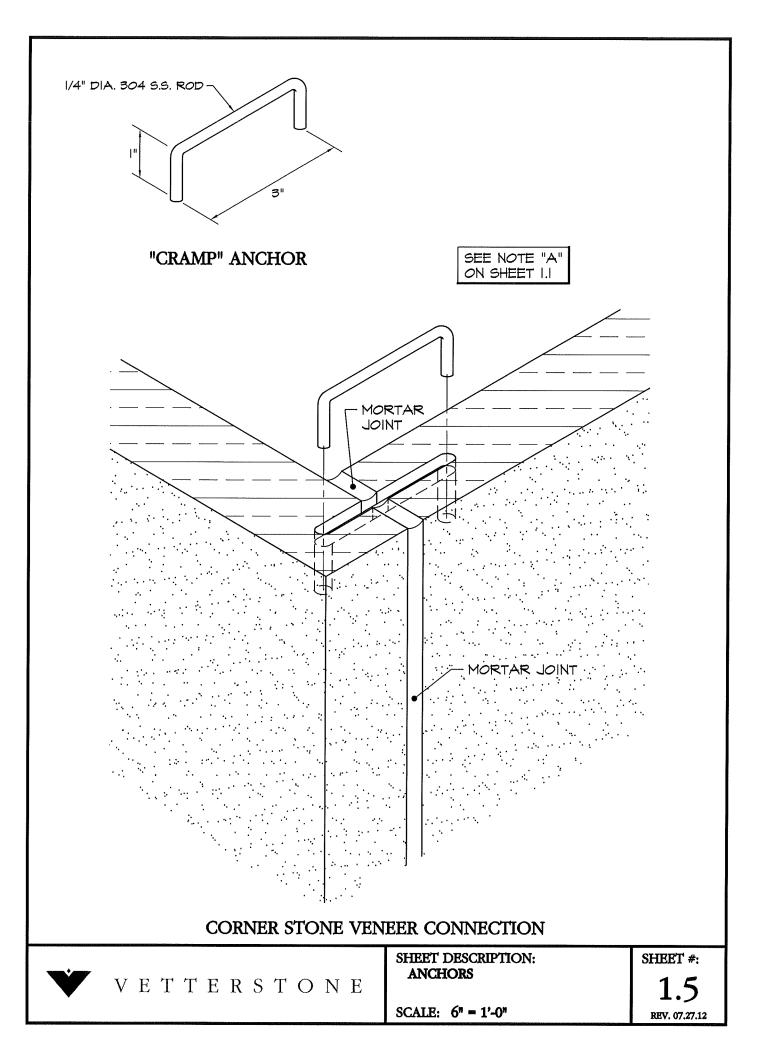
- SECTION 1. ANCHORS
- SECTION 2. CORNER AND JOINT DETAILS
- SECTION 3. WALL FACING: SPLITFACE, CUTSTONE, PANEL SIZES
- SECTION 4. SILL, JAMB, HEADER AND THRESHOLD DETAILS
- SECTION 5. CAP AND COPING DETAILS
- SECTION 6. WATERTABLE AND BANDING DETAILS
- SECTION 7. SOFFIT AND FASCIA DETAILS
- SECTION 8. COLUMN FACING DETAILS
- SECTION 9. PAVER, FLOORING, AND FLAGSTONE DETAILS
- SECTION 10. TREAD, RISER, AND NOSING DETAILS
- SECTION 11. RADIAL STONE DETAILS
- SECTION 12. LANDSCAPE BLOCKS
- SECTION 13. THINSET VENEER DETAILS
- SECTION 14. COLUMNS AND BALUSTERS

