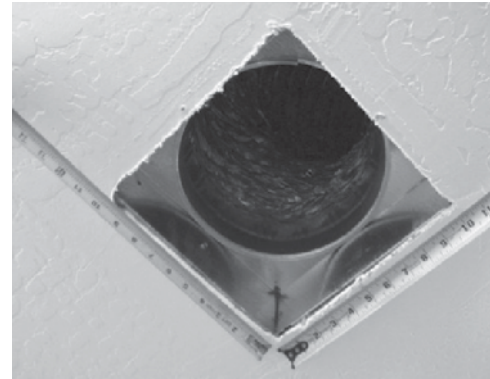


## HOW TO MEASURE

1. If possible, remove the existing register or grille.
2. Measure the actual opening in the wall, ceiling, or floor: important to measure WIDTH" x HEIGHT"
3. If the rough opening measures 20 inches wide by 14 inches tall, the correct size piece to order would be a 20"x14".
4. The actual register or grille's interior dimensions will be slightly smaller, so the piece's frame and damper assembly fit into the recessed opening.
5. The actual register or grille's size including flange will be larger. This will ensure the flange will fit flush on the finished surface and completely cover the rough opening. This outer flange will house the various screw holes to securely attach the register or grille.
6. SteelCrest manufactures products to fit any size opening. You tell us the opening size and we'll take it from there!
7. If the existing register or grille can't be removed, measure the outside of the existing piece and call for assistance.
8. Before installing your register or grille, we recommend painting the interior of the opening with flat black paint to ensure a clean finished look.



## HOW TO ACHIEVE "THE PERFECT FIT"

### General Overview

- Pattern direction is dictated by stated opening size. Width then Height
- Pattern size is always 3/4" smaller than stated register size, e.g. 12"x4" = 11.25" x 3.25"
- All measurements are accurate to 0.1" unless the customer states they need more accuracy
- Standard screw size #8 x 1 3/4" and are counter sunk into the face of the register
- Frame OD size is 3/8" smaller than stated size overall, e.g. 14"x6" is 13 5/8" x 5 5/8" frame OD
- Frames are:
  - 3/4" deep without a damper
  - 2 1/4" deep with damper

### Flange

- If the register is 4" across narrowest width or smaller; Flange size is 3/4" on each side of register to equal 1 1/2" larger than stated size e.g. 24" x 4" = 25.5" x 5.5" OD
- If the register is between 4.5" wide to 13.5" wide; Flange size is 1" on each side of register to equal 2" larger than the stated size e.g. 24" x 12" is 26" x 14" OD
- All registers wider than 14"; Flange size is 1 1/4" on each side of register to equal 2 1/2" larger than the stated size e.g. 15" x 15" is 17.5" x 17.5" OD
- All WF = 1/2" larger than sizes above; SF = 1/2" smaller than sizes above

### RAFF's

- 2 1/4" deep and match stated opening size exactly
- Duct opening sizes are typically oversized by the builder, as much as 1/2"
- RAFF's are built to open according to size, e.g. 40" x 20" will hinge along the 40" side; 20" x 40" will hinge along the 20" side

### Floor Registers

- Patterns that are not recommended for "high traffic" floor registers are:
  - Classic
  - Renaissance
  - Vineyard
  - Corinthian
  - Vine
  - Or any of the medallions
- High traffic registers that are larger than 20" x 10" should be 3/16" or thicker, depending on the pattern.

### Access Panels

- All access panels will be constructed of 14 gauge steel
- Frame OD will be 3/8" smaller than stated size, e.g. 14"x14" will have a frame OD of 13 5/8"x 13 5/8"
- Access panel frames are 2" deep
- Mounting holes in the frame
- Option: With or without backer
- Option: Ornamental or standard flange

[SteelCrestOnline.com](http://SteelCrestOnline.com)

The information presented in this guide may be subject to change and is not intended to be a warranty of product construction or performance. How to Measure and How to Achieve the Perfect Fit information is suggestive for optimal circumstances and may not be applicable to all environments. SteelCrest Registers & Grilles will not be responsible or liable for errors resulting from the use, or reference to this guide. Please contact SteelCrest Registers & Grilles with any questions.

# TECHNICAL GUIDE

## ARCHITECT / ENGINEER / CONTRACTOR

- AIR FLOW DATA
- HVAC SUPPLY AND RETURN GRILLES
- RETURN AIR FILTER FRAMES
- HINGED ACCESS PANELS
- CONTROL PANEL BOXES
- BASEBOARD REGISTERS
- LAY-IN REGISTERS AND GRILLES
- HIGH VELOCITY SUPPLY REGISTERS
- INSERTS AND ARCHITECTURAL PANELS
- ADD ON ACCESSORIES

  
SteelCrest  
INTELLIGENT DESIGN

### Made for Life:

SteelCrest's Unmatched  
Lifetime Warranty.

### Design Sensibility:

All supply registers come with OBD  
air control dampers attached and color  
matched mounting screws.

### 100% Made in the USA:

All of our materials, finishes, and even  
our screws are made in the USA

### Craftsmanship:

We manufacture 100% in-house,  
everything we sell is subject to our  
rigorous standards of excellence.

To learn more, contact your local dealer or  
visit us online at

[www.steelcrestonline.com](http://www.steelcrestonline.com)



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- T-Bar Lay In.....4
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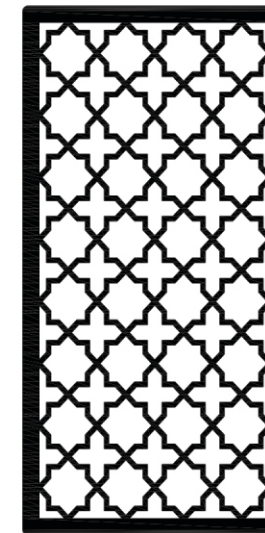
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- How to Measure.....23

All inserts come standard in 11 gauge steel, with a powder coated finish, but additional material and finish options are available.

State Outside Dimensions When Ordering.



Exp Tuscan



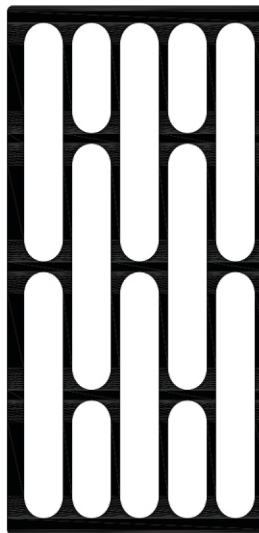
Exp Victorian



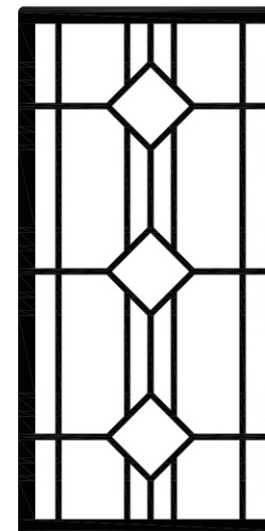
Exp Vine



Exp Vineyard



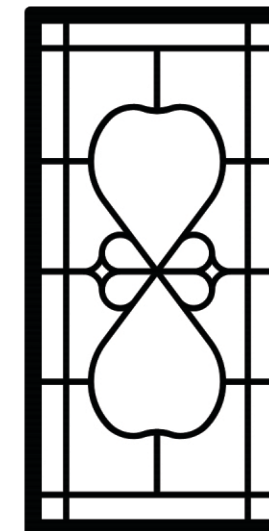
Exp Vogue



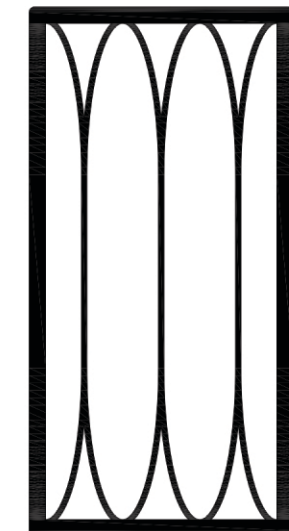
"Anne" Pattern



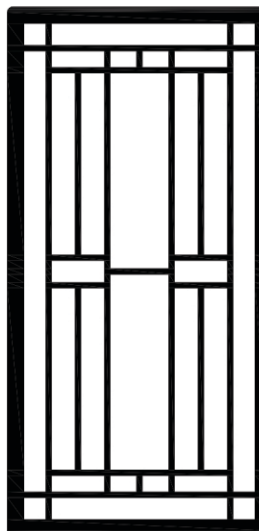
"Ava" Pattern



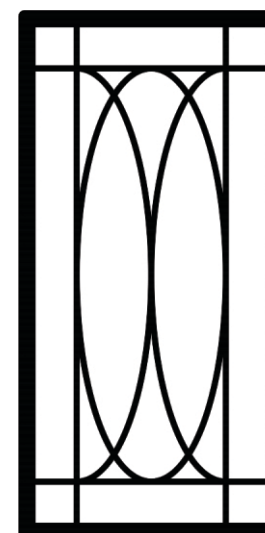
"Cheyenne" Pattern



"Grace" Pattern



"Marie" Pattern



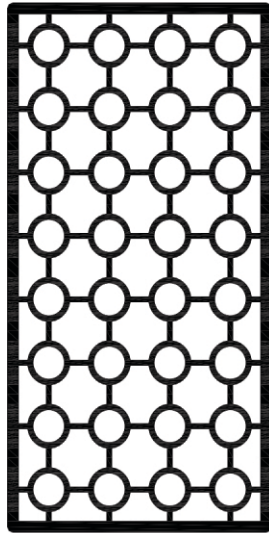
"Monterey" Pattern



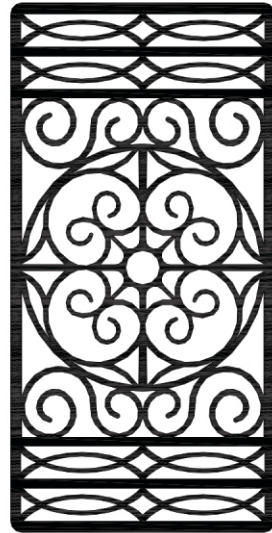
\* Patterns Represent a 12"x 24" Insert, Pattern layout will vary with size