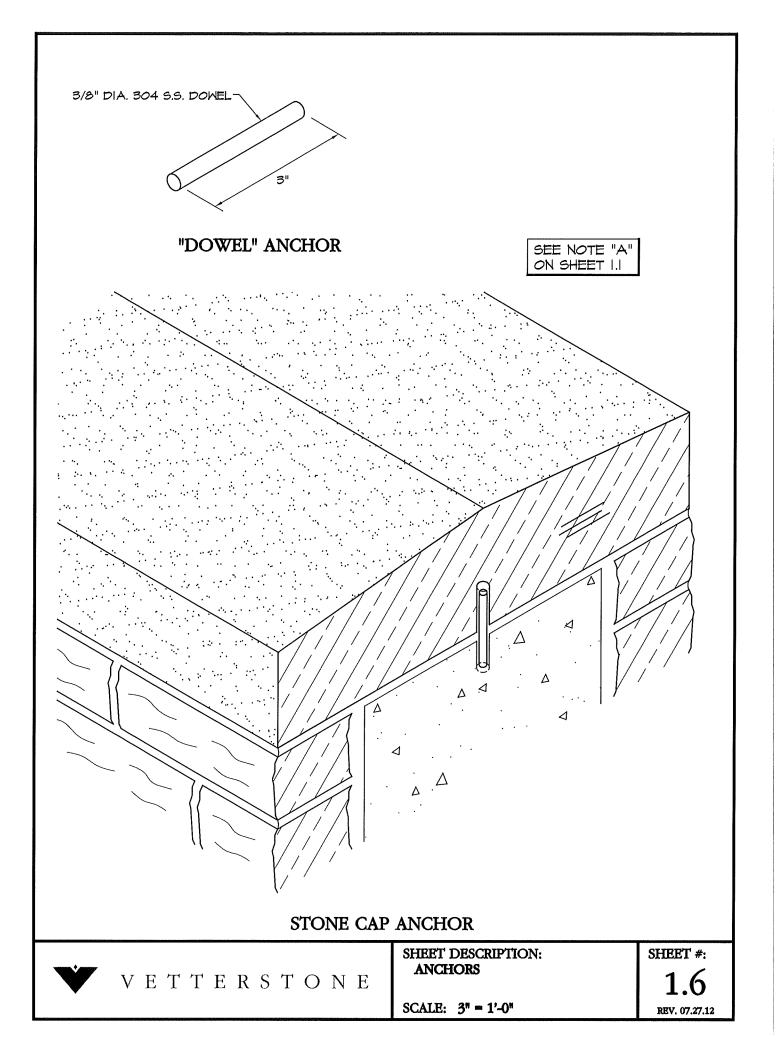


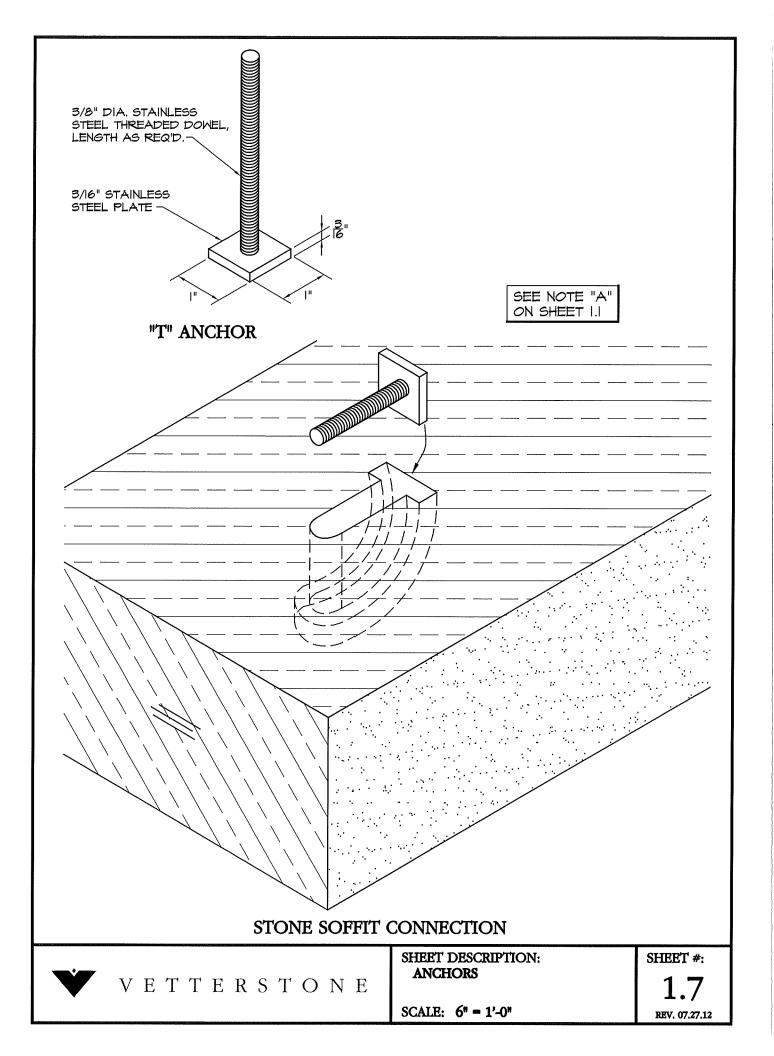


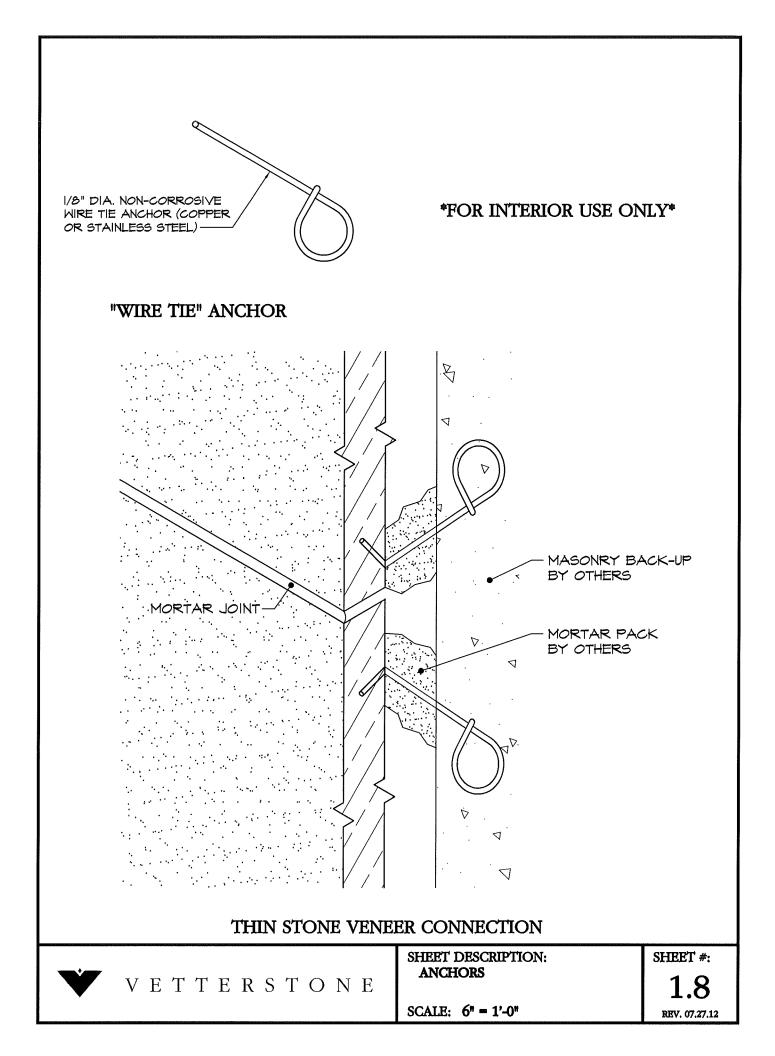


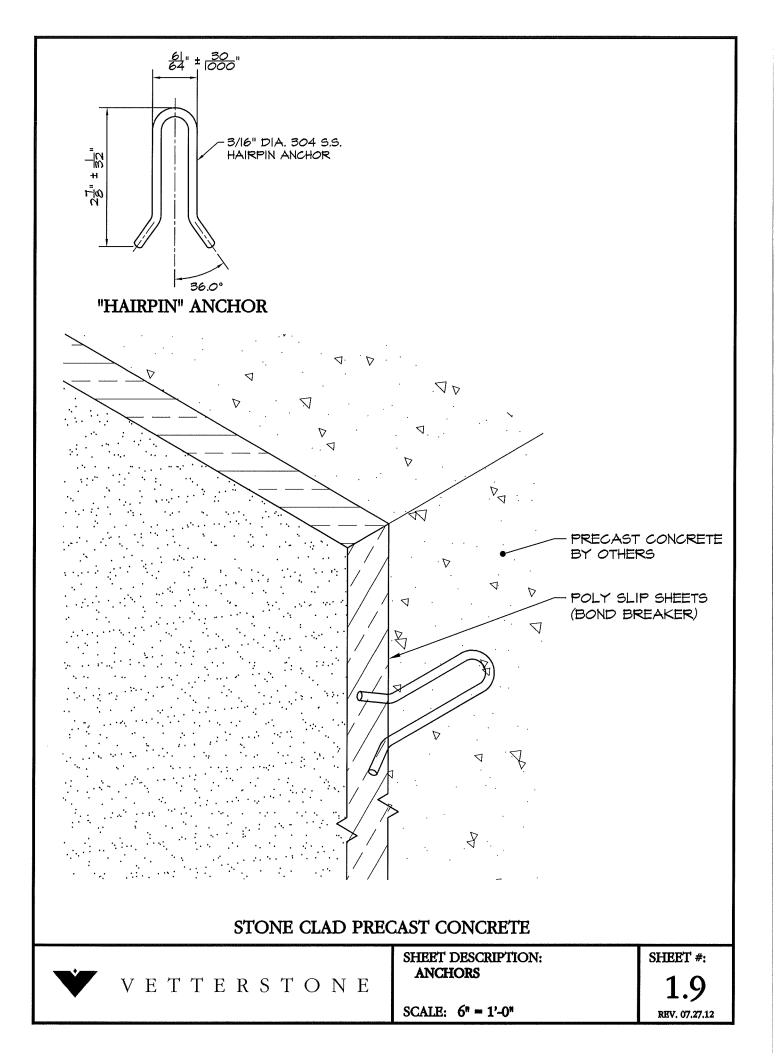


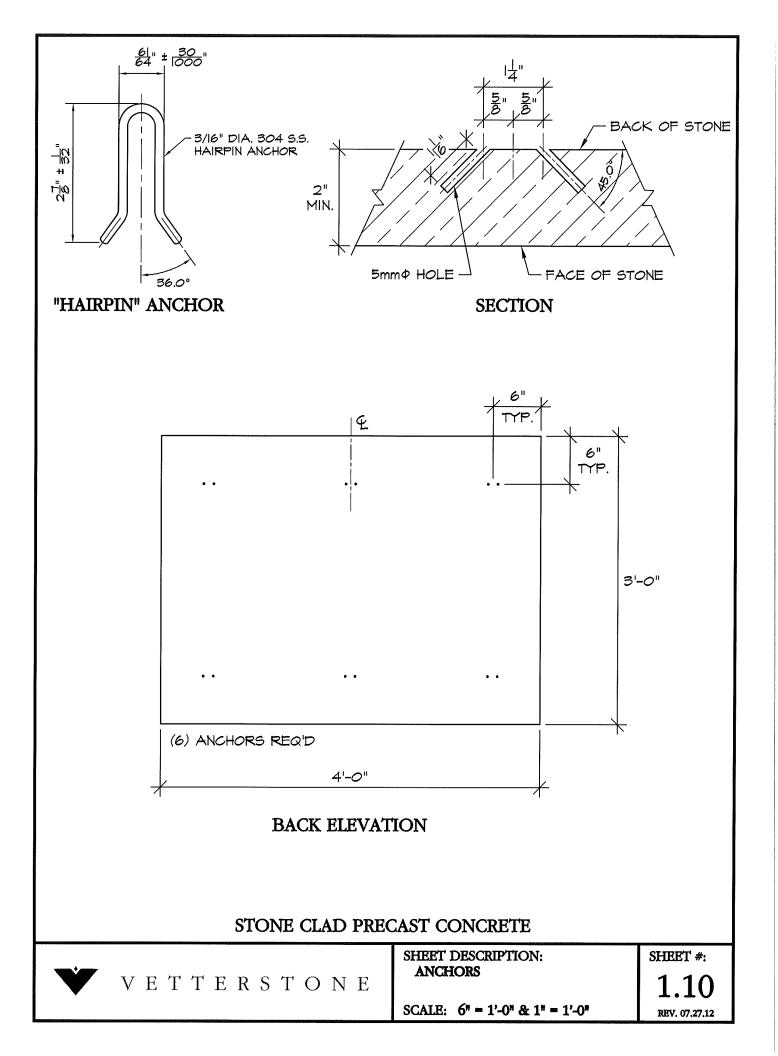


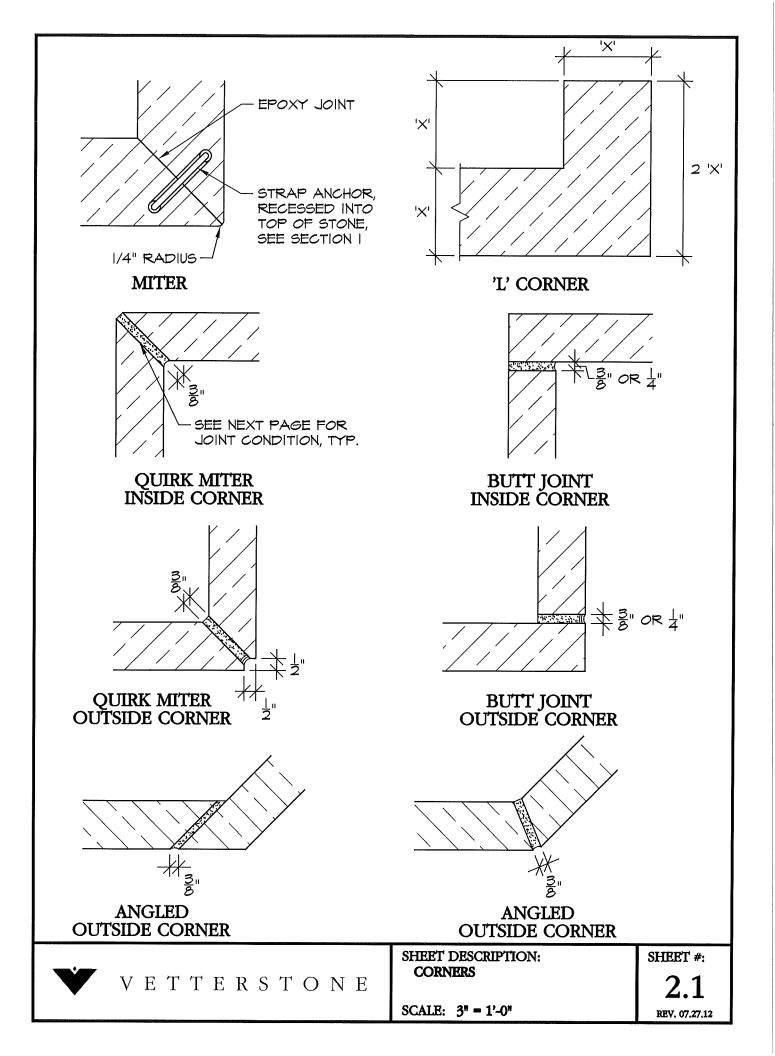


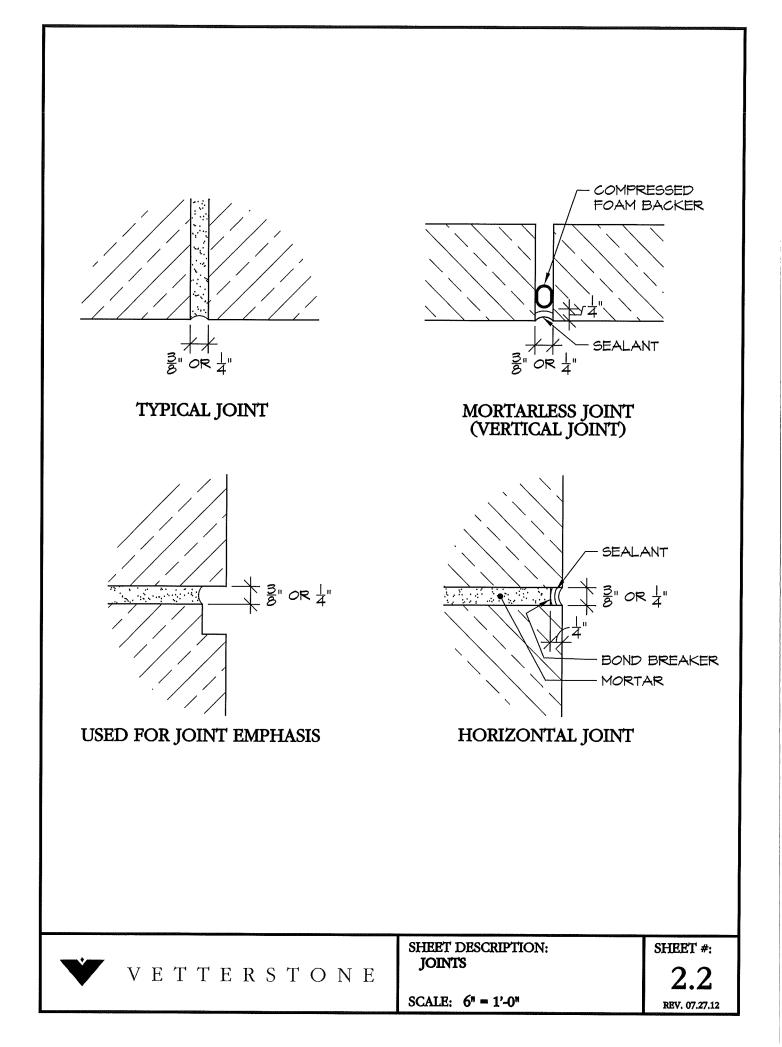


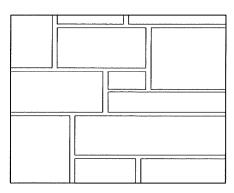






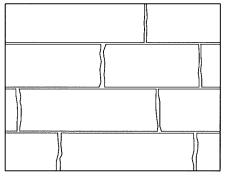






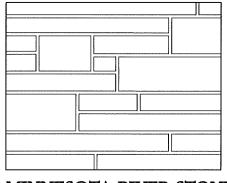
RANDOM ASHLAR PATTERN, IN COLORS OF PINK, BUFF, CREAM, GREY AND BLENDING VARIATIONS WITH HEIGHT RANGES OF: 15% 2 1/6" AND 50% 4 5/6" AND 35% 7 1/2". STANDARD JOINT SIZE 1/2".

MINNESOTA VALLEY STONE



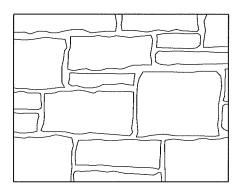
STRAIGHT COURSED OF ALL ONE HEIGHT: 2 1/6", 3 1/2", 4 5/6", AND 7 1/2" PATTERN IN COLORS OF PINK, BUFF, CREAM, GREY AND BLENDING VARIATIONS, WITH COMBINATION OF SPLIT AND SAWED ENDS. STANDARD JOINT SIZE 1/2".

NORTHERN VALLEY STONE



RANDOM ASHLAR PATTERN, IN COLORS OF PINK, BUFF, CREAM, GREY AND BLENDING VARIATIONS WITH HEIGHT RANGES OF: 40% 2 1/6" AND 60% 4 5/6". STANDARD JOINT SIZE 1/2".

MINNESOTA RIVER STONE



RANDOM ASHLAR PATTERN, IN COLORS OF PINK, BUFF, CREAM, GREY, WHITE AND BLENDING VARIATIONS WITH HEIGHT RANGES OF: 20% | $1/2^{"-3"}$ and 50% 3"-6" and 30% 6"-9". STANDARD JOINT SIZE 3/8" TO | 1/2".

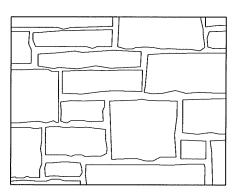
NORTHERN FOREST STONE



VETTERSTONE

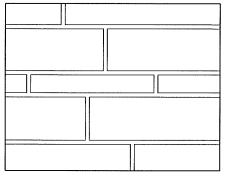
SHEET DESCRIPTION: WALL FACING SPLITFACE VENEER PATTERNS SCALE: N.T.S SHEET #: 3.1

REV. 07.27.12



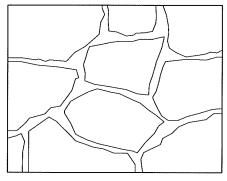
SHALL BE LAID IN RANDOM ASHLAR PATTERN AND SHALL BE FURNISHED IN RANDOM LENGTH STRIPS WITH HEIGHT RANGES OF: 20% | 1/2"-3" AND 50% 3"-6" AND 30% 6"-9". STANDARD JOINT SIZE 3/8" TO | 1/2".

MINNESOTA QUARRY CREEK RANDOM ASHLAR STONE



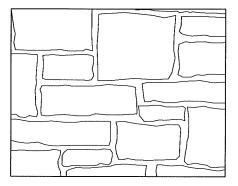
COURSED ASHLAR PATTERN, IN COLORS OF PINK, BUFF, CREAM, GREY AND BLENDING VARIATIONS WITH HEIGHT RANGES OF: 15% 2 1/6" AND 33% 4 5/6" AND 52% 7 1/2". STANDARD JOINT SIZE 1/2".

MINNESOTA PLAINS STONE



SHALL BE LAID IN RANDOM FIELD STONE PATTERN. MORTAR JOINTS SHALL BE ALLOWED TO VARY FROM 1/2" TO I 1/2". STONE SHALL BE FURNISHED TO THE JOB IN SIZES RANGING UP TO 12 SQUARE FEET. STANDARD JOINT SIZE 3/8" TO I 1/2".

MINNESOTA QUARRY CREEK RANDOM FIELD STONE



RANDOM ASHLAR PATTERN, IN COLORS OF PINK, BUFF, CREAM, GREY AND BLENDING VARIATIONS WITH HEIGHT RANGES OF: 20% | 1/2"-3" AND 50% 3"-6" AND 30% 6"-9". STANDARD JOINT SIZE 3/8" TO | 1/2".

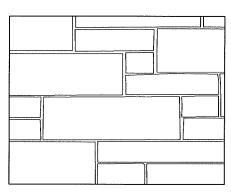
MINNESOTA SPRING STONE



VETTERSTONE