# Cabinet, Window, and Door Inserts

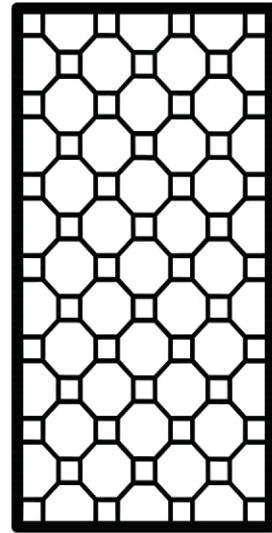
## Sample Expanded Patterns



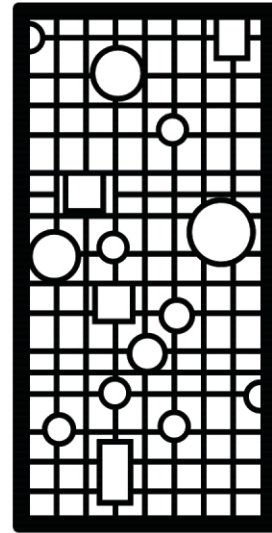
Exp Castle



Exp Classic



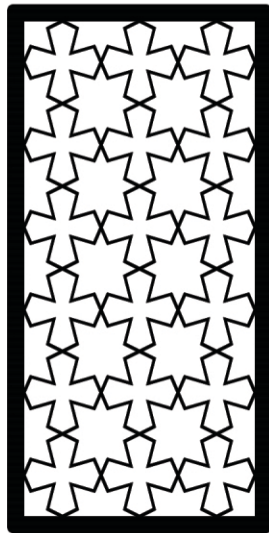
Exp Cobblestone



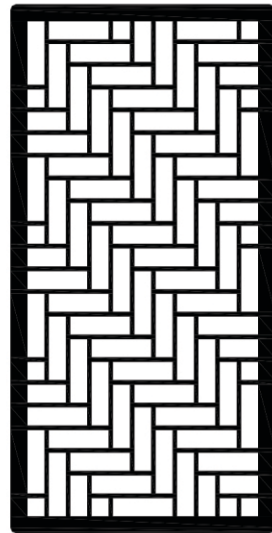
Exp Contemporary



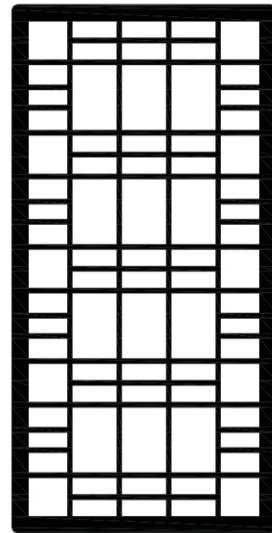
Exp Corinthian



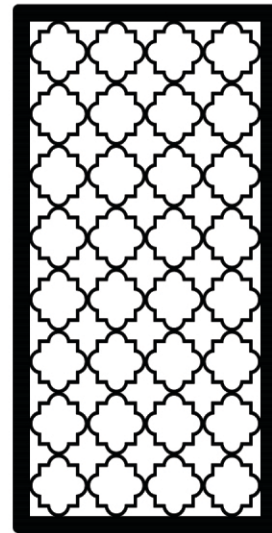
Exp Cobblestone



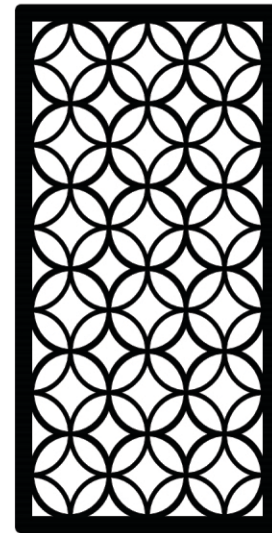
Exp Herringbone



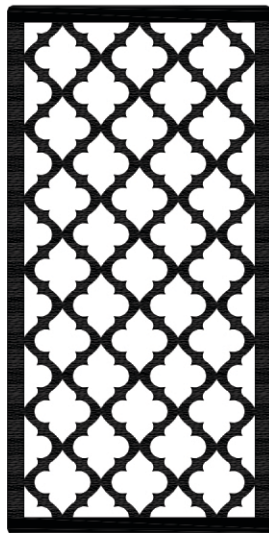
Exp Mission



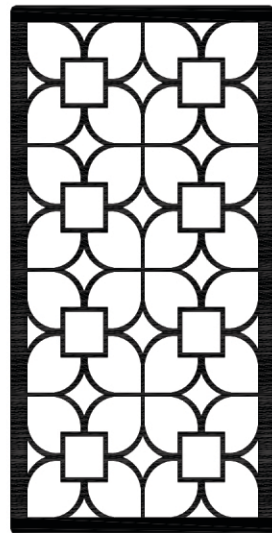
Exp New Classic



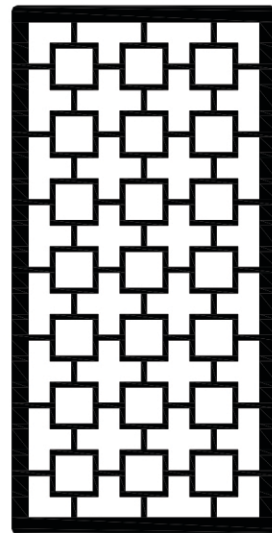
Exp Omni



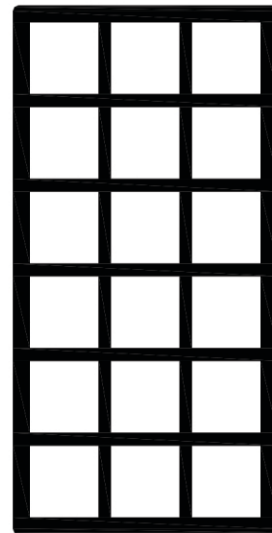
Exp Regency



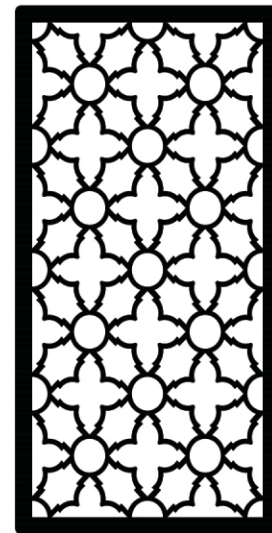
Exp Royal Palm



Exp Santa Fe

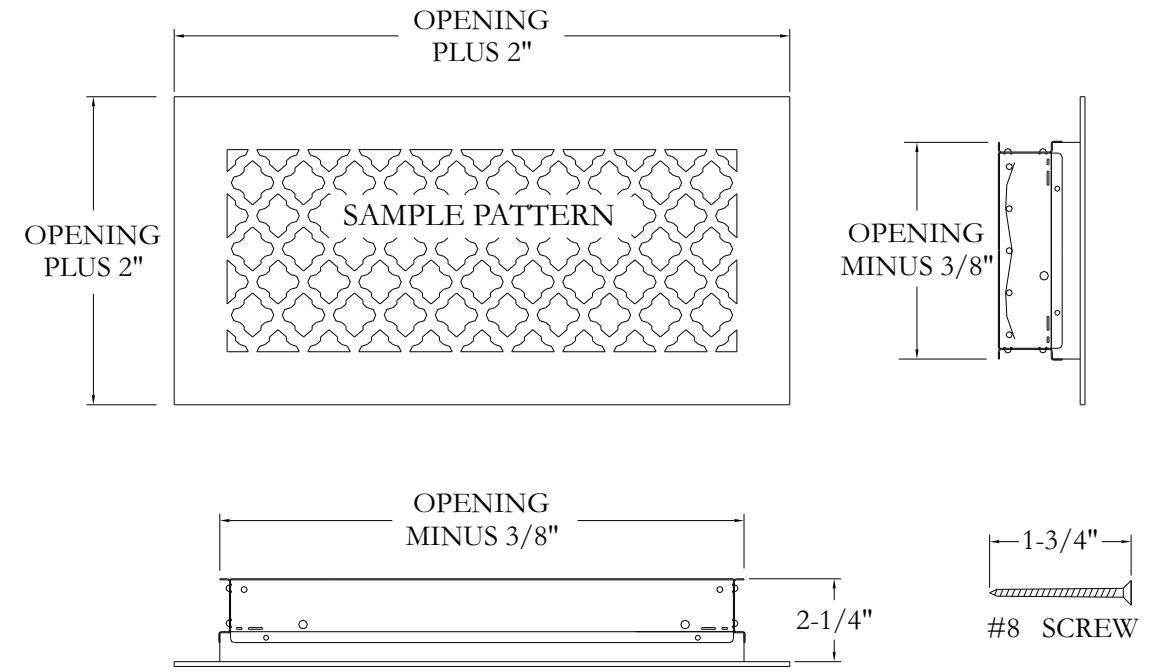


Exp Square



Exp Traditional

\* Patterns Represent a 12"x 24" Insert, Pattern layout will vary with size

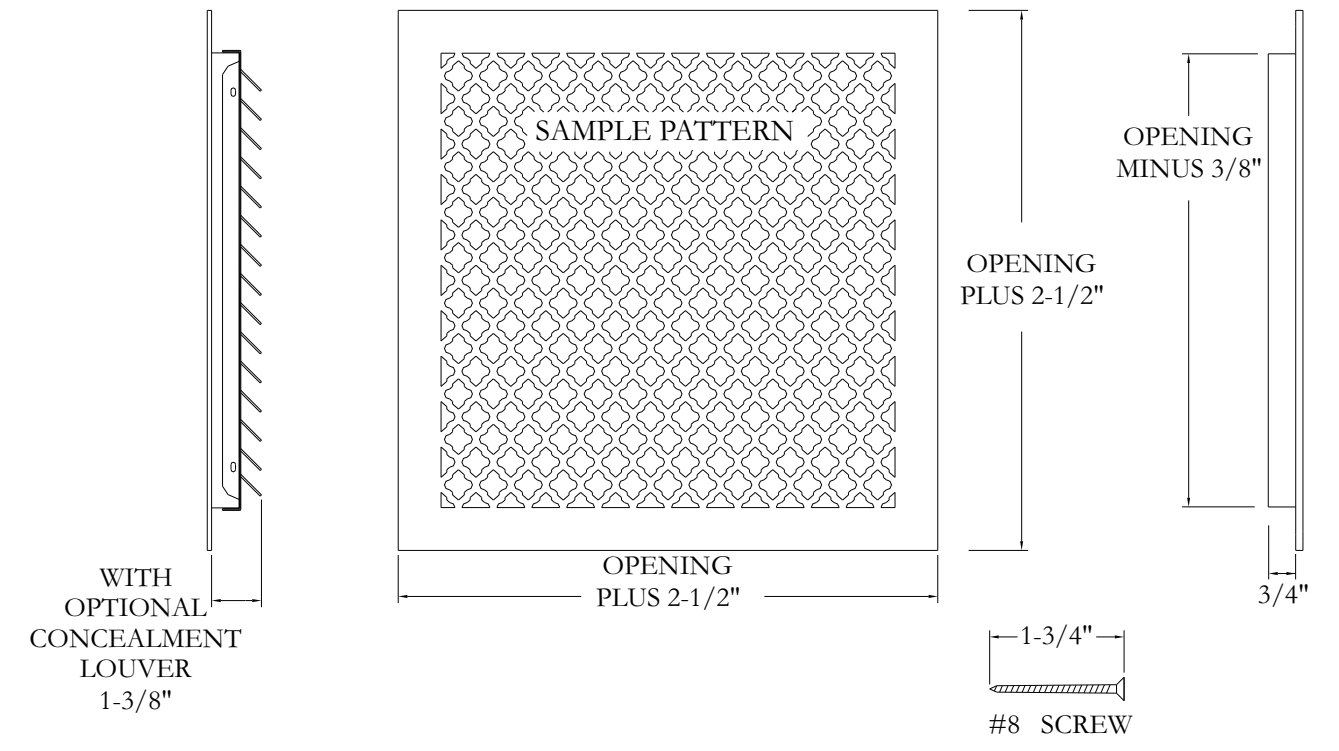


MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 OVERALL OPENNESS, VARIES WITH PATTERN  
 OPENNESS: VARIES

SCALE	NONE
DRAWN	DH
DATE	10-18-06
QA.	
COMMENTS	

### TYPICAL AIR SUPPLY

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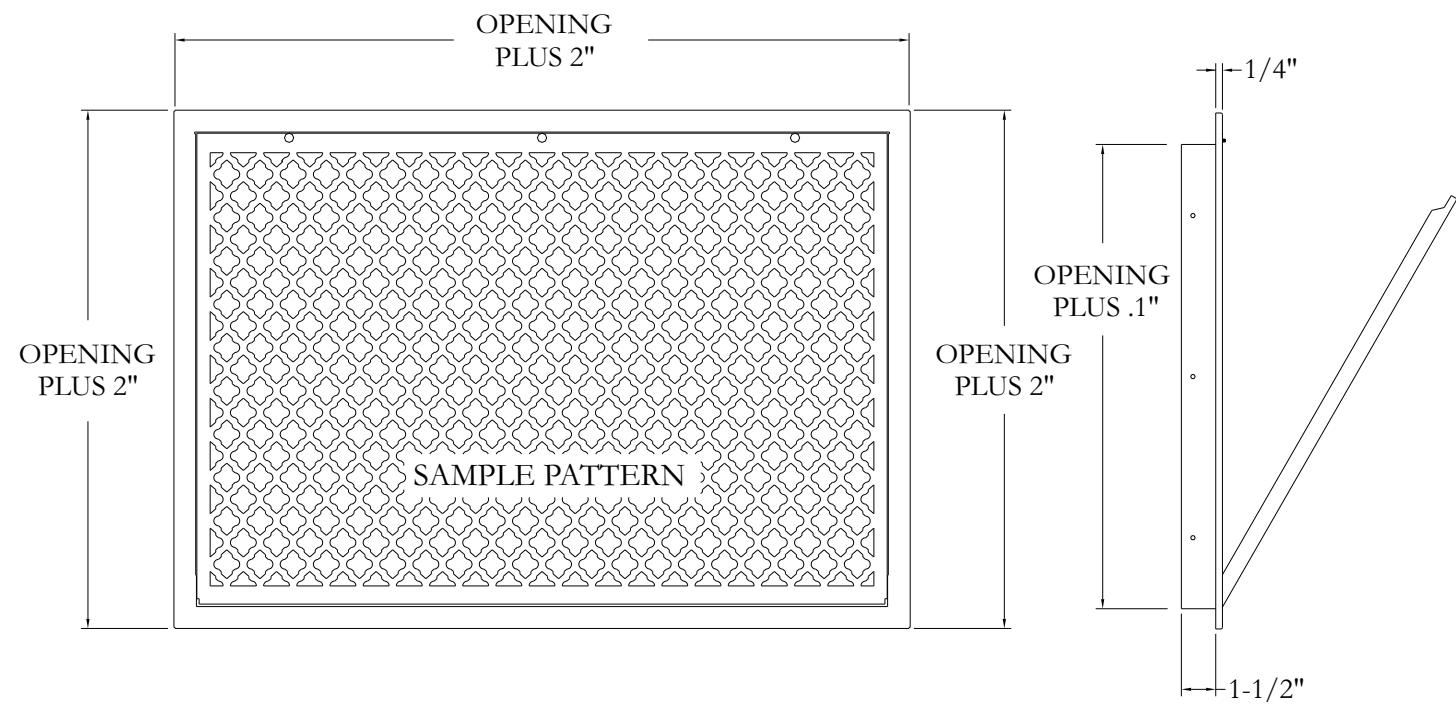


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 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 OVERALL OPENNESS, VARIES WITH PATTERN  
 OPENNESS: VARIES

SCALE	NONE
DRAWN	DH
DATE	10-18-06
QA.	
COMMENTS	

### TYPICAL RETURN-AIR GRILLE

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MATERIAL: 18 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 OVERALL OPENNESS, VARIES WITH PATTERN  