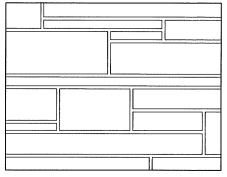
SHEET DESCRIPTION: WALL FACING SPLITFACE VENEER PATTERNS SCALE: N.T.S SHEET #:

3.2 REV. 07.27.12



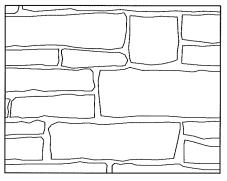
RANDOM ASHLAR PATTERN, IN COLORS OF PINK, BUFF, CREAM, GREY AND BLENDING VARIATIONS WITH HEIGHT RANGES OF: 40% 3 1/2" AND 60% 7 1/2", WITH COMBINATION OF SPLIT AND SAWED ENDS. STANDARD JOINT SIZE 1/2".

NORTHERN HILLS STONE



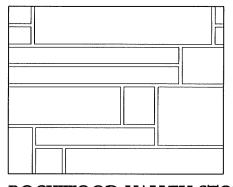
RANDOM ASHLAR PATTERN, IN COLORS OF PINK, BUFF, CREAM, GREY AND BLENDING VARIATIONS WITH HEIGHT RANGES OF: 10% 7/8" AND 35% 2 1/6" AND 35% 3 1/2" AND 20% 4 5/6". STANARD JOINT SIZE 1/2".

MINNESOTA RANCH STONE



RANDOM ASHLAR PATTERN, WITH HEIGHT RANGES OF: 20% I I/2"-3" AND 50% 3"-6" AND 30% 6"-9". STANDARD JOINT SIZE 3/8" TO I I/2".

CEDAR CREEK RANDOM ASHLAR



RANDOM ASHLAR SPLIT FACE STONE WITH HEIGHT RANGES OF: 15% 2 1/6" AND 50% 4 5/6" AND 35% 7 1/2". STANDARD JOINT SIZE 1/2".

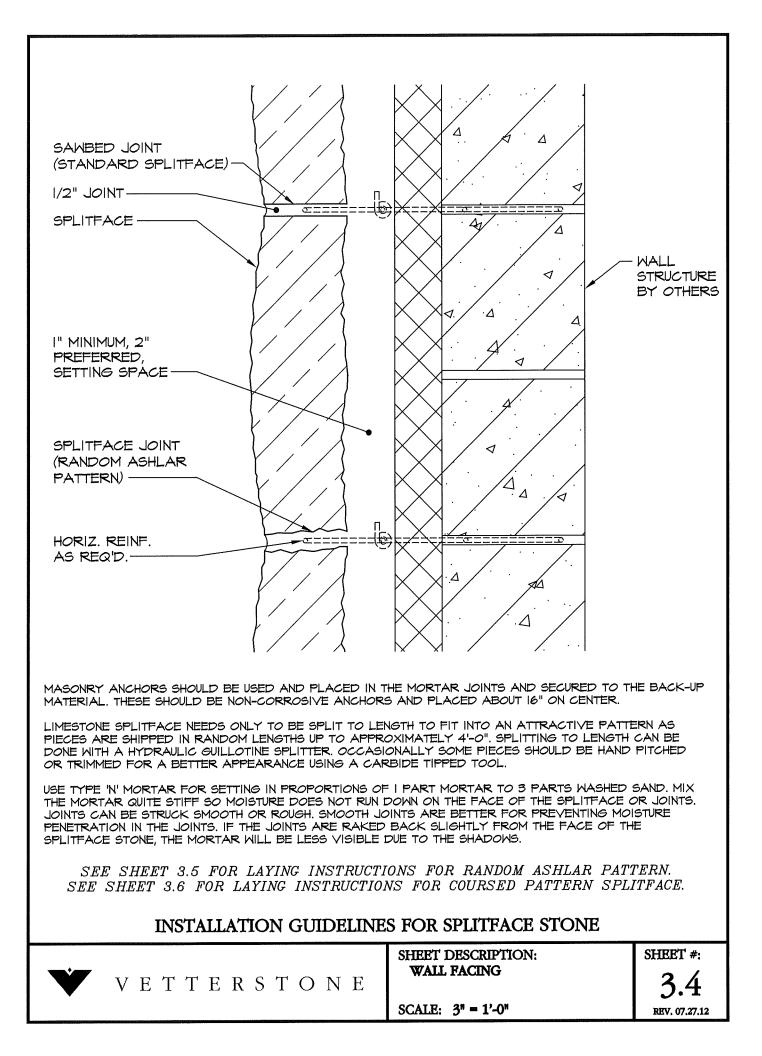
ROCKWOOD VALLEY STONE



VETTERSTONE

SHEET DESCRIPTION: WALL FACING SPLITFACE VENEER PATTERNS SCALE: N.T.S SHEET #:

3.3 REV. 07.27.12



TO ACHIEVE THE MOST NATURAL EFFECT WITH THIS STONE AND TO OBTAIN AN EASY LAYING JOB, THE FOLLOWING POINTS ARE VERY IMPORTANT:

QUARRY CREEK, MINNESOTA SPRING, AND NORTHERN FOREST BACKS ARE SAWED. ALL OTHERS ARE SPLIT FRONT AND BACK

BE SURE THAT THE SAWED SURFACE IS ALWAYS TO THE BACK. THIS WILL ALWAYS PUT THE NATURAL BED FACE OR SPLITFACE TO THE FACE OF THE WALL.

DO NOT USE THE SAWED SURFACE FOR THE TOP OR BOTTOM BED. THIS STONE SHOULD ALWAYS BE LAID WITH THE SAWED SURFACE TO THE BACK OF THE WALL.

LET THE JOINTS VARY FROM 1/2" TO 1-1/2"

THIS NOT ONLY GIVES THE DESIRED NATURAL EFFECT, BUT RESULTS IN EASE OF LAYING.

KEEP TRIMMING OF THE STONE TO AN ABSOLUTE MINIMUM SOMEWHAT ROUGH OR IRREGULAR ENDS ARE NOT ONLY SATISFACTORY BUT DESIRABLE. THE NATURAL FEEL IS BETTER SERVED BY SOME IRREGULARITY OF THE ENDS.

KEEP ALL STONES HORIZONTAL AND KEEP ALL MORTAR JOINTS FULL. ALL STONE SHALL BE LAID HORIZONTAL AND NOT SLOPING UP OR DOWN.

CARE SHOULD BE TAKEN TO BE SURE THAT THE BED JOINTS AND HEAD JOINTS ARE FULL.

USE THE STONE WITH PROJECTIONS AND RECESSIONS

THIS STONE VARIES FROM 2-1/2" TO 5-1/2" IN THICKNESS. THE 2-1/2" STONES WILL PROVIDE 1-1/2" RECESSIONS FROM A NORMAL WALL FACE OF 4". THE THICKER STONES OF 5-1/2" WILL PROVIDE 1-1/2" PROJECTIONS. DO NOT TRY TO ACHIEVE A WALL WITH A FLAT FACE.

FOLLOWING THE ABOVE POINTS WILL RESULT IN AN EXCELLENT WALL OF THE DESIRED APPEARANCE, BUT IT WILL BE A RELATIVELY FAST, EASILY LAID WALL.

LAYING INSTRUCTIONS FOR RANDOM ASHLAR PATTERN



V E T T E R S T O N E

WALL FACING

SCALE: 3" = 1'-0"

SHEET DESCRIPTION:

SHEET #: 3.5 REV. 07.27.12 MINNESOTA NORTHERN VALLEY STONE AND THE STANDARD SPECIFICATIONS FOR LAYING IT HAVE BEEN DESIGNED FOR MAXIMUM WALL PRODUCTION. THE BASIC WORK METHODS HAVE BEEN DESIGNED TO BE SIMILAR TO THOSE USED IN LAYING CONCRETE BLOCK. ALTHOUGH THE USE OF RANDOM LENGTHS REQUIRES SPLITTING TO ADJUST FOR WALL LENGTHS, THE SPLITFACE TEXTURE IS AN OFFSETTING FACTOR.

KEY POINTS TO BE CONSIDERED ARE THE FOLLOWING:

QUARRY CREEK, MINNESOTA SPRING, AND NORTHERN FOREST BACKS ARE SAWED ALL OTHERS ARE SPLIT FRONT AND BACK

BE SURE THAT THE SAWED SURFACE IS ALWAYS TO THE BACK. THIS WILL ALWAYS PUT THE NATURAL BED FACE TO THE FACE OF THE WALL.

DO NOT USE THE SAWED SURFACE FOR THE TOP OR BOTTOM BED. THIS STONE IS EASIEST TO LAY BY ALWAYS PUTTING THE SAWED SURFACE TO THE BACK OF THE WALL.

SPLIT FACE

THE STONE CAN BE USED WITH SPLIT FACE AS FURNISHED. THE TOP AND BOTTOM BEDS ARE SAWED. SPLIT WITH A STRAIGHT BLADED SPLITTER, THIS STONE HAS STRAIGHT LINES TOP AND BOTTOM FOR EASIEST ALIGNMENT AND JOINT TOOLING.

SAWED ENDS

NORTHERN VALLEY STONE IS PREPARED WITH 50 TO 70% PRE-SAWED ENDS TO PROVIDE EASY STONE USE.

TRIMMING

HAND PITCHING OR ROCK FACING IS ELIMINATED BECAUSE IF A CONVEXITY OR CONCAVITY OCCURS AT THE END OF THE STONE, THIS CAN BE USED FOR WALL TEXTURE.

SPLIT ENDS

SPLIT ENDS MAY BE USED IN COMBINATION WITH SAWED ENDS FOR ADJUSTING TO WALL LENGTH. TOOTH TYPE MASONRY SPLITTERS MAY BE USED. INSTEAD OF SPLITTING THE STONE TOP TO BOTTOM WITH A STRAIGHT BLADED SPLITTER (WHICH PRODUCES CONVEX AND CONCAVE ENDS), A TOOTH TYPE SPLITTER SPLITS FRONT TO BACK BETWEEN THE SPLIT FACES TO ACHIEVE A STRAIGHT LINE CUT. THIS TYPE OF END DOES NOT NEED ADDITIONAL DRESSING BEFORE BEING PUT INTO THE WALL. USE OF A TOOTH TYPE SPLITTER IS ALSO FASTER THAN USE OF A SAW. CORNERS ARE PRODUCED EASILY. BY TAKING STONES WHICH ARE A UNIFORM THICKNESS TOP TO BOTTOM, TWO FULL-RETURN CORNER PIECES ARE PROVIDED WITH ONE SPLIT (PRODUCING 16" OF CORNER VERTICAL HEIGHT).

SETTING AND JOINT ELIMINATION

THE AVERAGE STONE LENGTH WILL RANGE FROM 2'-9" TO 3'-0" LONG. WITH A STONE WEIGHT OF 29.2 POUNDS PER LINEAL FOOT, THE AVERAGE PIECE WILL WEIGH FROM 78 TO 87 POUNDS. AT 3'-0" LONG, ONE STONE WILL BE EQUIVALENT TO 13-1/2" FACE BRICK 2-1/4" \times 8" IN SIZE, ELIMINATING 72% OF THE MORTAR REQUIREMENT. BECAUSE OF THE WEIGHT, WE RECOMMEND A TWO MAN PLACEMENT SYSTEM, WITH A SEPARATE MAN HANDLING TROWEL AND MORTAR. IT SHOULD BE NOTED THAT STONE IS SOLID AND HAS NO MANUFACTURED HOLES TO USE UP MORTAR. THE THICKER CONSISTENCY OF STONE MORTAR HELPS TO INCREASE THE MORTAR SAVING, WHICH IS ESTIMATED AT APPROXIMATELY 72%.

CLEANING SAVINGS

BECAUSE A THICKER CONSISTENCY MORTAR IS USED WITH STONE AS COMPARED TO A BRICK WALL, CLEANING CAN BE VIRTUALLY ELIMINATED, FOR AN IMPORTANT SAVING IN CLEANING COST.

ALTHOUGH THE LAST TWO ITEMS PROVIDE SMALL SAVINGS, THE REALLY IMPORTANT SAVING IS THE TIME SPENT ON SPREADING AND TOOLING MORTAR TO YIELD A MUCH FASTER WALL PRODUCTION.

LAYING INSTRUCTIONS FOR COURSED PATTERN SPLITFACE

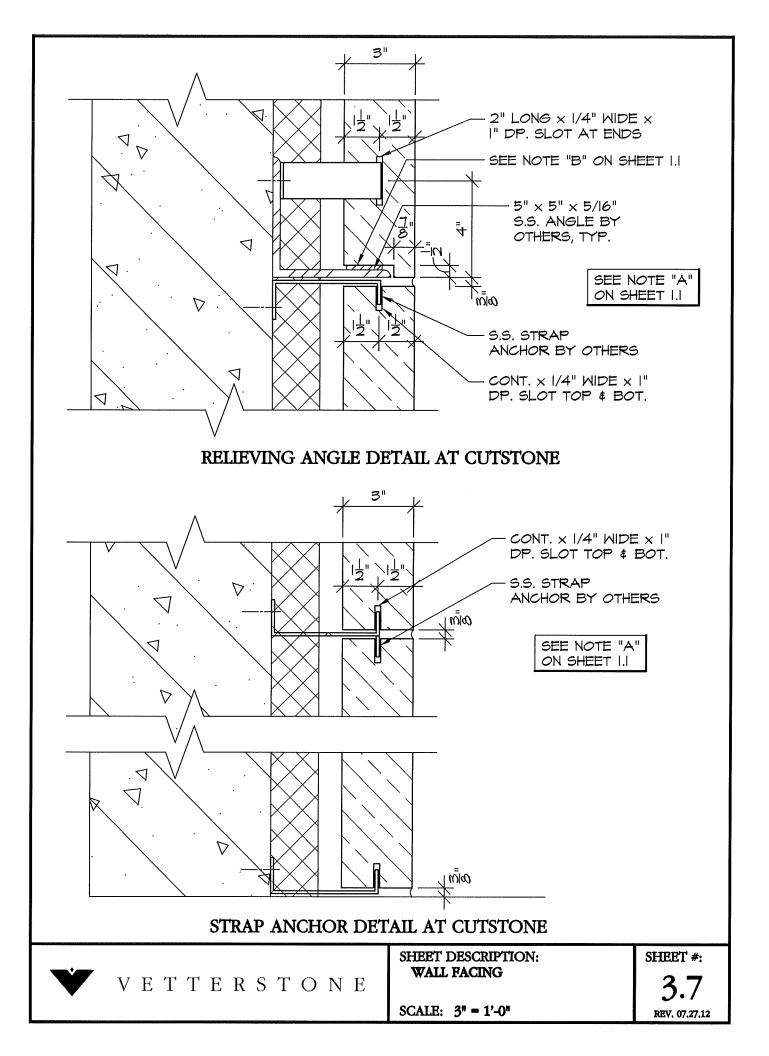


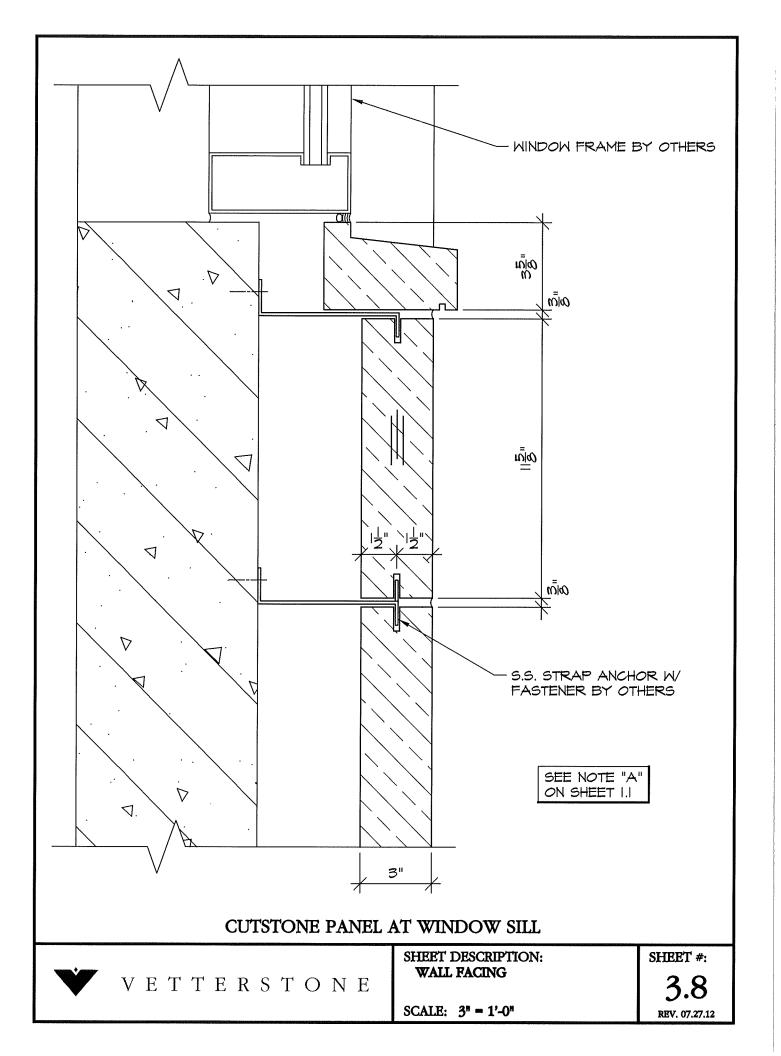
VETTERSTONE

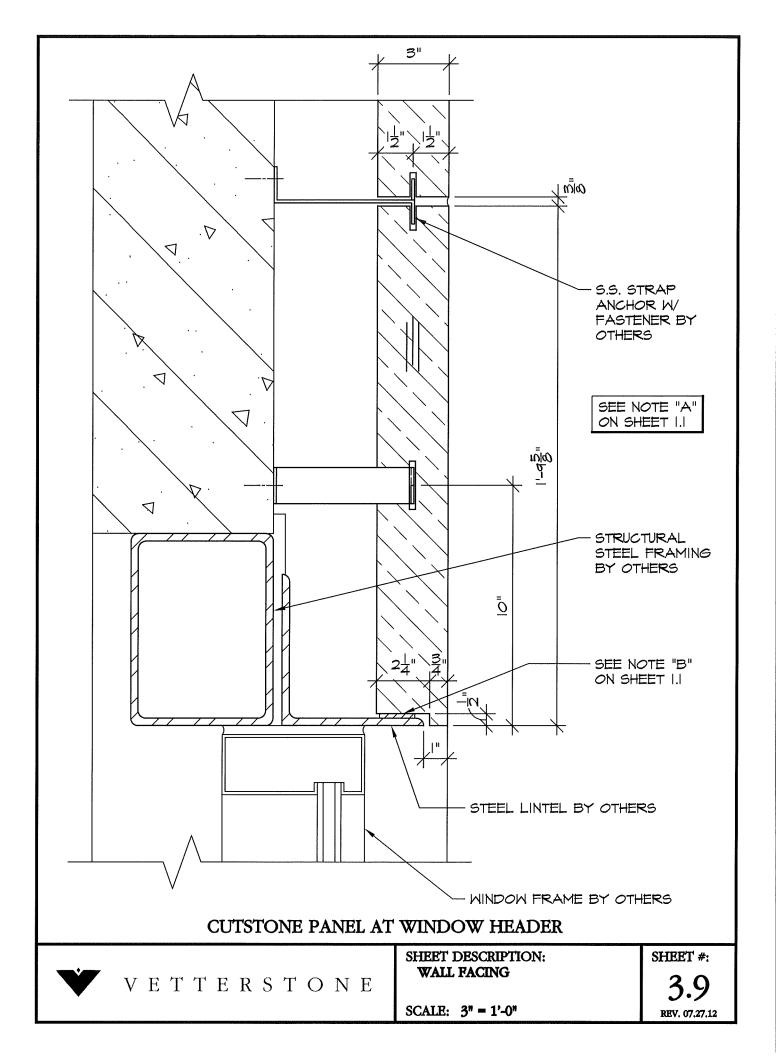
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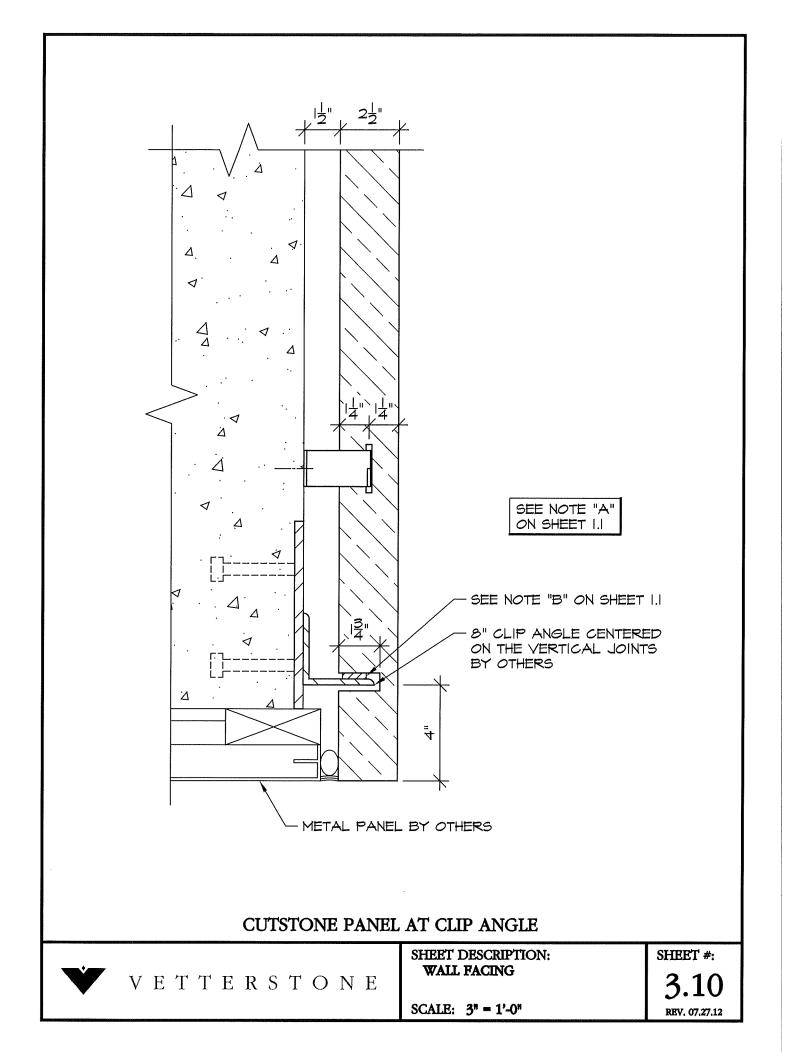
REV. 07.27.12