 OPENNESS: VARIES

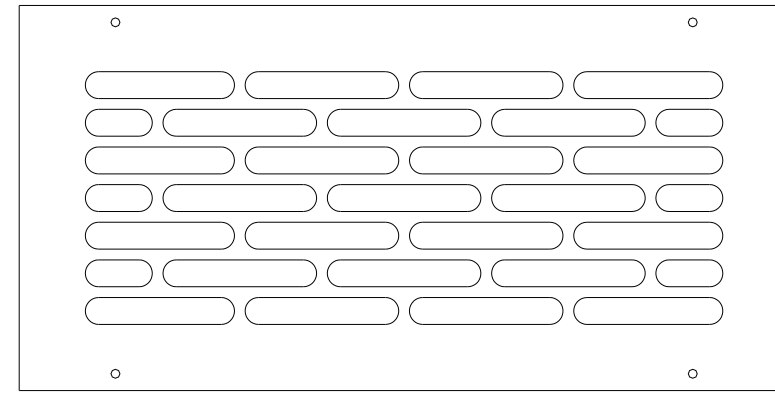
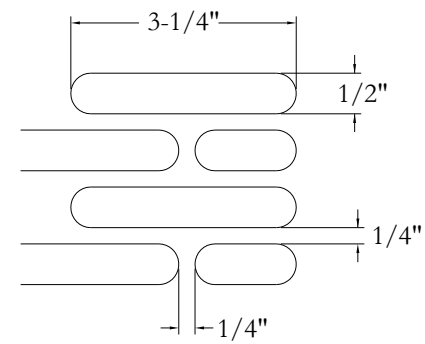
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DATE	10-18-06
Q.A.	
COMMENTS	

### TYPICAL RETURN-AIR FILTER FRAME

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 65%

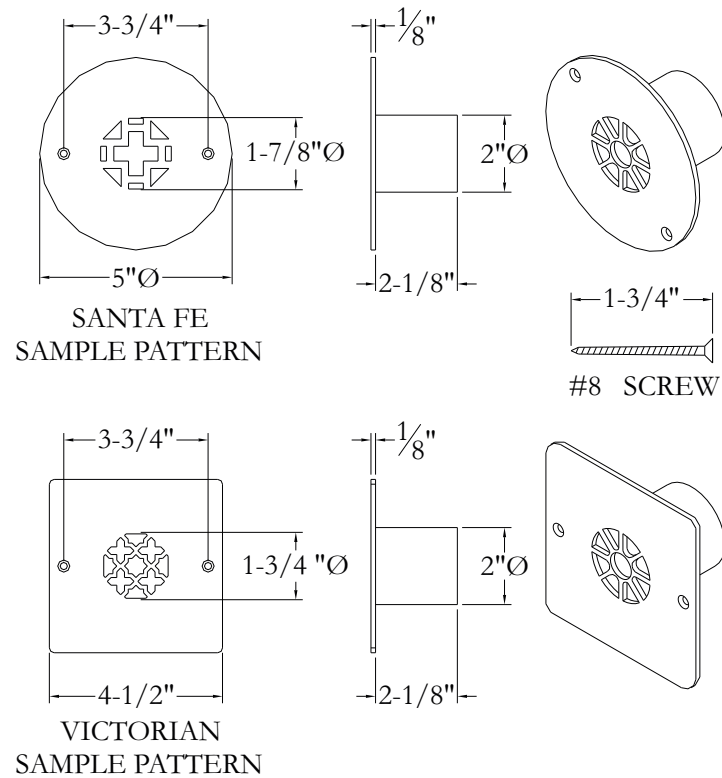
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DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### Air Flow Performance Data

Velocity Static Pressure	250 0.009	500 0.018	750 0.027	1000 0.036	1500 0.055
Size	CFM				
6x6 .25 ft <sup>2</sup>	45	92	135	185	275
8x8 .44 ft <sup>2</sup>	80	160	240	320	480
10x10 .69 ft <sup>2</sup>	125	250	375	500	750
12x12 1.0 ft <sup>2</sup>	180	360	540	720	1100
14x14 1.36 ft <sup>2</sup>	245	490	735	980	1470
8x6 .33 ft <sup>2</sup>	60	120	180	240	360
10x6 .42 ft <sup>2</sup>	75	150	225	300	450
12x6 .5 ft <sup>2</sup>	90	180	270	360	540
14x6 .58 ft <sup>2</sup>	105	210	315	420	630
16x6 .67 ft <sup>2</sup>	120	240	360	480	720
18x6 .75 ft <sup>2</sup>	135	270	405	540	810
20x6 .83 ft <sup>2</sup>	150	300	450	600	900
10x8 .56 ft <sup>2</sup>	100	200	300	400	600
12x8 .67 ft <sup>2</sup>	120	240	360	480	720
14x8 .78 ft <sup>2</sup>	140	280	420	560	840
8x4 .22 ft <sup>2</sup>	40	80	120	160	240
10x4 .28 ft <sup>2</sup>	50	100	150	200	300
12x4 .33 ft <sup>2</sup>	60	120	180	240	360

### VOGUE DESIGN

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MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS:

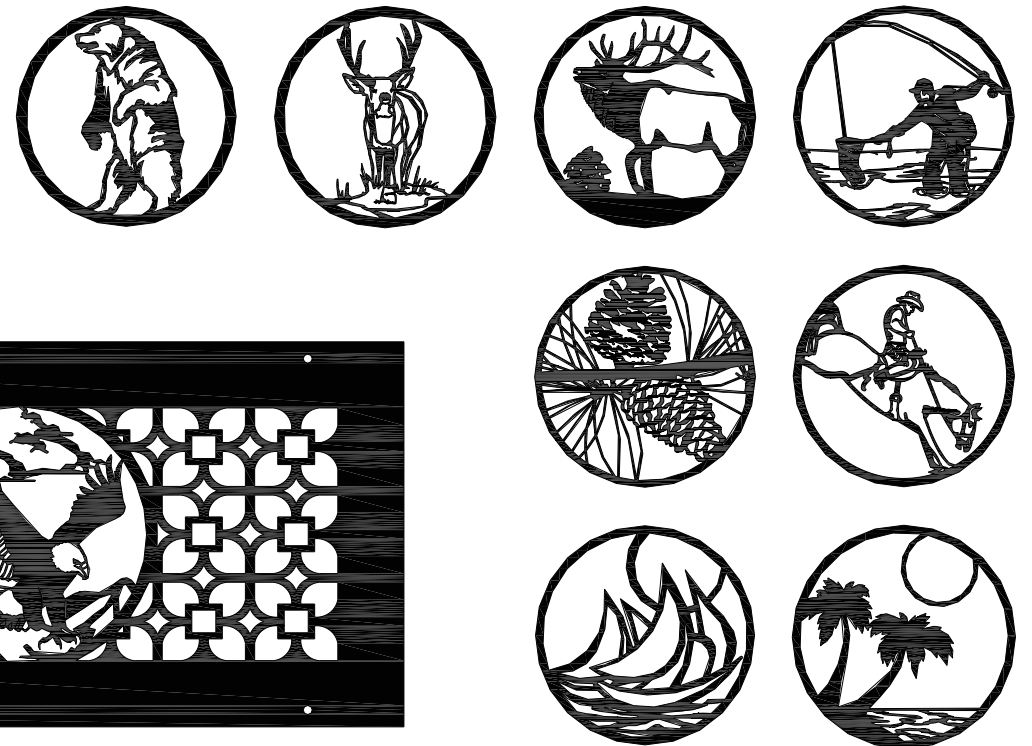
SCALE	NONE
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DATE	8/7/12
Q.A.	
COMMENTS	