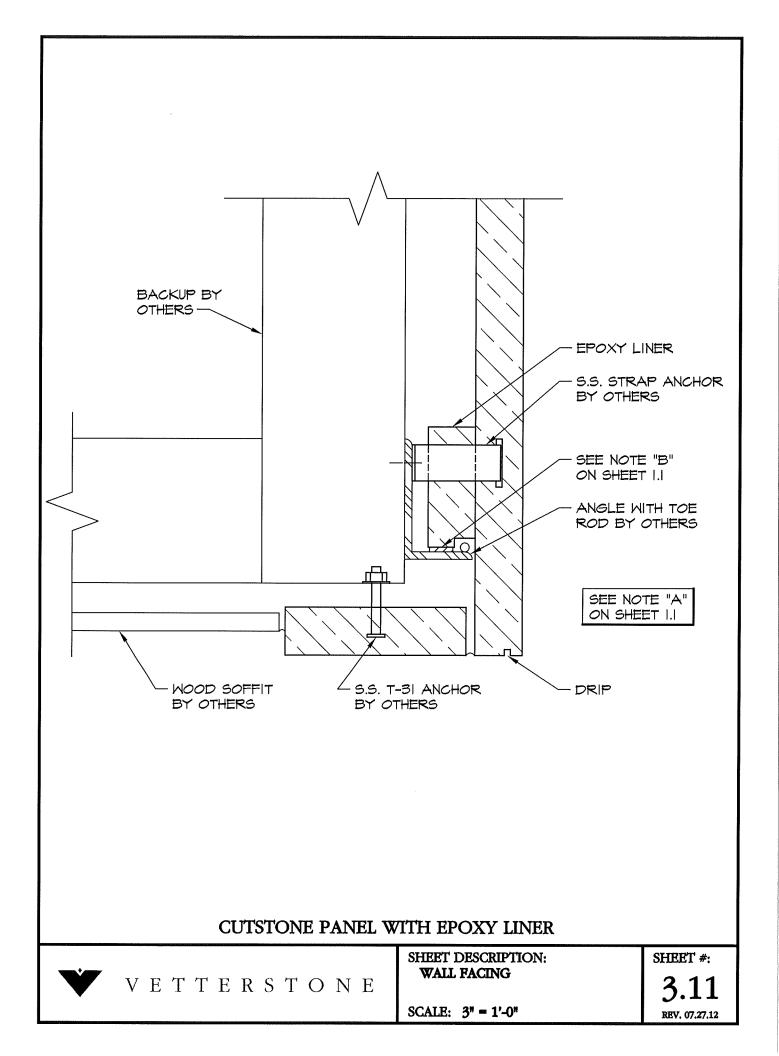
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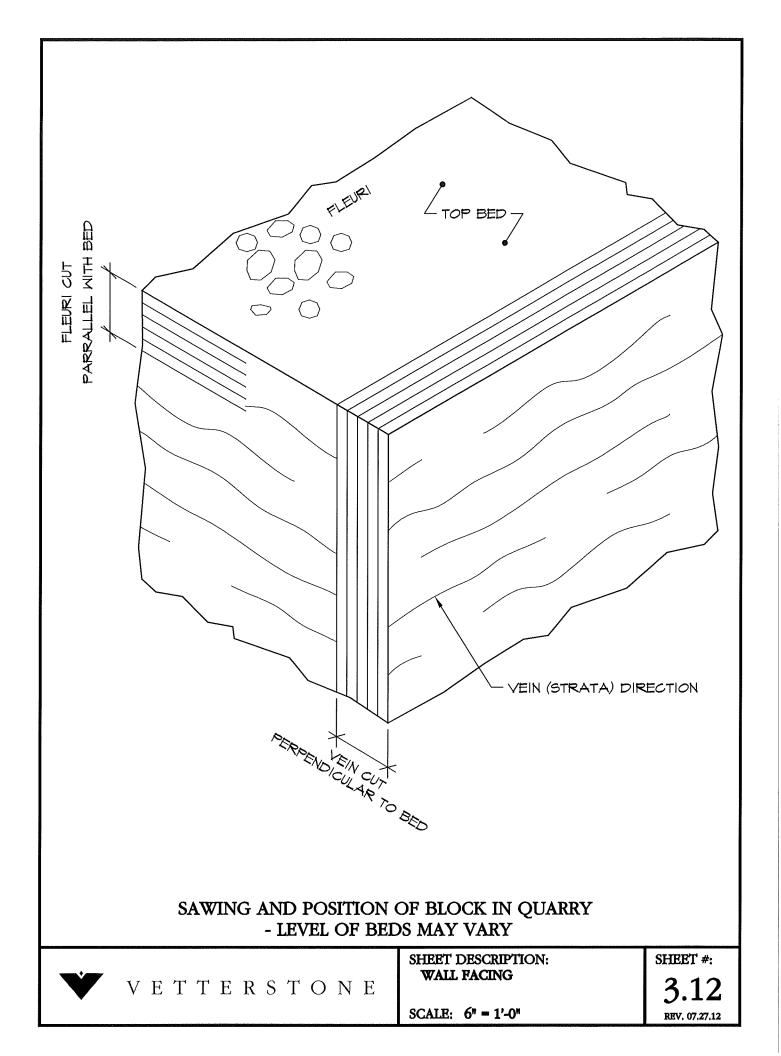


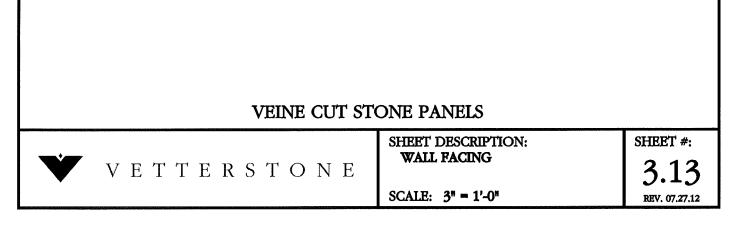








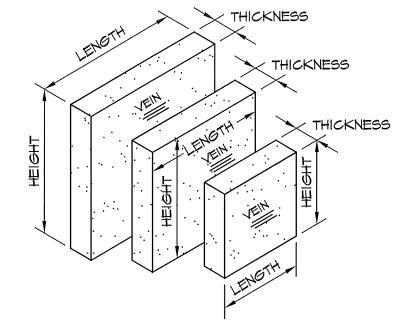


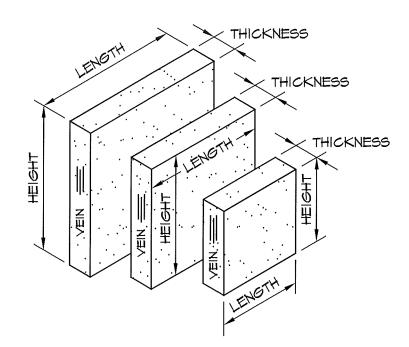


** VARIES BASED ON COLOR OF STONE.

* SIZES SHOWN MAY VARY FROM QUARRY SEASON TO QUARRY SEASON BASED ON CURRENT CONDITIONS. VERIFY CURRENT SIZES WITH YOUR SALES REPRESENTATIVE.

RECOMMENDED MINIMUM THICKNESS	MAXIMUM LENGTH	MAXIMUM HEIGHT
3" (76.2mm)	5'-0" (1524mm)	UP TO 4'-0" (1219.2mm)**
2½" (63.5mm)	5'-0" (1524mm)	UP TO 4'-0" (1219.2mm)**
2" (50.8mm)	5'-0" (1524mm)	2'-0" (609.6mm)





RECOMMENDED MINIMUM THICKNESS	MAXIMUM LENGTH	MAXIMUM HEIGHT
3" (76.2mm)	5'-0" (1524mm)	4'-0" (1219.2mm) **
2 <mark>2</mark> " (63.5mm)	5'-0" (1524mm)	4'-0" (1219.2mm) **
2" (50.8mm)	5'-0" (1524mm)	4'-0" (1219.2mm) **

* SIZES SHOWN MAY VARY FROM QUARRY SEASON TO QUARRY SEASON BASED ON CURRENT CONDITIONS. VERIFY CURRENT SIZES WITH YOUR SALES REPRESENTATIVE.

** SPECIAL LARGER SIZES MAY BE AVAILABLE.

FLEURI CUT STONE PANELS



VETTERSTONE

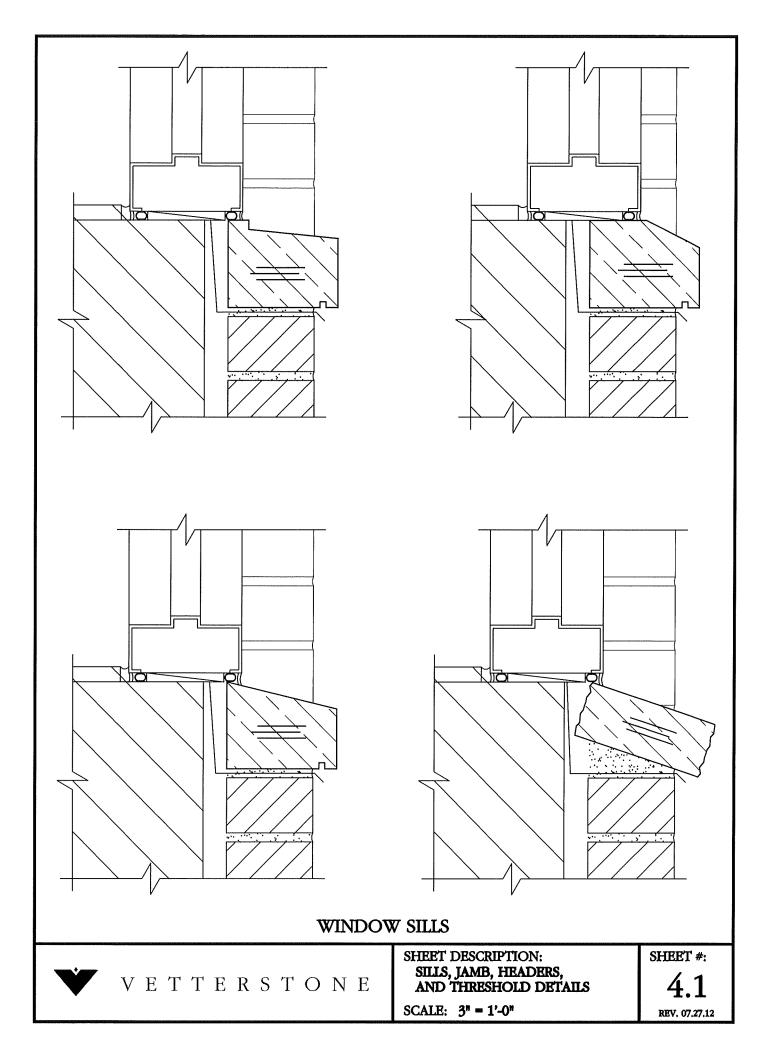
WALL FACING

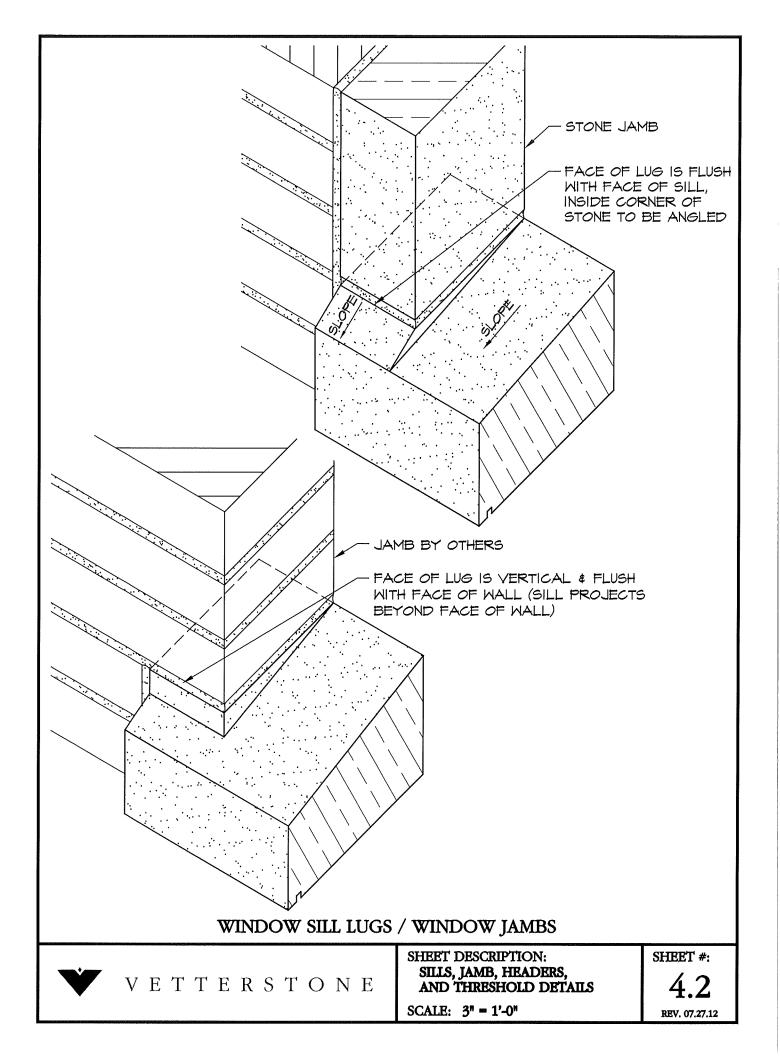
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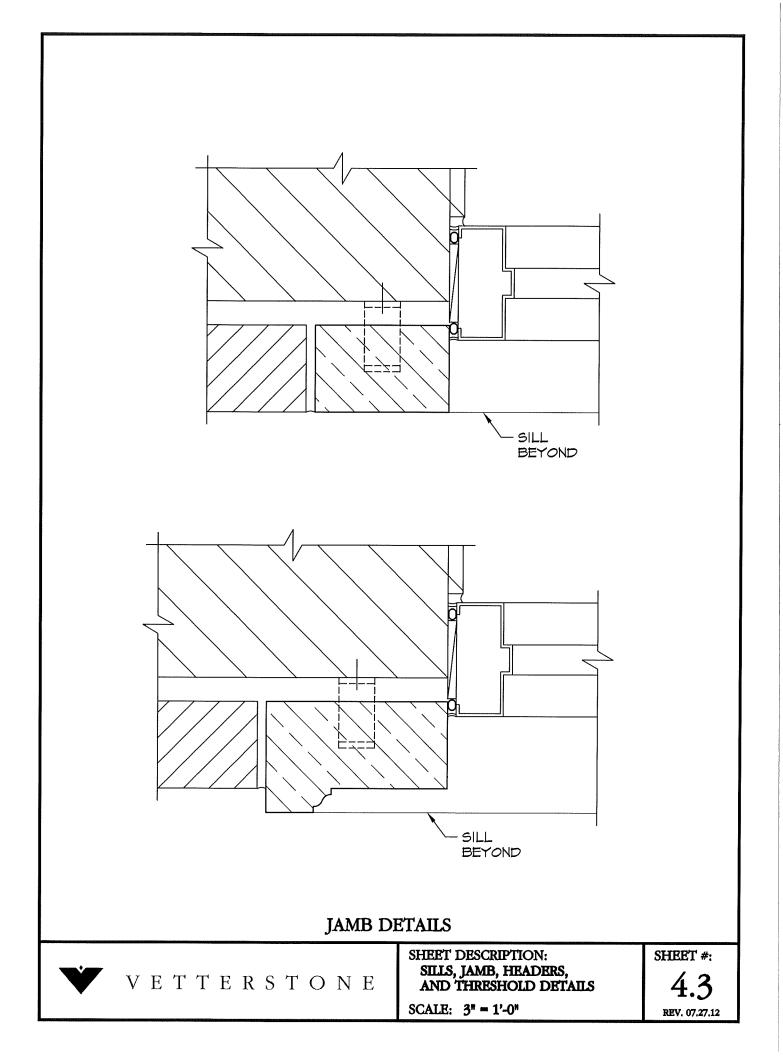
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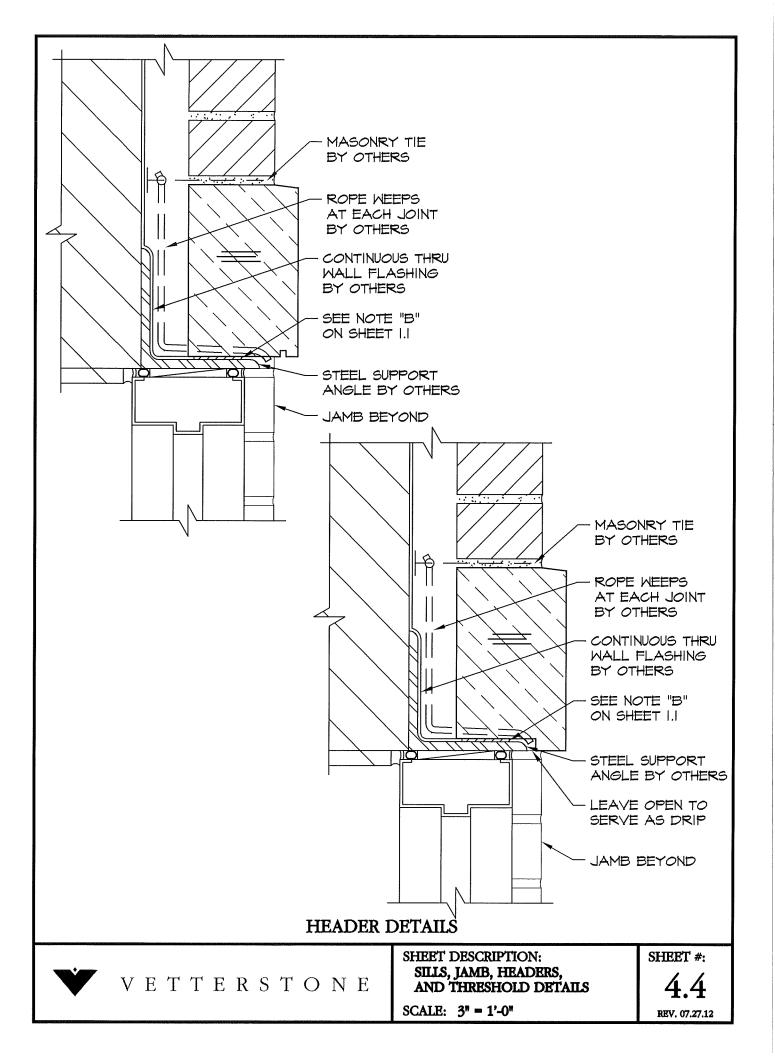
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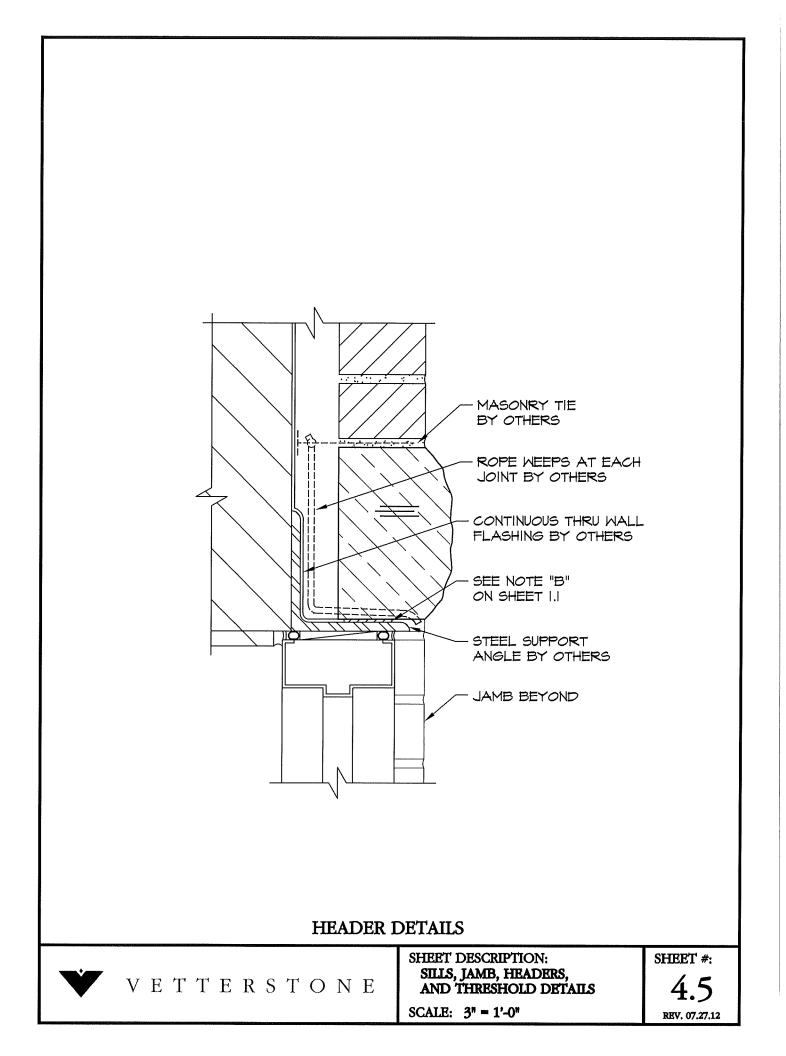
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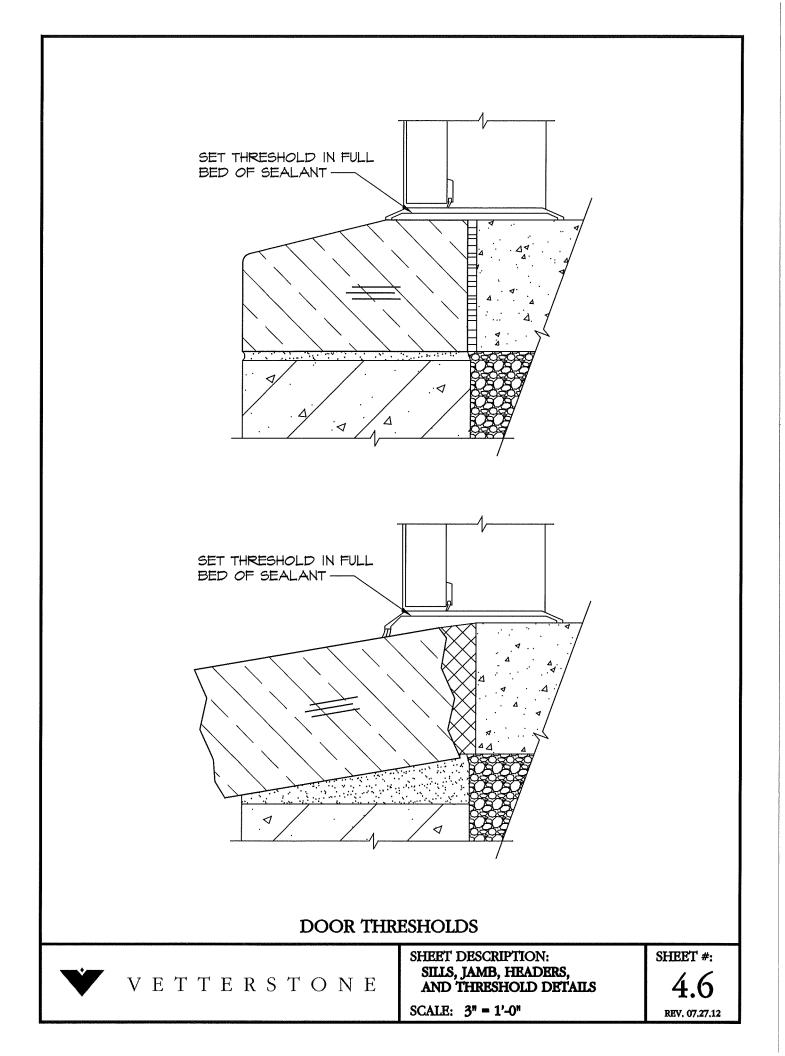


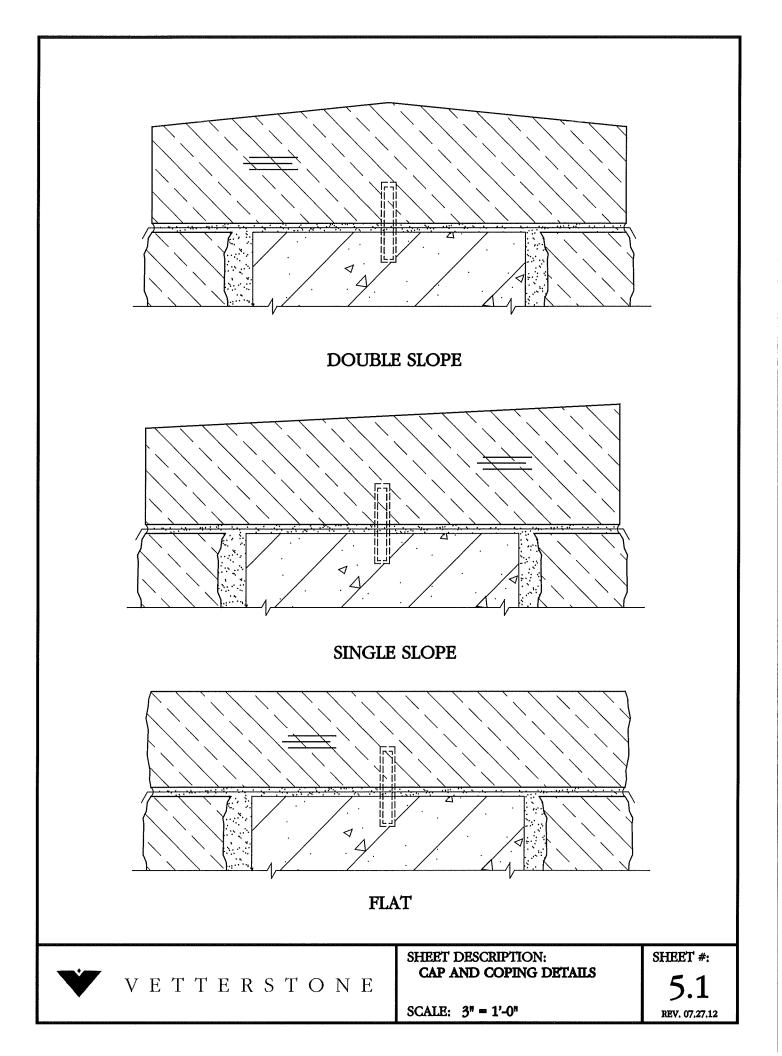


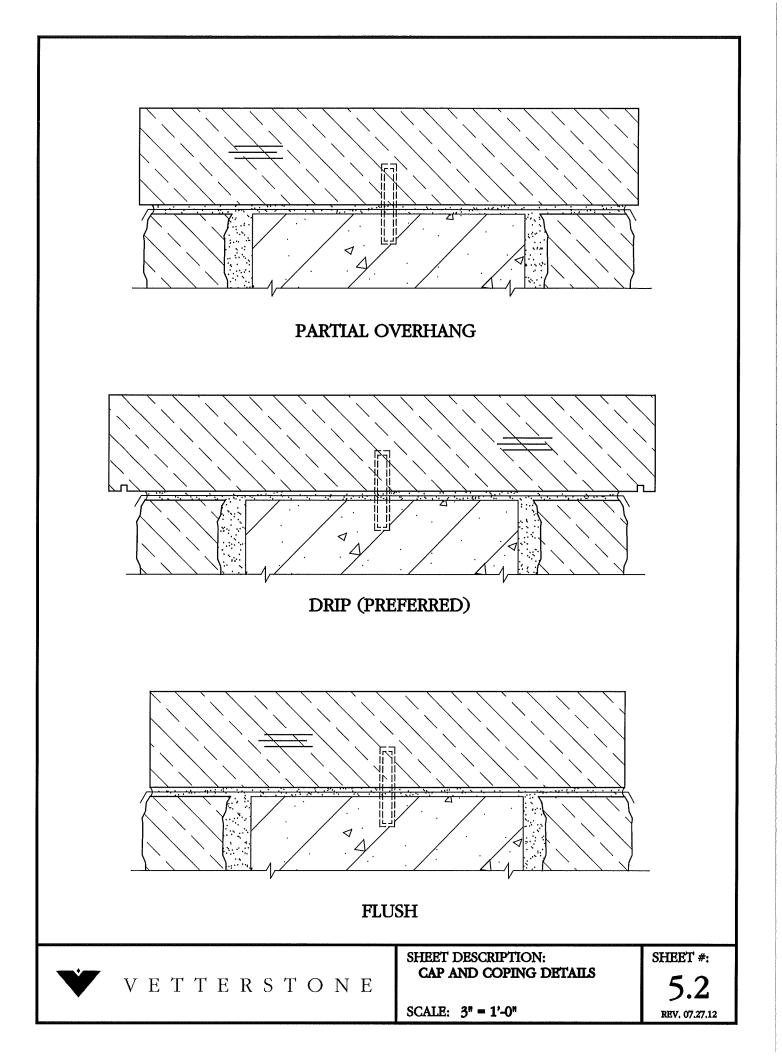


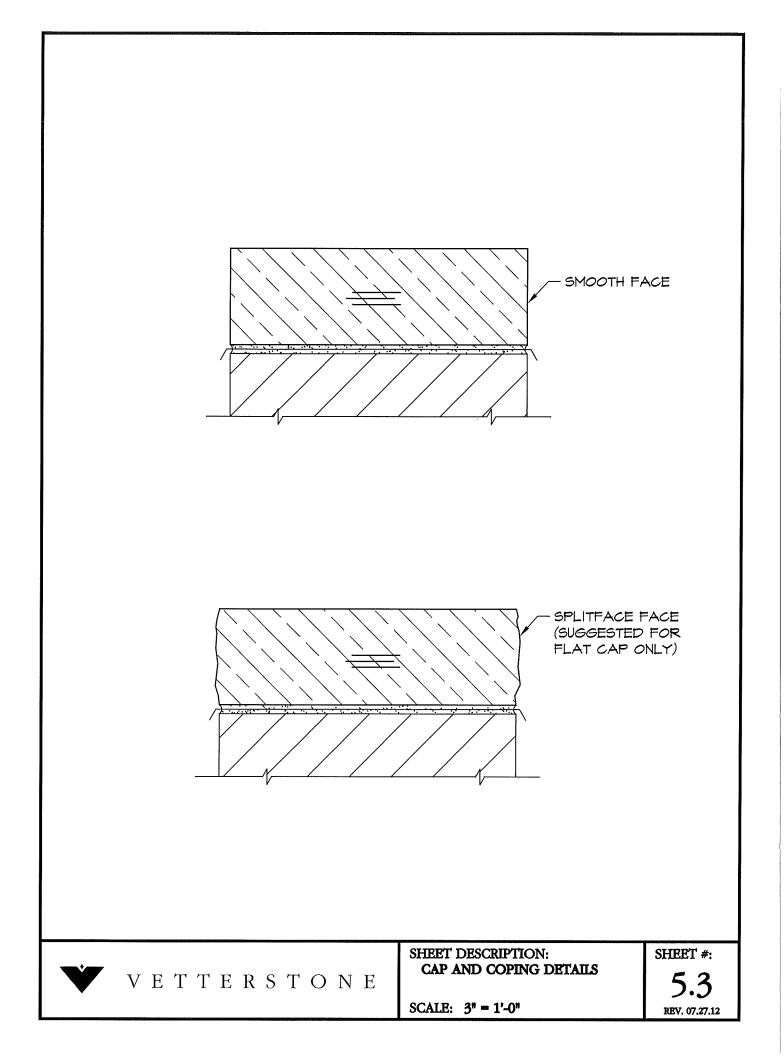


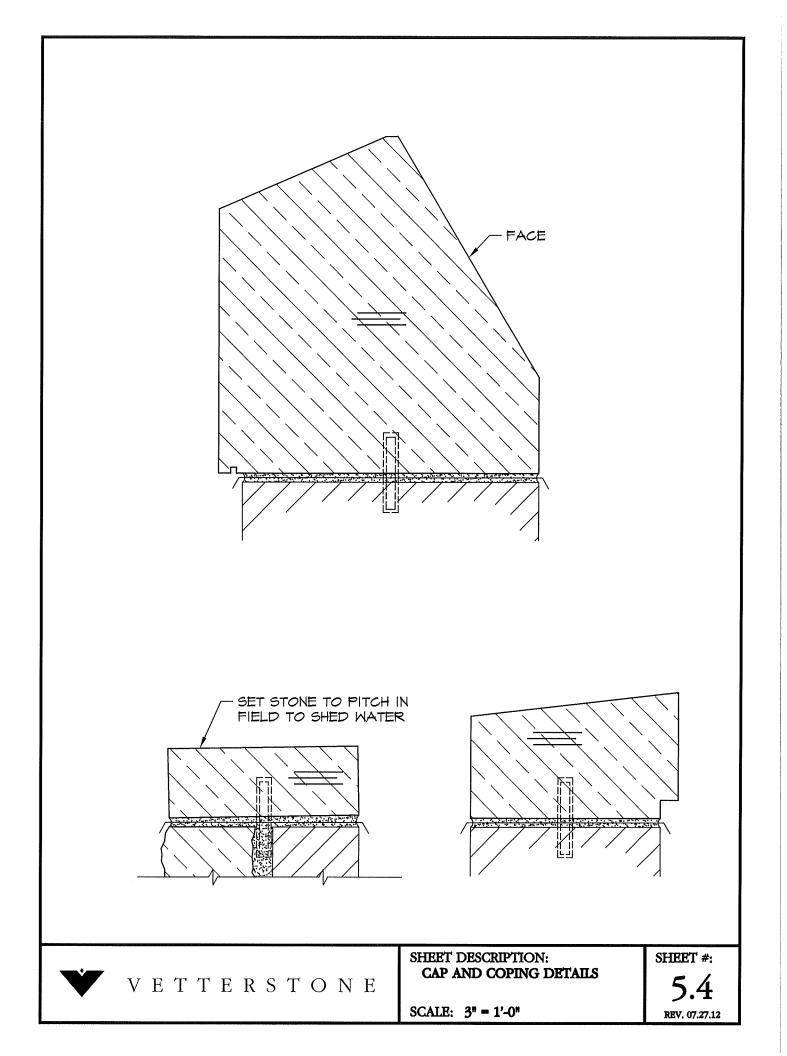


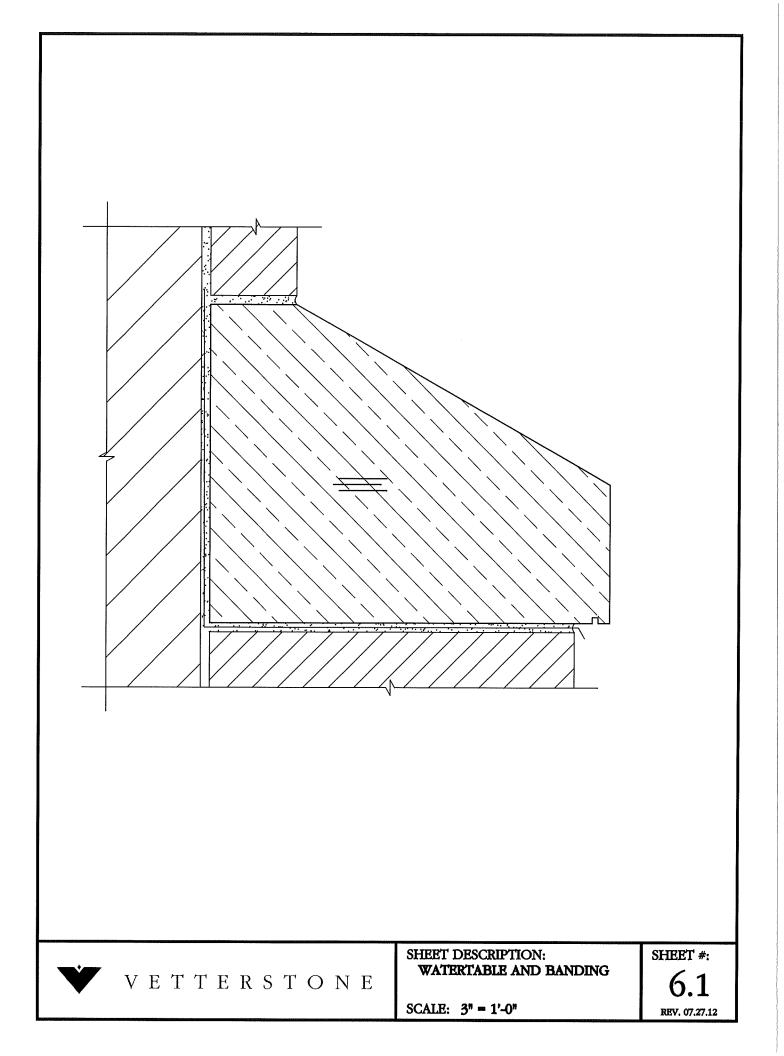


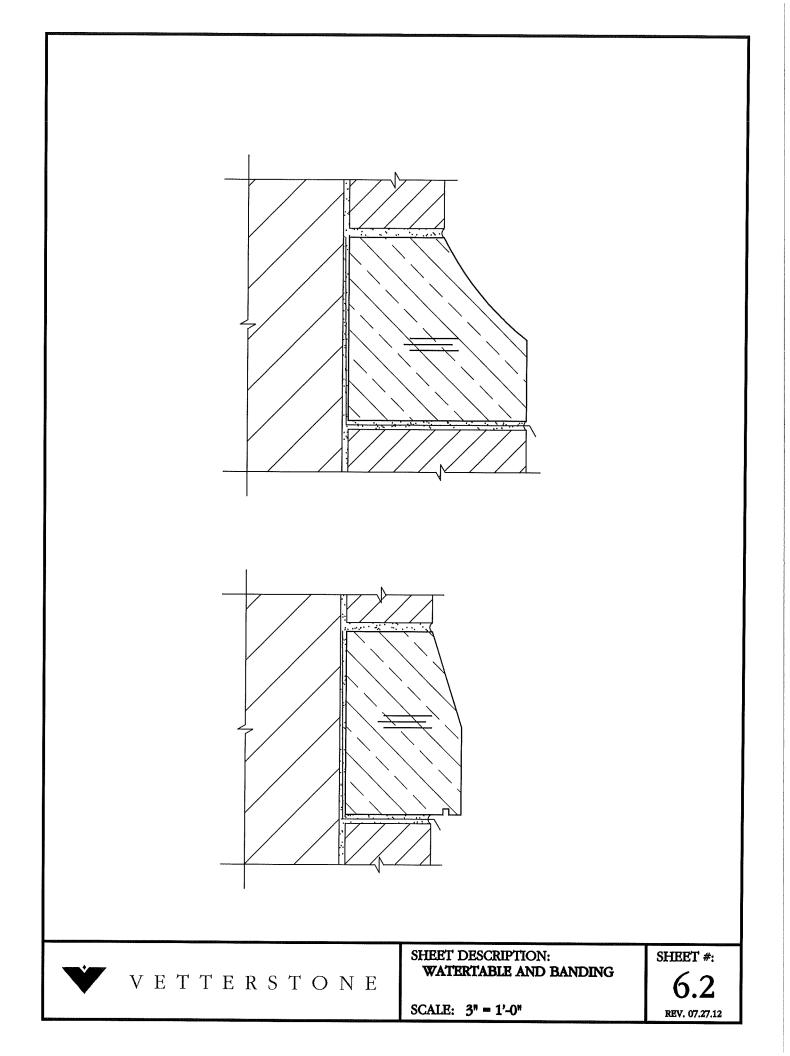


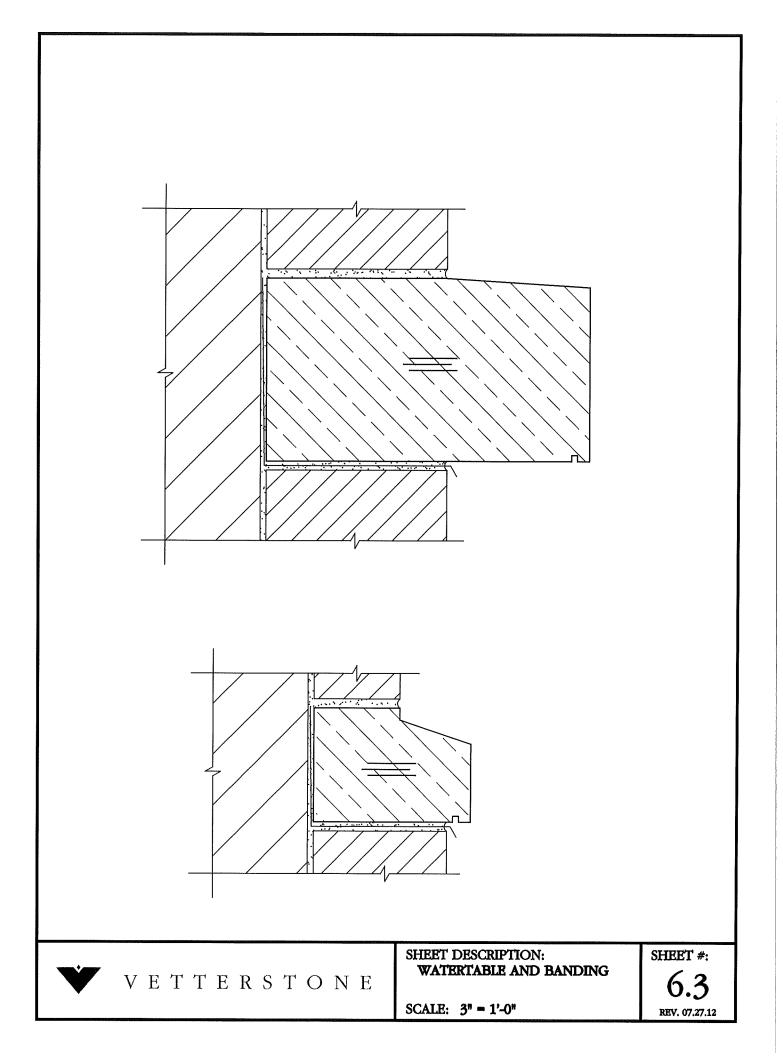


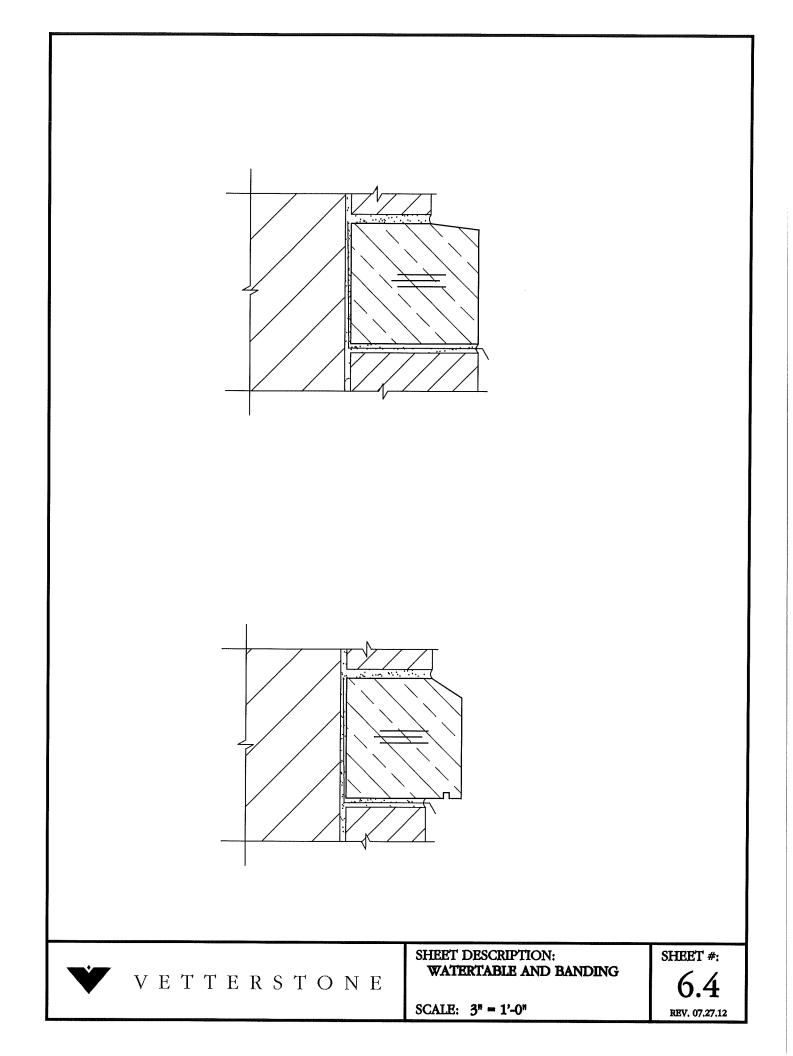


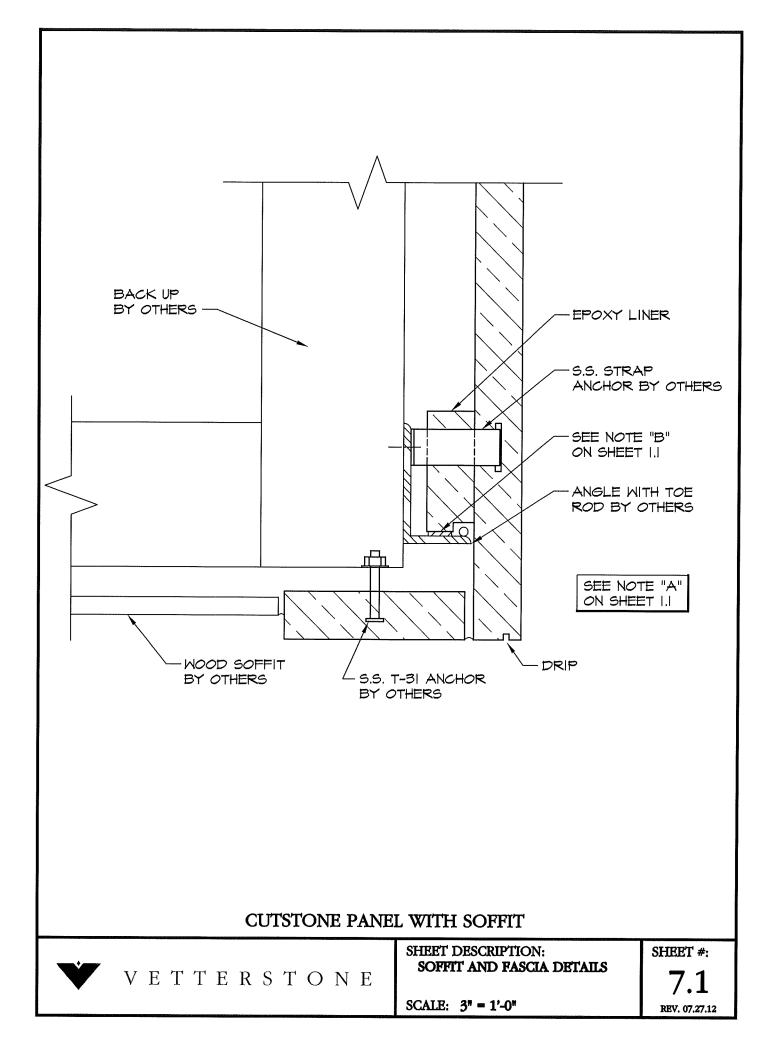