### HIGH-VELOCITY AIR SUPPLY

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### PATTERN DETAIL

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.  
 NO MEDALLIONS WILL EXCEED 8 1/4\"/>



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: VARIES

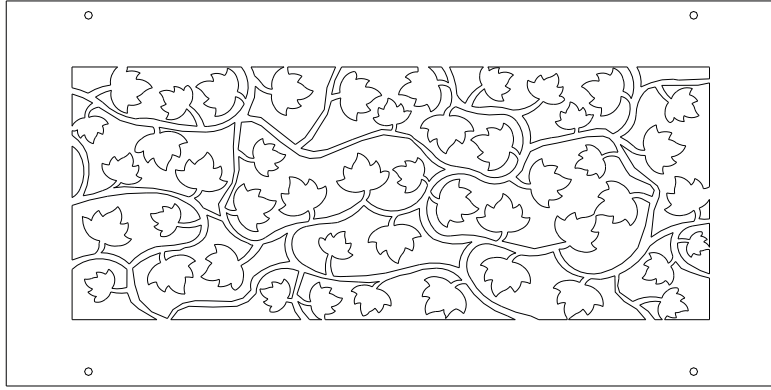
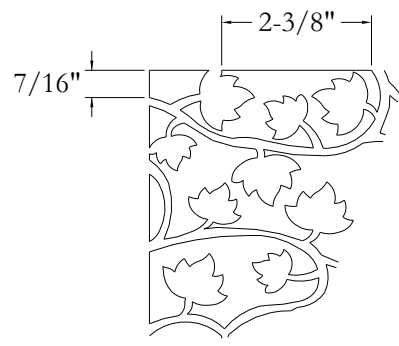
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DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### MEDALLION

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.02	500 0.042	750 0.063	1000 0.084	1500 0.126
Size	CFM				
6x6 .25 ft <sup>2</sup>	39	77	118	157	232
8x8 .44 ft <sup>2</sup>	69	137	207	275	418
10x10 .69 ft <sup>2</sup>	108	215	322	432	650
12x12 1.0 ft <sup>2</sup>	157	310	467	620	942
14x14 1.36 ft <sup>2</sup>	213	420	635	845	1261
8x6 .33 ft <sup>2</sup>	52	104	155	207	312
10x6 .42 ft <sup>2</sup>	66	130	196	260	388
12x6 .5 ft <sup>2</sup>	78	156	235	312	463
14x6 .58 ft <sup>2</sup>	91	181	272	365	545
16x6 .67 ft <sup>2</sup>	105	207	312	416	620
18x6 .75 ft <sup>2</sup>	118	232	350	465	697
20x6 .83 ft <sup>2</sup>	130	260	390	515	781
10x8 .56 ft <sup>2</sup>	87	172	260	346	520
12x8 .67 ft <sup>2</sup>	104	205	312	418	621
14x8 .78 ft <sup>2</sup>	122	240	365	482	722
8x4 .22 ft <sup>2</sup>	35	69	104	138	207
10x4 .28 ft <sup>2</sup>	44	87	130	171	260
12x4 .33 ft <sup>2</sup>	52	104	155	205	312



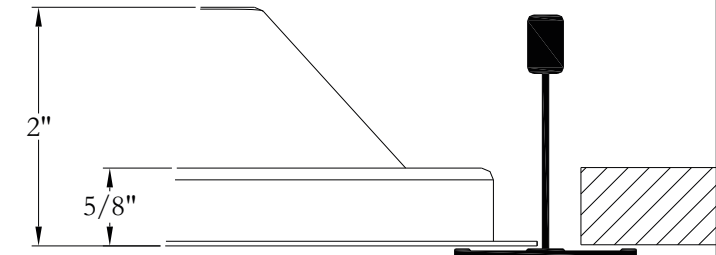
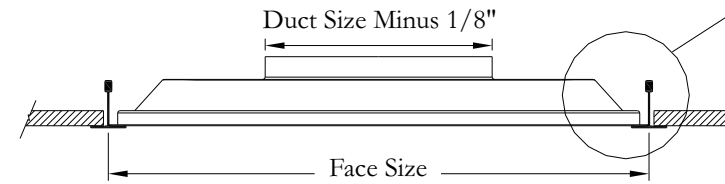
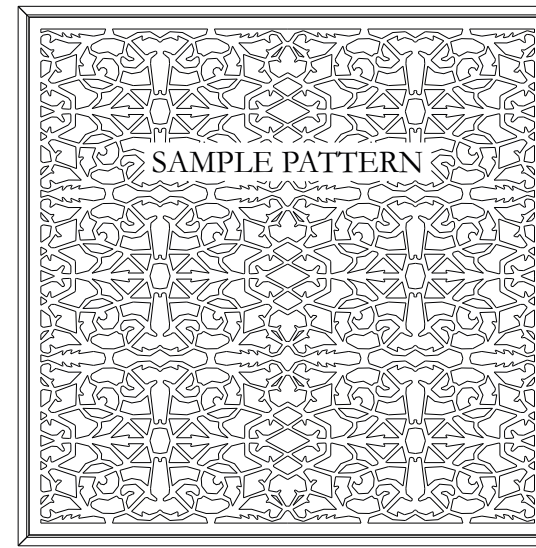
MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED

PATTERN OPENNESS: 61%

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### VINE DESIGN

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\*Air Deflection Available



MATERIAL: 18 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED  
OVERALL OPENNESS, VARIES WITH PATTERN  
OPENNESS: VARIES

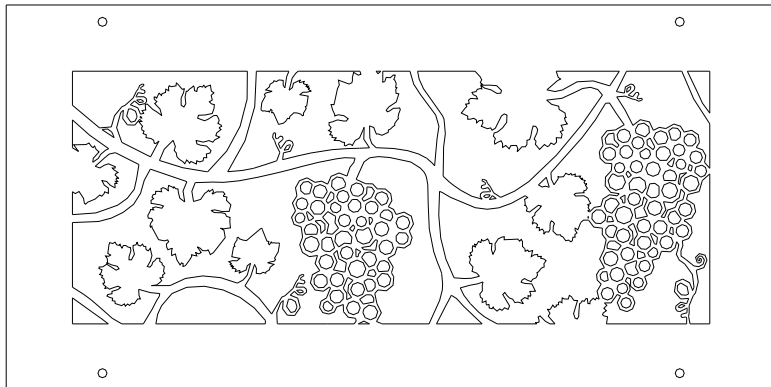
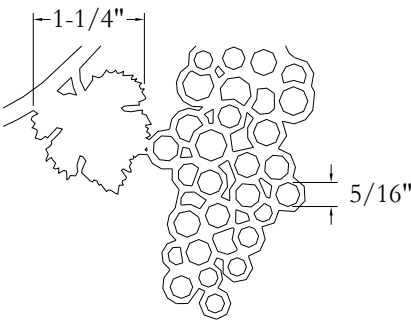
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DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### T-BAR LAY-IN GRILLE

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.02	500 0.042	750 0.063	1000 0.084	1500 0.126
Size	CFM				
6x6 .25 ft <sup>2</sup>	38	75	115	155	230
8x8 .44 ft <sup>2</sup>	68	135	205	270	405
10x10 .69 ft <sup>2</sup>	105	210	315	425	635
12x12 1.0 ft <sup>2</sup>	155	305	460	610	915
14x14 1.36 ft <sup>2</sup>	211	415	626	830	1245
8x6 .33 ft <sup>2</sup>	52	102	153	203	305
10x6 .42 ft <sup>2</sup>	65	127	192	254	381
12x6 .5 ft <sup>2</sup>	77	152	230	305	457
14x6 .58 ft <sup>2</sup>	90	178	268	356	534
16x6 .67 ft <sup>2</sup>	103	203	307	407	610
18x6 .75 ft <sup>2</sup>	116	229	345	457	686
20x6 .83 ft <sup>2</sup>	129	254	383	508	762
10x8 .56 ft <sup>2</sup>	86	169	256	339	508
12x8 .67 ft <sup>2</sup>	103	203	307	407	610
14x8 .78 ft <sup>2</sup>	121	237	358	474	712
8x4 .22 ft <sup>2</sup>	34	68	102	136	203
10x4 .28 ft <sup>2</sup>	43	85	128	169	254
12x4 .33 ft <sup>2</sup>	52	102	153	203	305



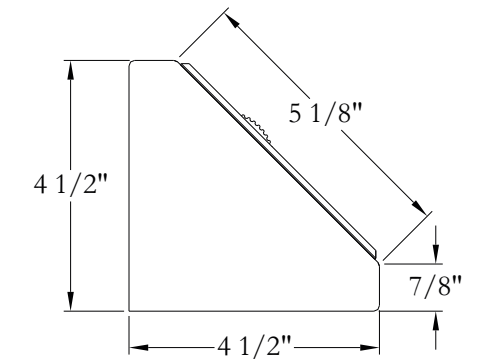
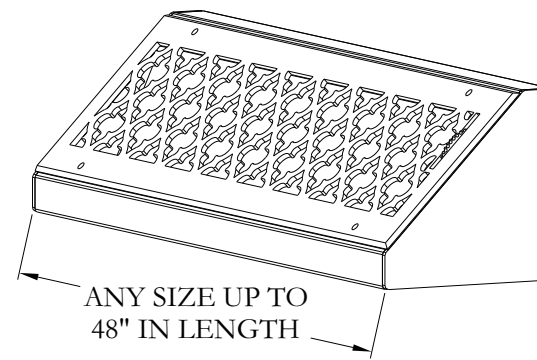
MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED

PATTERN OPENNESS: 60%

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### VINEYARD DESIGN

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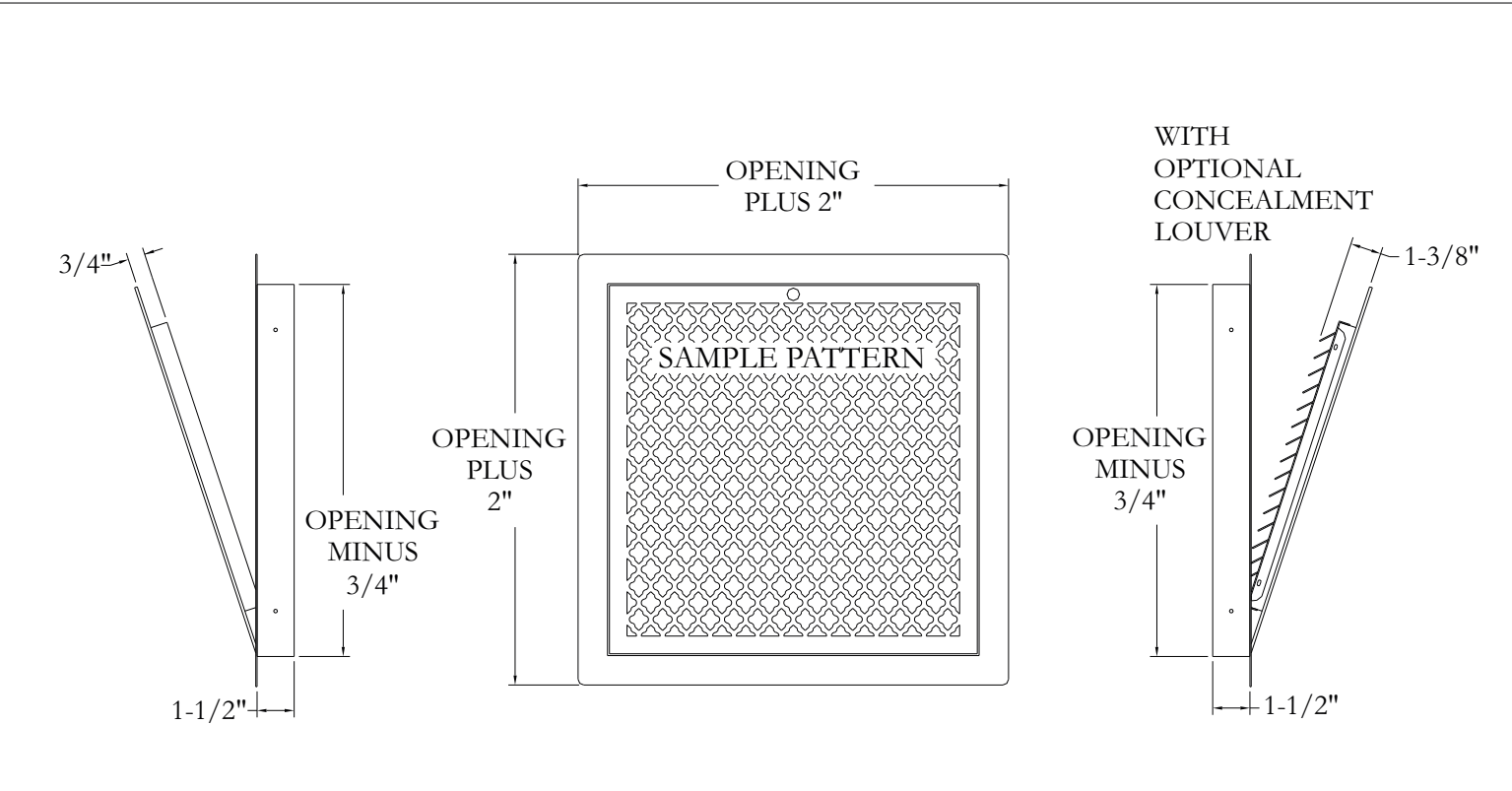


MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED  
OVERALL OPENNESS, VARIES WITH PATTERN  
OPENNESS: VARIES

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### BASEBOARD REGISTER

THIS INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF STEELCREST CORPORATION. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT WRITTEN PERMISSION OF STEELCREST CORPORATION IS PROHIBITED

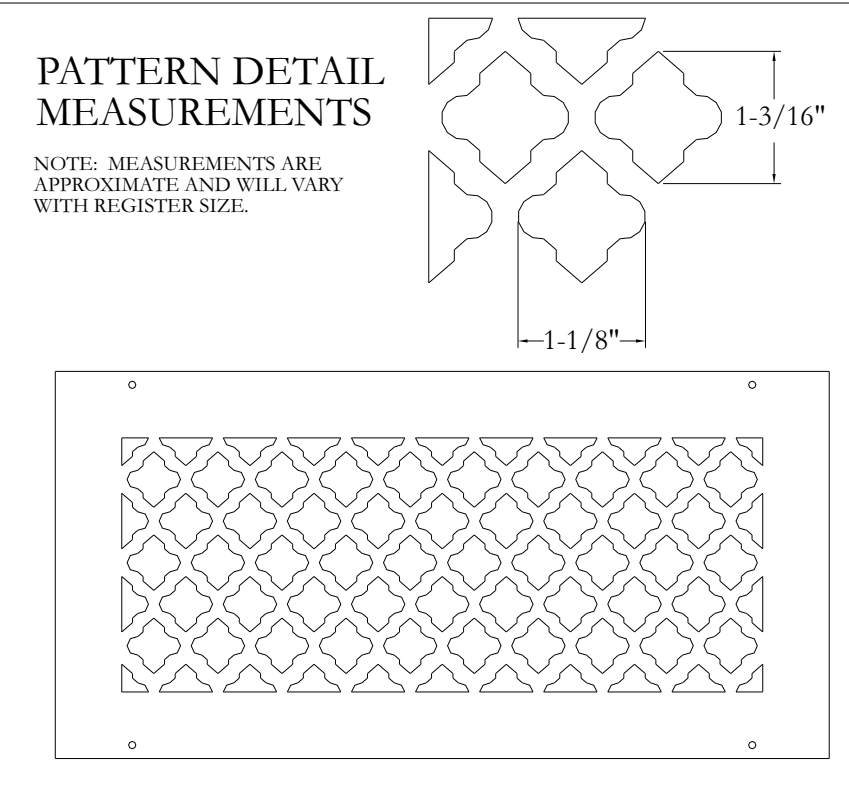


MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 OVERALL OPENNESS, VARIES WITH PATTERN  
 OPENNESS: VARIES

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

**HINGED ACCESS PANEL**

THIS INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF STEELCREST CORPORATION. ANY REPRODUCTION INPART OR AS A WHOLE WITHOUT WRITTEN PERMISSION OF STEELCREST CORPORATION IS PROHIBITED



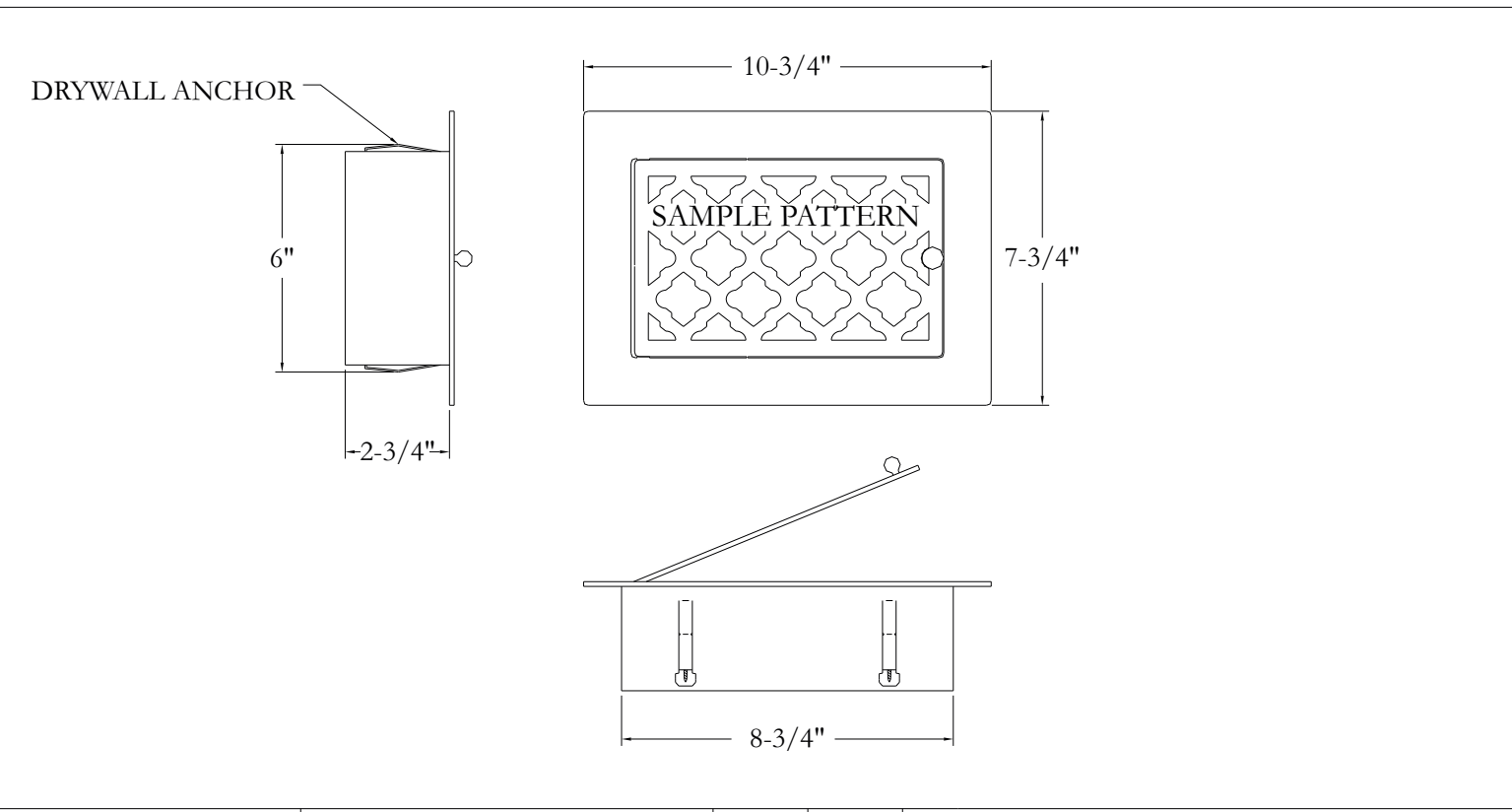
MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 65%

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

**TUSCAN DESIGN**

THIS INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF STEELCREST CORPORATION. ANY REPRODUCTION INPART OR AS A WHOLE WITHOUT WRITTEN PERMISSION OF STEELCREST CORPORATION IS PROHIBITED

Air Flow Performance Data					
Velocity Static Pressure	250	500	750	1000	1500
	0.009	0.018	0.027	0.036	0.055
Size	CFM				
6x6 .25 ft <sup>2</sup>	45	92	135	185	275
8x8 .44 ft <sup>2</sup>	80	160	240	320	480
10x10 .69 ft <sup>2</sup>	125	250	375	500	750
12x12 1.0 ft <sup>2</sup>	180	360	540	720	1100
14x14 1.36 ft <sup>2</sup>	245	490	735	980	1470
8x6 .33 ft <sup>2</sup>	60	120	180	240	360
10x6 .42 ft <sup>2</sup>	75	150	225	300	450
12x6 .5 ft <sup>2</sup>	90	180	270	360	540
14x6 .58 ft <sup>2</sup>	105	210	315	420	630
16x6 .67 ft <sup>2</sup>	120	240	360	480	720
18x6 .75 ft <sup>2</sup>	135	270	405	540	810
20x6 .83 ft <sup>2</sup>	150	300	450	600	900
10x8 .56 ft <sup>2</sup>	100	200	300	400	600
12x8 .67 ft <sup>2</sup>	120	240	360	480	720
14x8 .78 ft <sup>2</sup>	140	280	420	560	840
8x4 .22 ft <sup>2</sup>	40	80	120	160	240
10x4 .28 ft <sup>2</sup>	50	100	150	200	300
12x4 .33 ft <sup>2</sup>	60	120	180	240	360