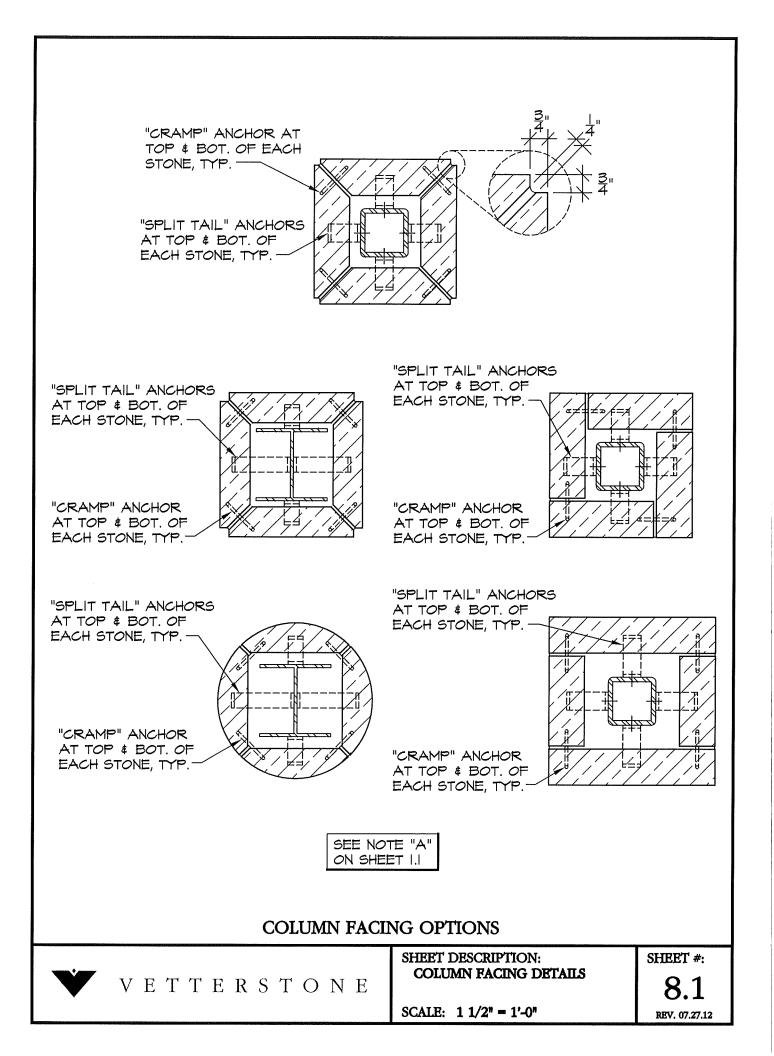


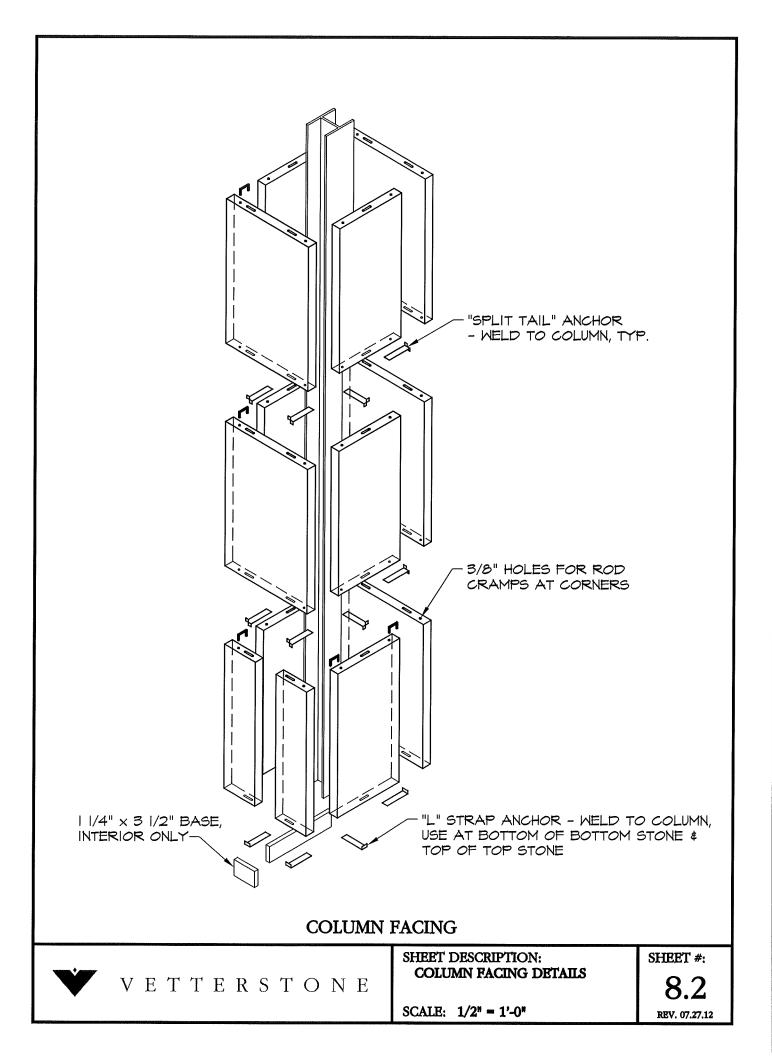


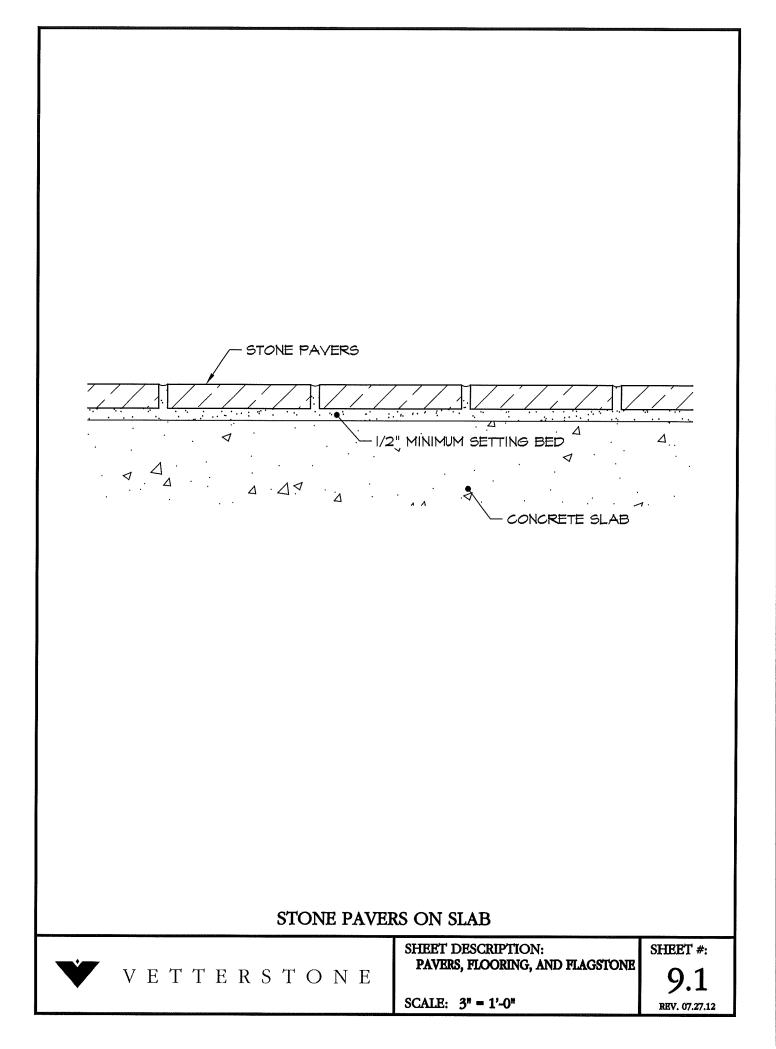


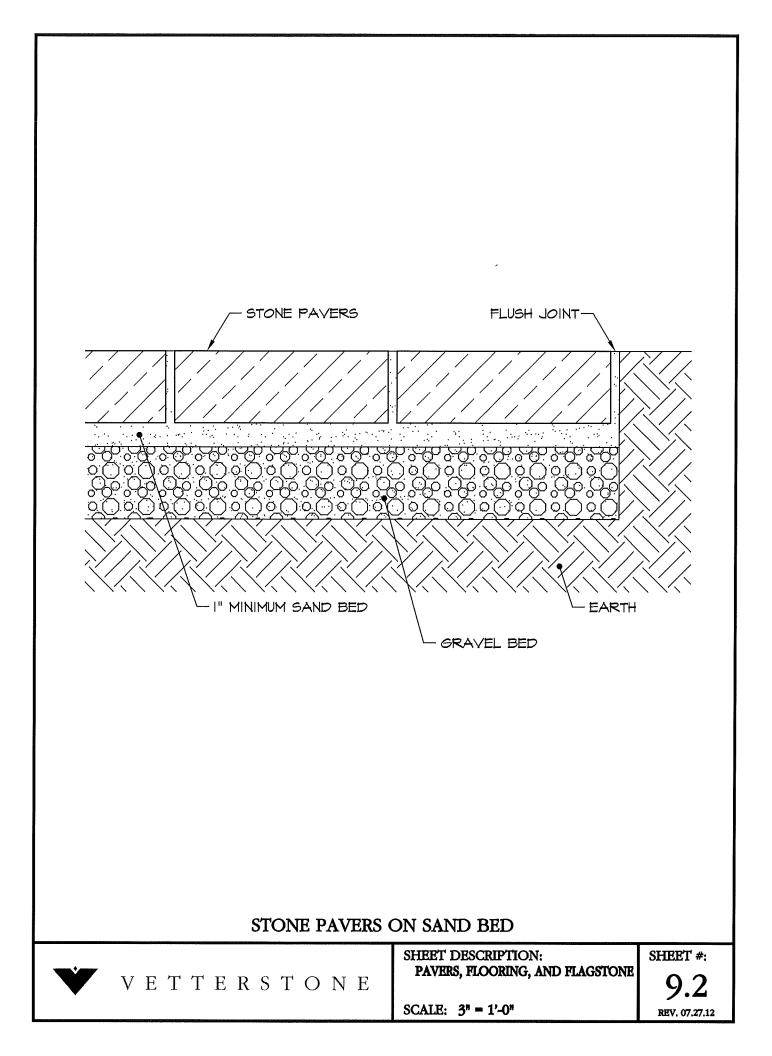


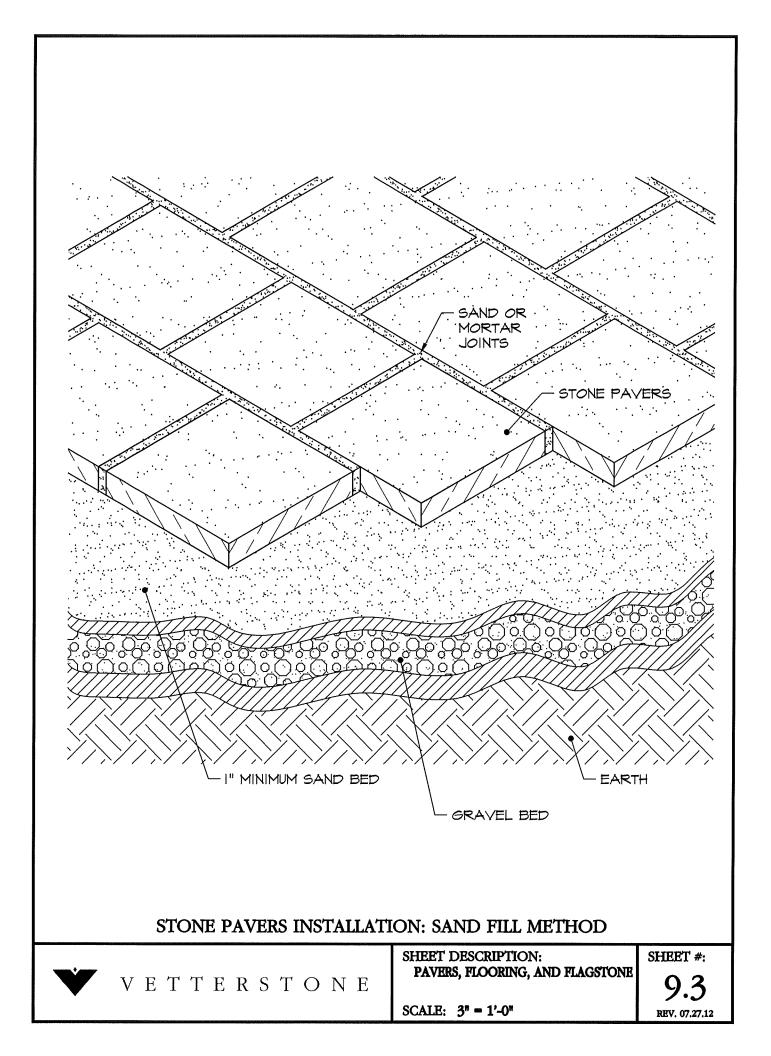


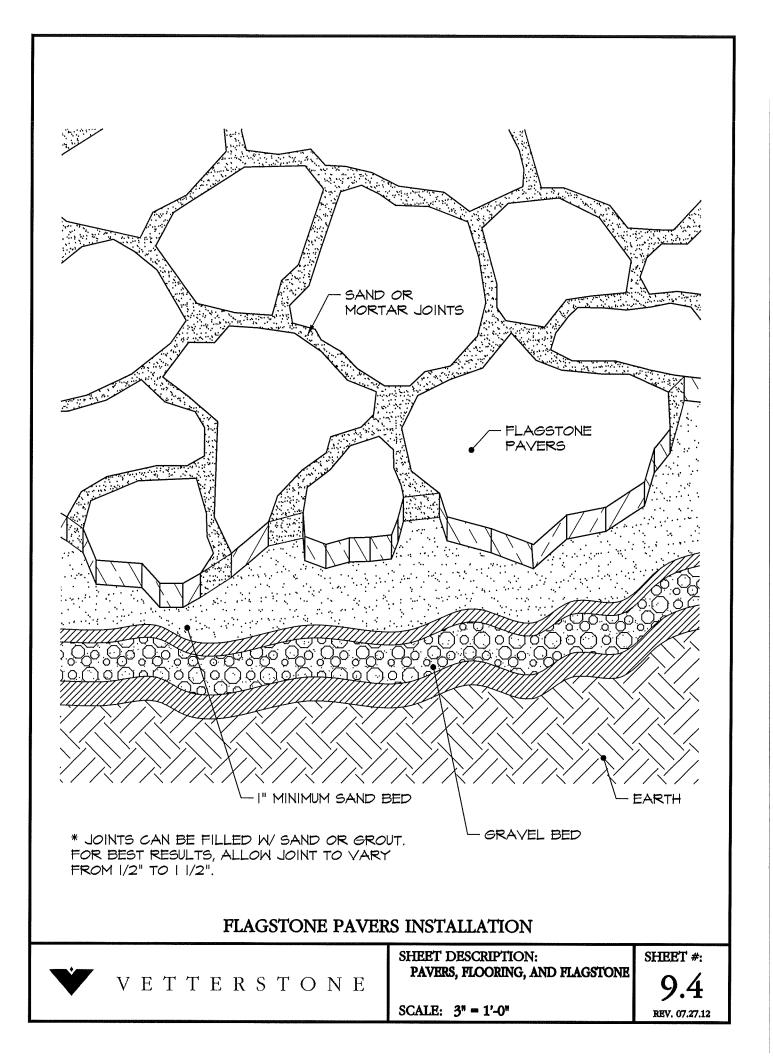


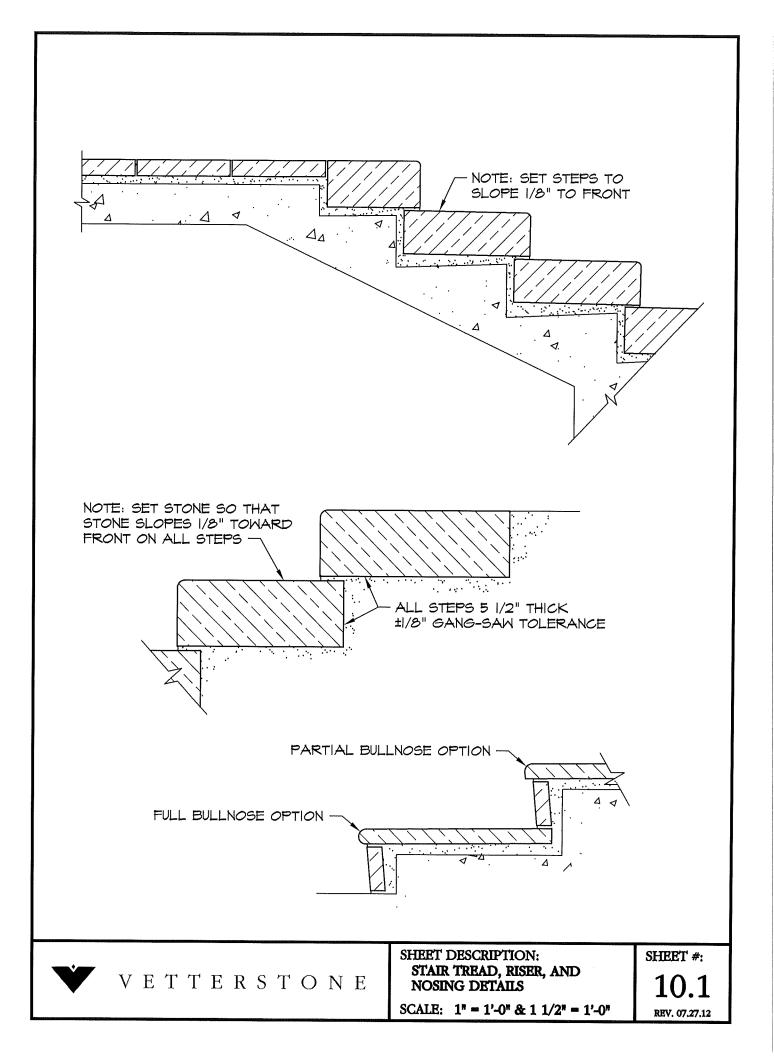


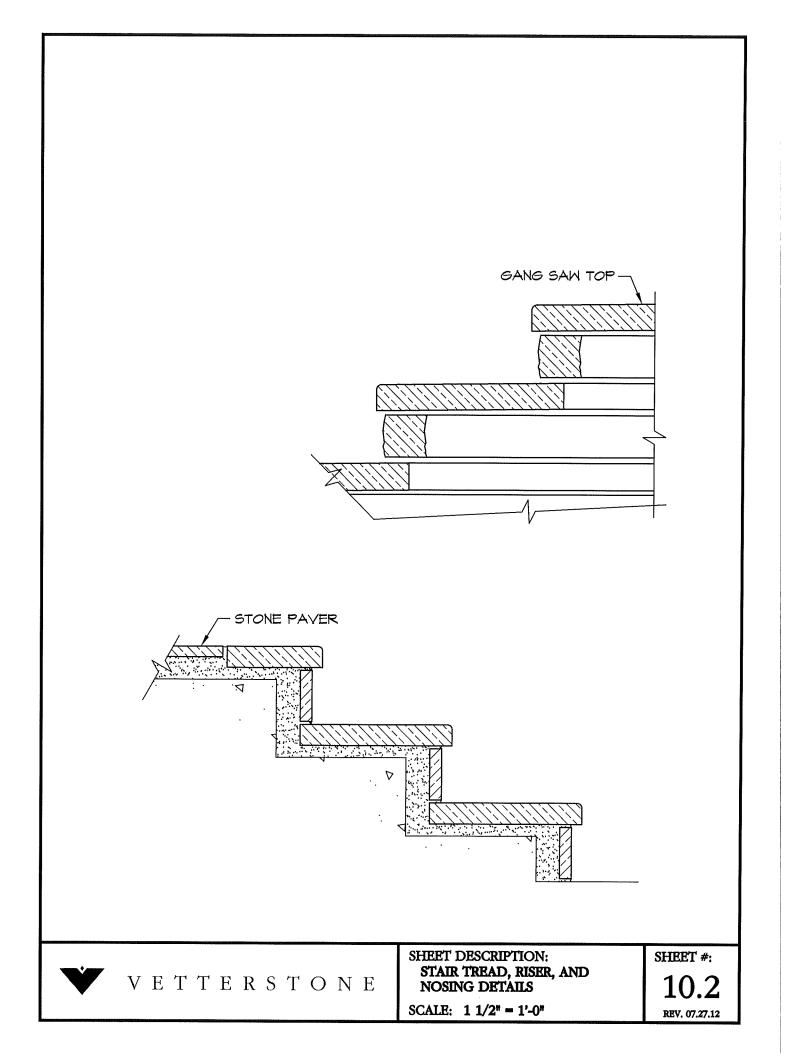