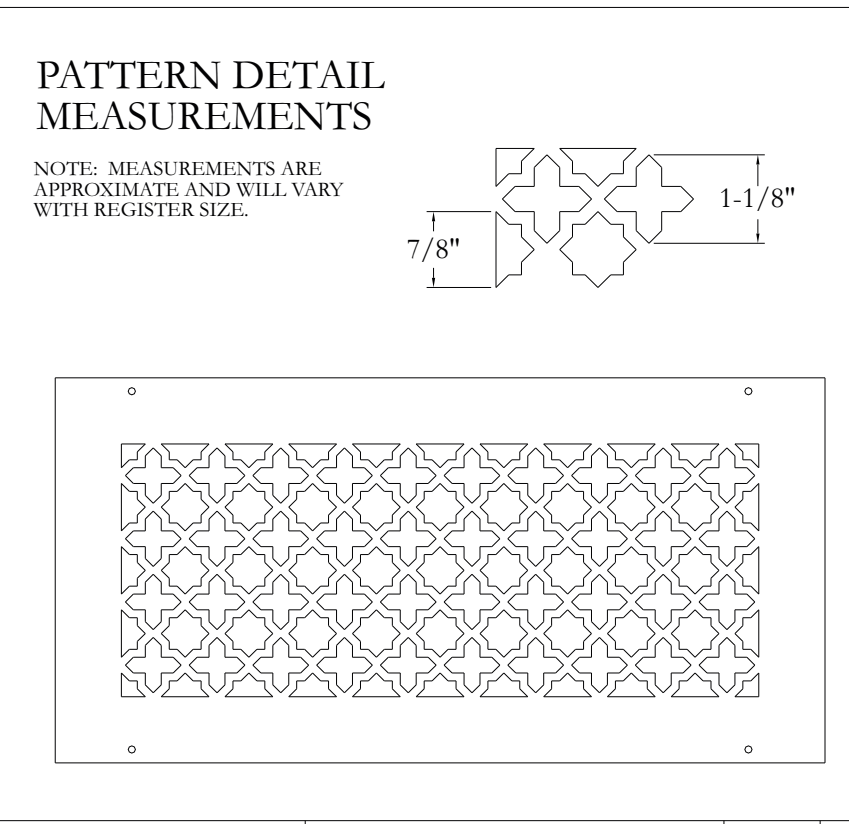


MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 OVERALL OPENNESS, VARIES WITH PATTERN

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

**CONTROL PANEL BOX**

THIS INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF STEELCREST CORPORATION. ANY REPRODUCTION INPART OR AS A WHOLE WITHOUT WRITTEN PERMISSION OF STEELCREST CORPORATION IS PROHIBITED



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 63%

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

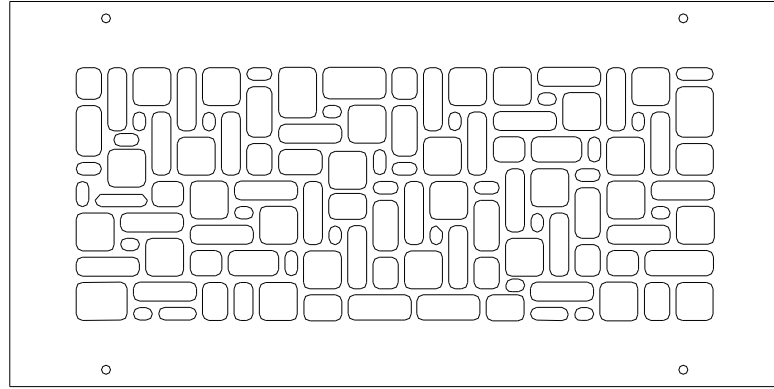
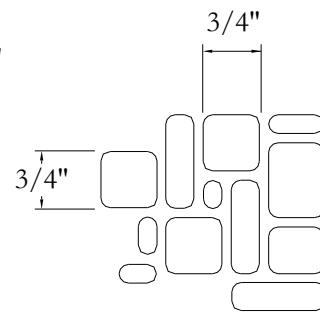
**VICTORIAN DESIGN**

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Air Flow Performance Data					
Velocity Static Pressure	250	500	750	1000	1500
	0.005	0.011	0.0175	0.023	0.035
Size	CFM				
6x6 .25 ft <sup>2</sup>	42	85	125	170	255
8x8 .44 ft <sup>2</sup>	75	150	225	300	450
10x10 .69 ft <sup>2</sup>	115	235	350	465	700
12x12 1.0 ft <sup>2</sup>	167	335	500	680	1020
14x14 1.36 ft <sup>2</sup>	225	461	686	911	1372
8x6 .33 ft <sup>2</sup>	55	113	168	223	336
10x6 .42 ft <sup>2</sup>	69	141	210	279	420
12x6 .5 ft <sup>2</sup>	83	169	252	335	504
14x6 .58 ft <sup>2</sup>	97	197	294	391	588
16x6 .67 ft <sup>2</sup>	110	226	336	446	672
18x6 .75 ft <sup>2</sup>	124	254	378	502	756
20x6 .83 ft <sup>2</sup>	138	282	420	558	840
10x8 .56 ft <sup>2</sup>	92	188	280	372	560
12x8 .67 ft <sup>2</sup>	110	226	336	446	672
14x8 .78 ft <sup>2</sup>	129	263	392	521	784
8x4 .22 ft <sup>2</sup>	37	75	112	149	224
10x4 .28 ft <sup>2</sup>	46	94	140	186	280
12x4 .33 ft <sup>2</sup>	55	113	168	223	336

## PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.009	500 0.018	750 0.027	1000 0.036	1500 0.055
Size	CFM				
6x6 .25 ft <sup>2</sup>	47	97	141	205	311
8x8 .44 ft <sup>2</sup>	85	172	255	362	502
10x10 .69 ft <sup>2</sup>	130	265	390	544	790
12x12 1.0 ft <sup>2</sup>	187	380	561	740	1195
14x14 1.36 ft <sup>2</sup>	252	512	742	1005	1510
8x6 .33 ft <sup>2</sup>	65	131	195	257	382
10x6 .42 ft <sup>2</sup>	82	162	232	332	470
12x6 .5 ft <sup>2</sup>	97	195	270	360	540
14x6 .58 ft <sup>2</sup>	112	218	315	431	655
16x6 .67 ft <sup>2</sup>	131	253	374	515	787
18x6 .75 ft <sup>2</sup>	147	285	405	540	810
20x6 .83 ft <sup>2</sup>	162	318	462	620	932
10x8 .56 ft <sup>2</sup>	108	216	332	447	661
12x8 .67 ft <sup>2</sup>	131	253	374	500	762
14x8 .78 ft <sup>2</sup>	153	292	445	590	865
8x4 .22 ft <sup>2</sup>	43	95	120	160	240
10x4 .28 ft <sup>2</sup>	55	112	171	221	334
12x4 .33 ft <sup>2</sup>	65	131	195	257	382

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MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED

PATTERN OPENNESS: 67%

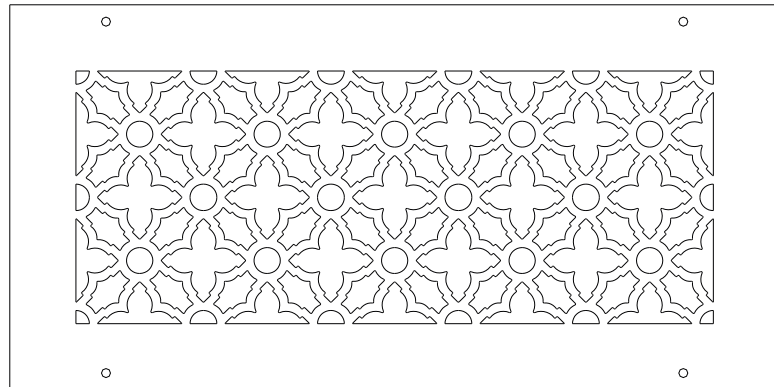
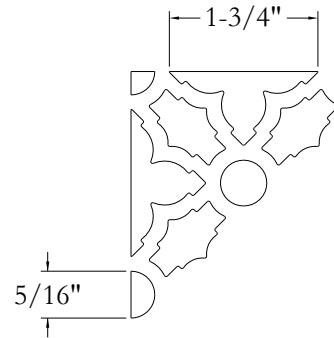
SCALE	NONE
DRAWN	DH
DATE	10-18-06
QA.	
COMMENTS	

## STONEWALL DESIGN

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## PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.005	500 0.011	750 0.0175	1000 0.023	1500 0.035
Size	CFM				
6x6 .25 ft <sup>2</sup>	42	85	125	170	255
8x8 .44 ft <sup>2</sup>	75	150	225	300	450
10x10 .69 ft <sup>2</sup>	115	235	350	465	700
12x12 1.0 ft <sup>2</sup>	167	335	500	680	1020
14x14 1.36 ft <sup>2</sup>	225	461	686	911	1372
8x6 .33 ft <sup>2</sup>	55	113	168	223	336
10x6 .42 ft <sup>2</sup>	69	141	210	279	420
12x6 .5 ft <sup>2</sup>	83	169	252	335	504
14x6 .58 ft <sup>2</sup>	97	197	294	391	588
16x6 .67 ft <sup>2</sup>	110	226	336	446	672
18x6 .75 ft <sup>2</sup>	124	254	378	502	756
20x6 .83 ft <sup>2</sup>	138	282	420	558	840
10x8 .56 ft <sup>2</sup>	92	188	280	372	560
12x8 .67 ft <sup>2</sup>	110	226	336	446	672
14x8 .78 ft <sup>2</sup>	129	263	392	521	784
8x4 .22 ft <sup>2</sup>	37	75	112	149	224
10x4 .28 ft <sup>2</sup>	46	94	140	186	280
12x4 .33 ft <sup>2</sup>	55	113	168	223	336



MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED

PATTERN OPENNESS: 63%

SCALE	NONE
DRAWN	DH
DATE	10-18-06
QA.	
COMMENTS	

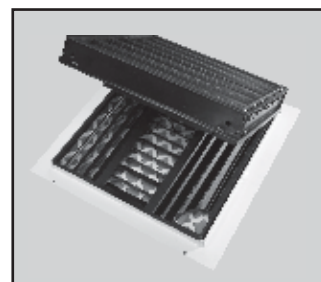
## TRADITIONAL DESIGN

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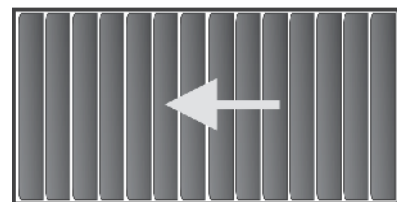
**RECTANGLE TYPE**



1 Way "H"



**SQUARE TYPE**



1 Way "V"



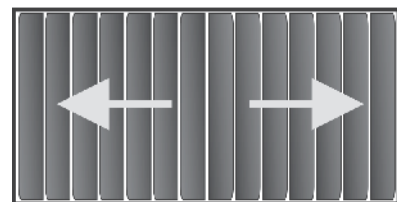
3 Way



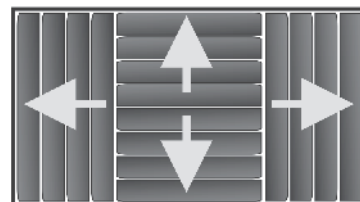
SQ 1 Way



SQ 3 Way



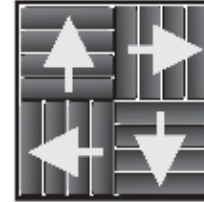
2 Way



4 Way



SQ 2 Way



SQ 4 Way



MATERIAL: 18 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PROJECT:

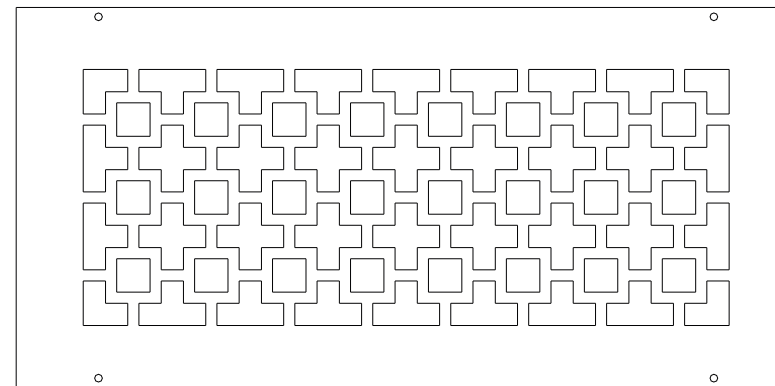
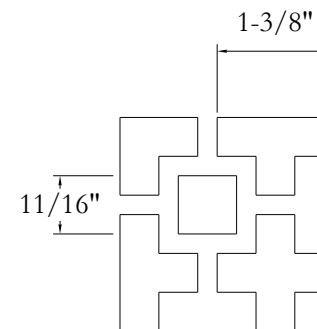
SCALE	NONE
DRAWN	DL
DATE	10-18-06
Q.A.	
COMMENTS	

**AIR DEFLECTOR**

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**PATTERN DETAIL MEASUREMENTS**

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 64%

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

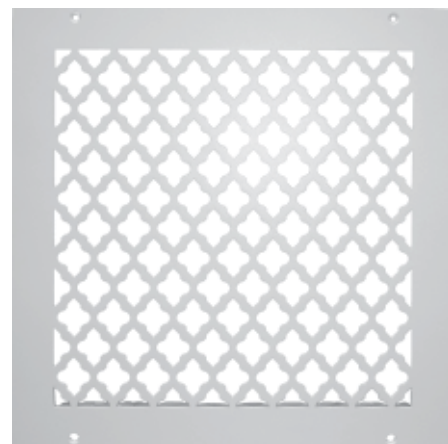
**Air Flow Performance Data**

Velocity Static Pressure	250 0.005	500 0.011	750 0.0175	1000 0.023	1500 0.035
Size	CFM				
6x6 .25 ft <sup>2</sup>	43	87	127	175	262
8x8 .44 ft <sup>2</sup>	77	150	225	300	460
10x10 .69 ft <sup>2</sup>	120	235	350	465	720
12x12 1.0 ft <sup>2</sup>	171	335	512	680	1062
14x14 1.36 ft <sup>2</sup>	232	461	686	911	1398
8x6 .33 ft <sup>2</sup>	57	113	168	223	348
10x6 .42 ft <sup>2</sup>	72	141	212	279	435
12x6 .5 ft <sup>2</sup>	87	169	252	350	530
14x6 .58 ft <sup>2</sup>	101	205	294	391	605
16x6 .67 ft <sup>2</sup>	115	226	336	452	703
18x6 .75 ft <sup>2</sup>	131	260	378	502	785
20x6 .83 ft <sup>2</sup>	145	282	420	558	872
10x8 .56 ft <sup>2</sup>	96	188	280	372	580
12x8 .67 ft <sup>2</sup>	115	232	342	446	703
14x8 .78 ft <sup>2</sup>	135	263	392	521	805
8x4 .22 ft <sup>2</sup>	38	75	112	149	234
10x4 .28 ft <sup>2</sup>	48	94	143	186	290
12x4 .33 ft <sup>2</sup>	57	113	168	223	348

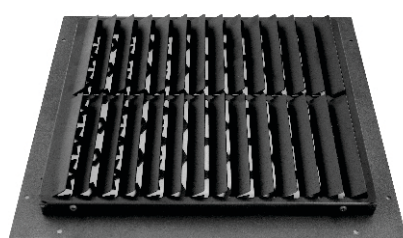
**SANTA FE DESIGN**

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**GRILLE SHOWN WITHOUT CONCEALMENT LOUVER**

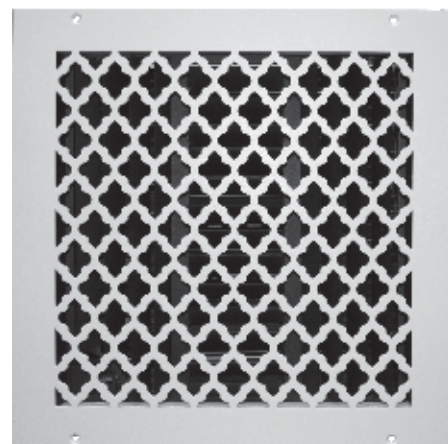


TUSCAN SAMPLE PATTERN



TYPICAL CONCEALMENT LOUVER INSTALLATION

**GRILLE SHOWN WITH CONCEALMENT LOUVER**



TUSCAN SAMPLE PATTERN



MATERIAL: 18 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PROJECT:

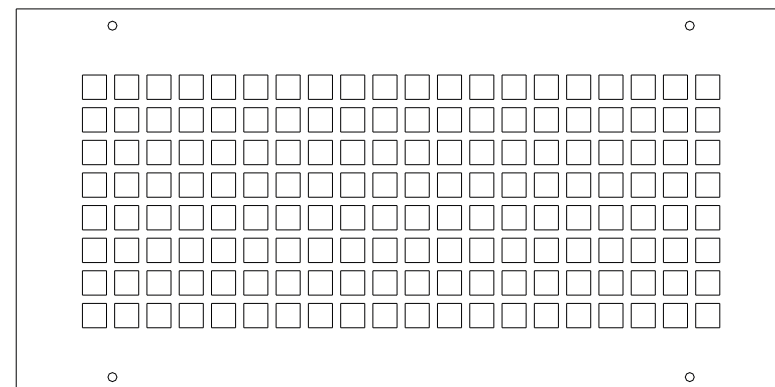
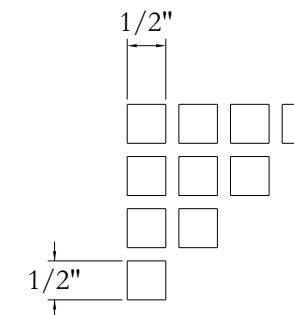
SCALE	NONE
DRAWN	DL
DATE	10-18-06
Q.A.	
COMMENTS	

**CONCEALMENT LOUVERS**

THIS INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF STEELCREST CORPORATION. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT WRITTEN PERMISSION OF STEELCREST CORPORATION IS PROHIBITED

**PATTERN DETAIL MEASUREMENTS**

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 61%

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

**Air Flow Performance Data**

Velocity Static Pressure	250 0.02	500 0.042	750 0.063	1000 0.084	1500 0.126
Size	CFM				
6x6 .25 ft <sup>2</sup>	39	77	118	157	232
8x8 .44 ft <sup>2</sup>	69	137	207	275	418
10x10 .69 ft <sup>2</sup>	108	215	322	432	650
12x12 1.0 ft <sup>2</sup>	157	310	467	620	942
14x14 1.36 ft <sup>2</sup>	213	420	635	845	1261
8x6 .33 ft <sup>2</sup>	52	104	155	207	312
10x6 .42 ft <sup>2</sup>	66	130	196	260	388
12x6 .5 ft <sup>2</sup>	78	156	235	312	463
14x6 .58 ft <sup>2</sup>	91	181	272	365	545
16x6 .67 ft <sup>2</sup>	105	207	312	416	620
18x6 .75 ft <sup>2</sup>	118	232	350	465	697
20x6 .83 ft <sup>2</sup>	130	260	390	515	781
10x8 .56 ft <sup>2</sup>	87	172	260	346	520
12x8 .67 ft <sup>2</sup>	104	205	312	418	621
14x8 .78 ft <sup>2</sup>	122	240	365	482	722
8x4 .22 ft <sup>2</sup>	35	69	104	138	207
10x4 .28 ft <sup>2</sup>	44	87	130	171	260
12x4 .33 ft <sup>2</sup>	52	104	155	205	312

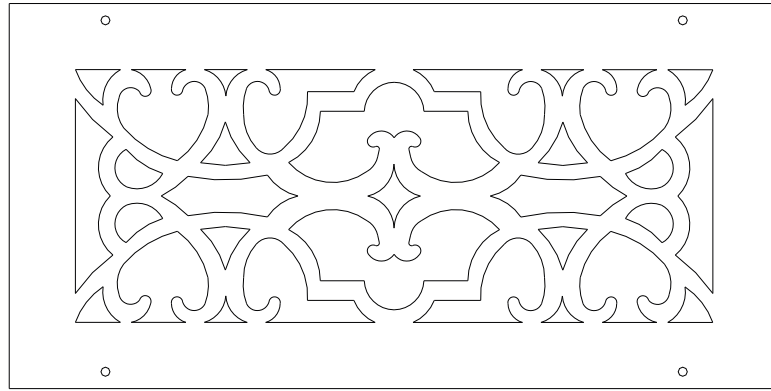
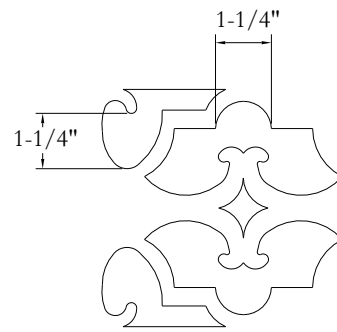
**SQUARE DESIGN**