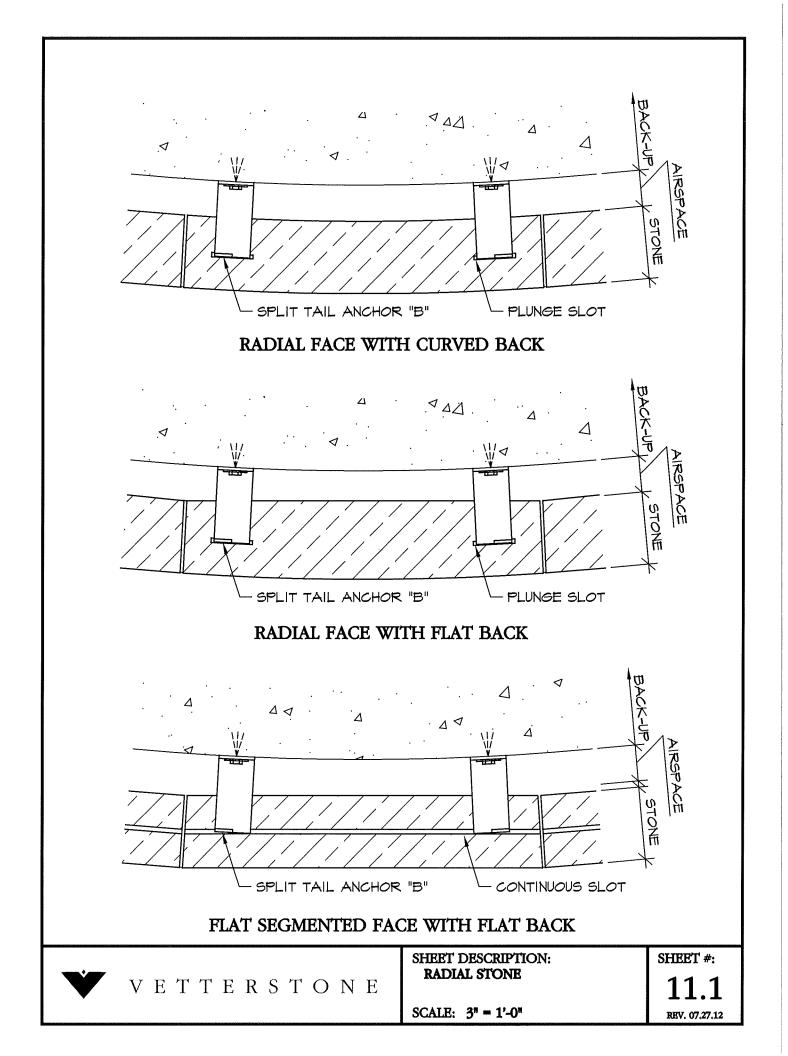


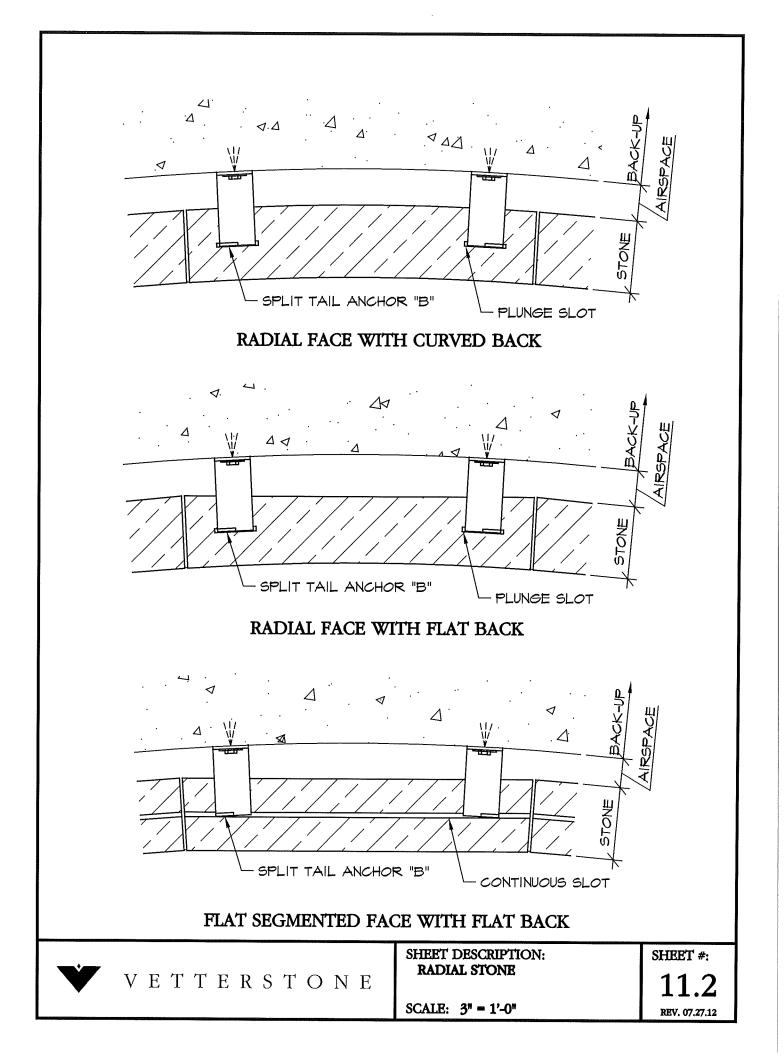


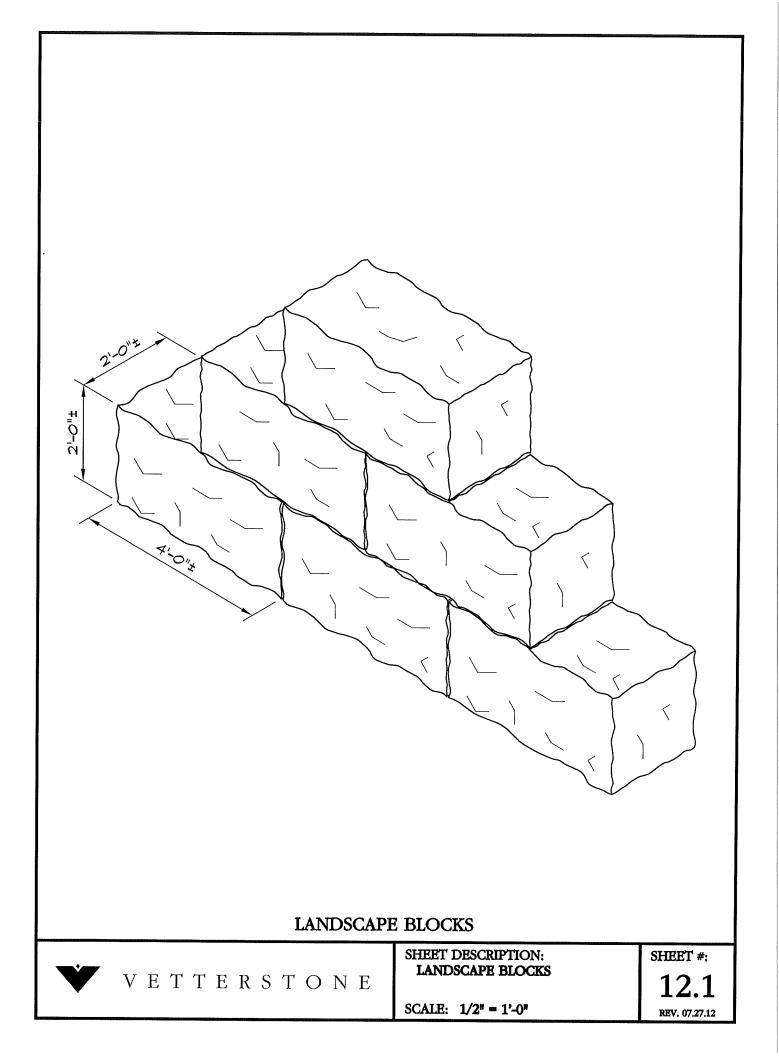


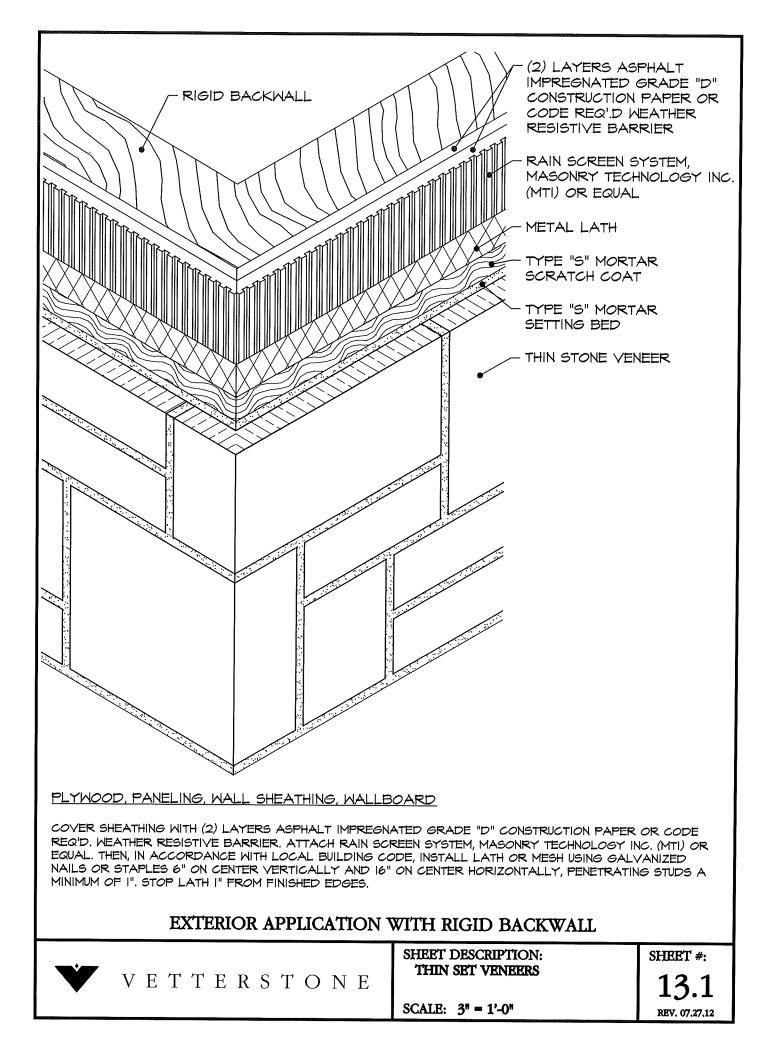


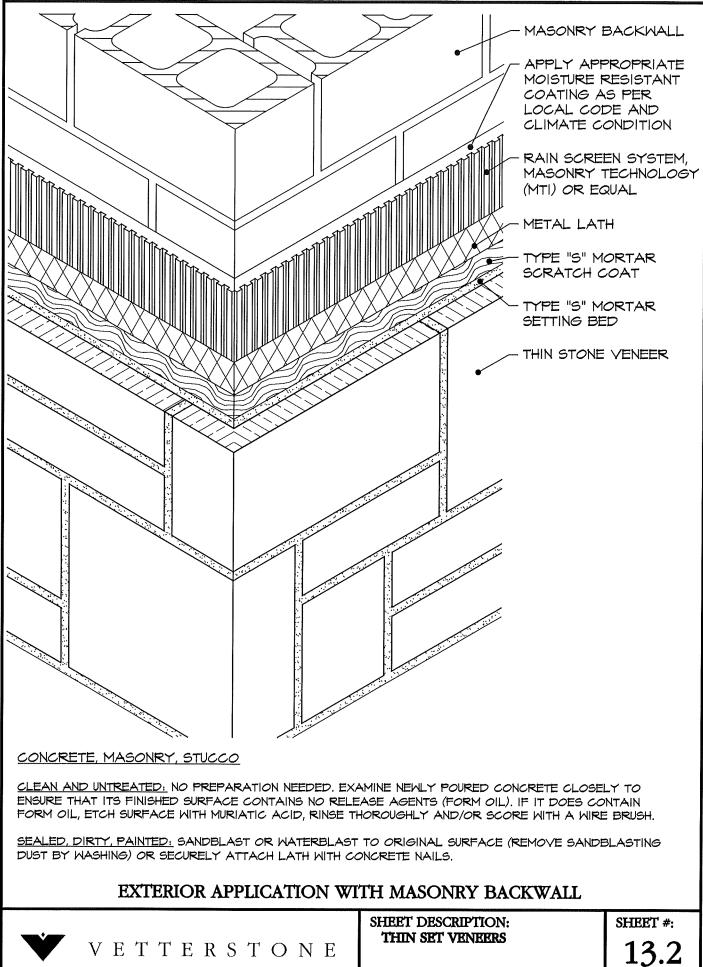






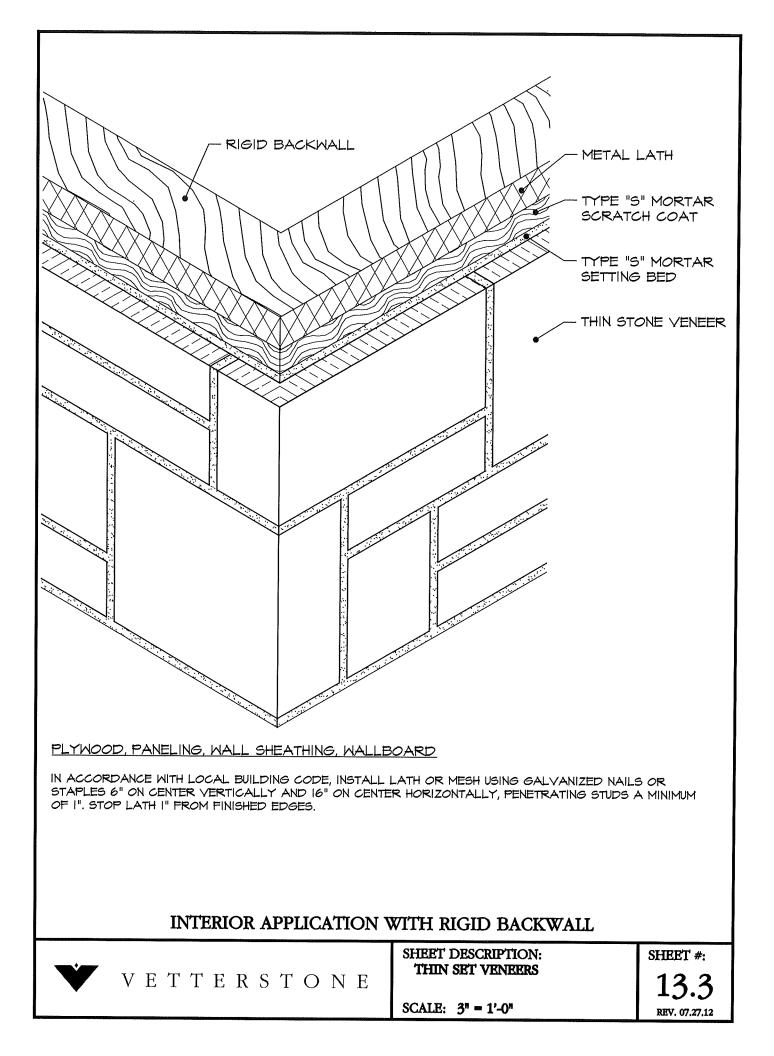


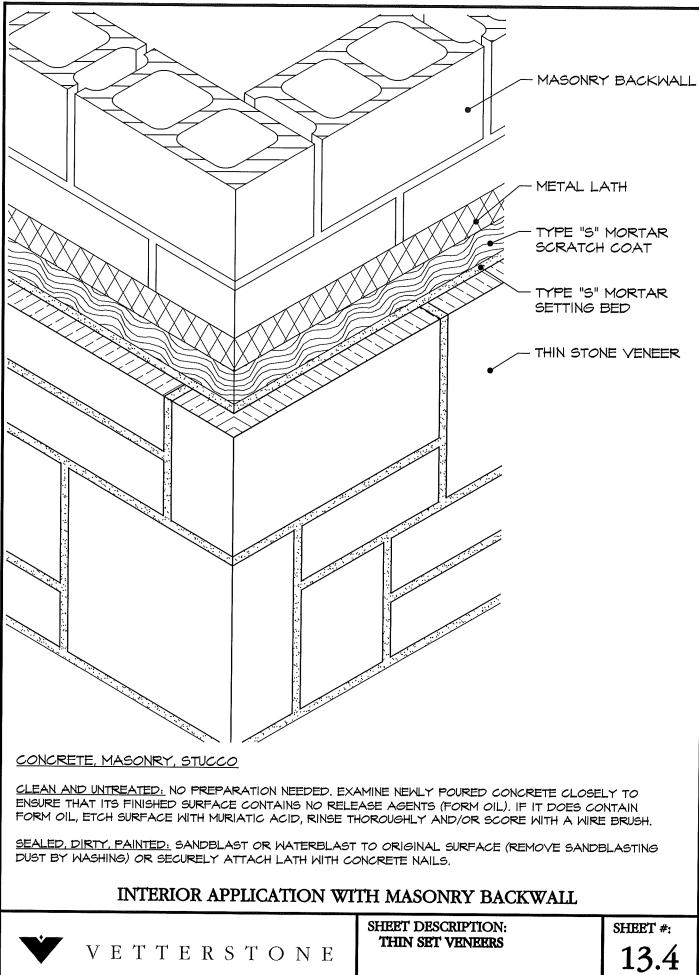




SCALE: 3" = 1'-0"

REV. 07.27.12





SCALE: 3" = 1'-0"

REV. 07.27.12