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



Air Flow Performance Data						
Velocity Static Pressure	250 0.02	500 0.042	750 0.063	1000 0.084	1500 0.126	
Size	CFM					
6x6 .25 ft <sup>2</sup>	39	77	118	157	232	
8x8 .44 ft <sup>2</sup>	69	137	207	275	418	
10x10 .69 ft <sup>2</sup>	108	215	322	432	650	
12x12 1.0 ft <sup>2</sup>	157	310	467	620	942	
14x14 1.36 ft <sup>2</sup>	213	420	635	845	1261	
8x6 .33 ft <sup>2</sup>	52	104	155	207	312	
10x6 .42 ft <sup>2</sup>	66	130	196	260	388	
12x6 .5 ft <sup>2</sup>	78	156	235	312	463	
14x6 .58 ft <sup>2</sup>	91	181	272	365	545	
16x6 .67 ft <sup>2</sup>	105	207	312	416	620	
18x6 .75 ft <sup>2</sup>	118	232	350	465	697	
20x6 .83 ft <sup>2</sup>	130	260	390	515	781	
10x8 .56 ft <sup>2</sup>	87	172	260	346	520	
12x8 .67 ft <sup>2</sup>	104	205	312	418	621	
14x8 .78 ft <sup>2</sup>	122	240	365	482	722	
8x4 .22 ft <sup>2</sup>	35	69	104	138	207	
10x4 .28 ft <sup>2</sup>	44	87	130	171	260	
12x4 .33 ft <sup>2</sup>	52	104	155	205	312	



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 61%

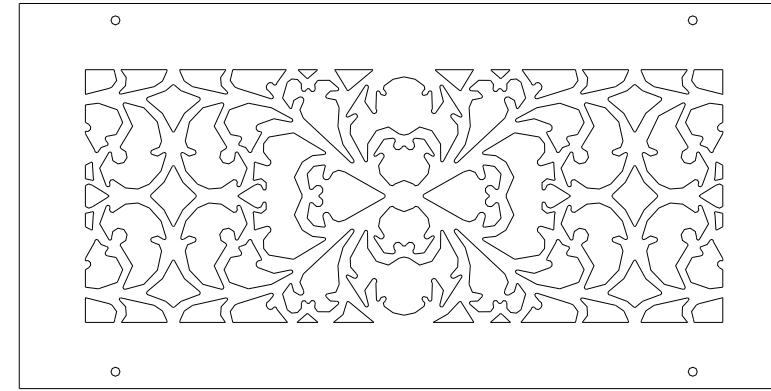
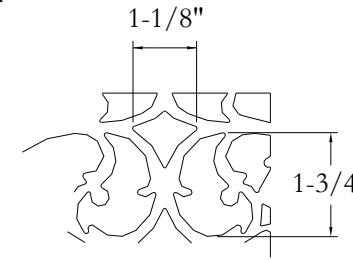
SCALE	NONE
DRAWN	DH
DATE	10-18-06
QA.	
COMMENTS	

### RENAISSANCE DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



Air Flow Performance Data						
Velocity Static Pressure	250 0.009	500 0.018	750 0.027	1000 0.036	1500 0.055	
Size	CFM					
6x6 .25 ft <sup>2</sup>	45	92	135	185	275	
8x8 .44 ft <sup>2</sup>	80	160	240	320	480	
10x10 .69 ft <sup>2</sup>	125	250	375	500	750	
12x12 1.0 ft <sup>2</sup>	180	360	540	720	1100	
14x14 1.36 ft <sup>2</sup>	245	490	735	980	1470	
8x6 .33 ft <sup>2</sup>	60	120	180	240	360	
10x6 .42 ft <sup>2</sup>	75	150	225	300	450	
12x6 .5 ft <sup>2</sup>	90	180	270	360	540	
14x6 .58 ft <sup>2</sup>	105	210	315	420	630	
16x6 .67 ft <sup>2</sup>	120	240	360	480	720	
18x6 .75 ft <sup>2</sup>	135	270	405	540	810	
20x6 .83 ft <sup>2</sup>	150	300	450	600	900	
10x8 .56 ft <sup>2</sup>	100	200	300	400	600	
12x8 .67 ft <sup>2</sup>	120	240	360	480	720	
14x8 .78 ft <sup>2</sup>	140	280	420	560	840	
8x4 .22 ft <sup>2</sup>	40	80	120	160	240	
10x4 .28 ft <sup>2</sup>	50	100	150	200	300	
12x4 .33 ft <sup>2</sup>	60	120	180	240	360	



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 65%

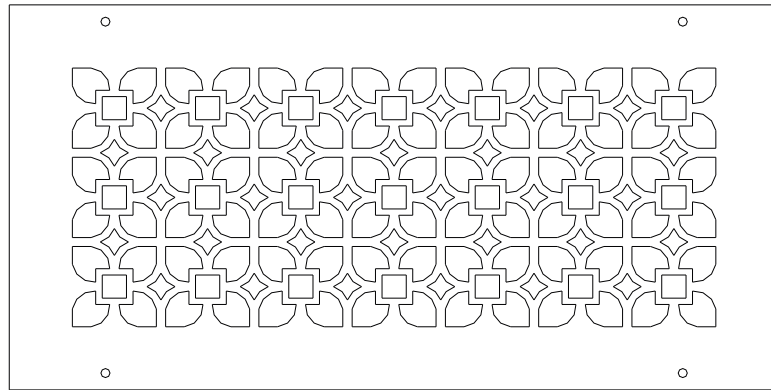
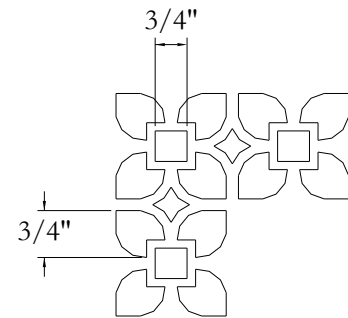
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DATE	10-18-06
QA.	
COMMENTS	

### CHARLESTON DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



Air Flow Performance Data						
Velocity Static Pressure	250 0.005	500 0.011	750 0.0175	1000 0.023	1500 0.035	
Size	CFM					
6x6 .25 ft <sup>2</sup>	42	85	125	170	255	
8x8 .44 ft <sup>2</sup>	75	150	225	300	450	
10x10 .69 ft <sup>2</sup>	115	235	350	465	700	
12x12 1.0 ft <sup>2</sup>	167	335	500	680	1020	
14x14 1.36 ft <sup>2</sup>	225	461	686	911	1372	
8x6 .33 ft <sup>2</sup>	55	113	168	223	336	
10x6 .42 ft <sup>2</sup>	69	141	210	279	420	
12x6 .5 ft <sup>2</sup>	83	169	252	335	504	
14x6 .58 ft <sup>2</sup>	97	197	294	391	588	
16x6 .67 ft <sup>2</sup>	110	226	336	446	672	
18x6 .75 ft <sup>2</sup>	124	254	378	502	756	
20x6 .83 ft <sup>2</sup>	138	282	420	558	840	
10x8 .56 ft <sup>2</sup>	92	188	280	372	560	
12x8 .67 ft <sup>2</sup>	110	226	336	446	672	
14x8 .78 ft <sup>2</sup>	129	263	392	521	784	
8x4 .22 ft <sup>2</sup>	37	75	112	149	224	
10x4 .28 ft <sup>2</sup>	46	94	140	186	280	
12x4 .33 ft <sup>2</sup>	55	113	168	223	336	



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 63%

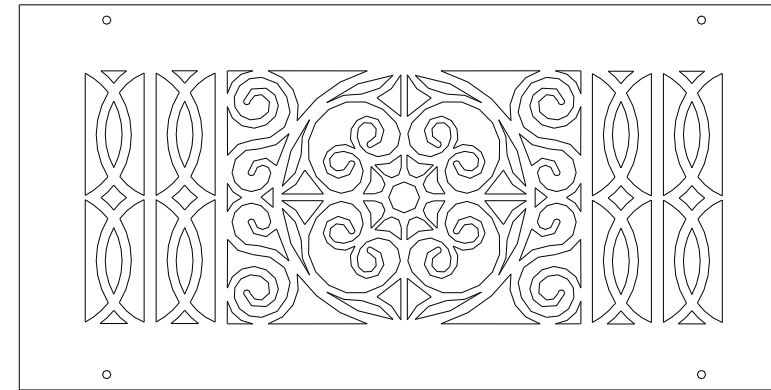
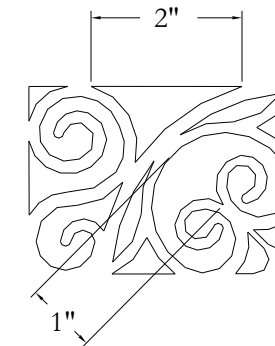
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DATE	10-18-06
QA.	
COMMENTS	

### ROYAL PALM DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



Air Flow Performance Data						
Velocity Static Pressure	250 0.009	500 0.018	750 0.027	1000 0.036	1500 0.055	
Size	CFM					
6x6 .25 ft <sup>2</sup>	45	92	135	185	275	
8x8 .44 ft <sup>2</sup>	80	160	240	320	480	
10x10 .69 ft <sup>2</sup>	125	250	375	500	750	
12x12 1.0 ft <sup>2</sup>	180	360	540	720	1100	
14x14 1.36 ft <sup>2</sup>	245	490	735	980	1470	
8x6 .33 ft <sup>2</sup>	60	120	180	240	360	
10x6 .42 ft <sup>2</sup>	75	150	225	300	450	
12x6 .5 ft <sup>2</sup>	90	180	270	360	540	
14x6 .58 ft <sup>2</sup>	105	210	315	420	630	
16x6 .67 ft <sup>2</sup>	120	240	360	480	720	
18x6 .75 ft <sup>2</sup>	135	270	405	540	810	
20x6 .83 ft <sup>2</sup>	150	300	450	600	900	
10x8 .56 ft <sup>2</sup>	100	200	300	400	600	
12x8 .67 ft <sup>2</sup>	120	240	360	480	720	
14x8 .78 ft <sup>2</sup>	140	280	420	560	840	
8x4 .22 ft <sup>2</sup>	40	80	120	160	240	
10x4 .28 ft <sup>2</sup>	50	100	150	200	300	
12x4 .33 ft <sup>2</sup>	60	120	180	240	360	



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 65%

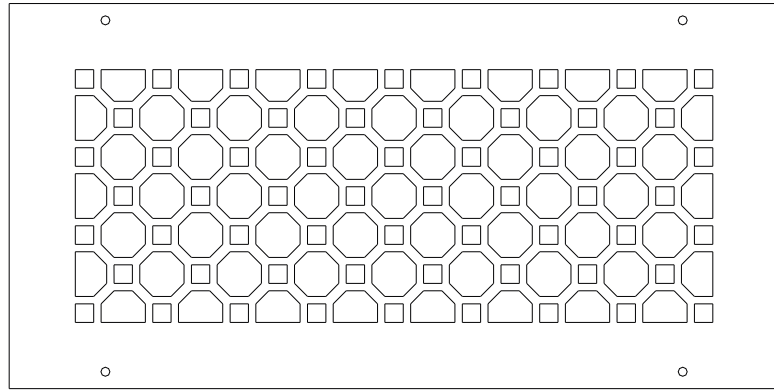
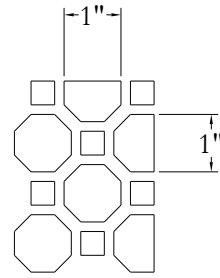
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DATE	10-18-06
QA.	
COMMENTS	

### CLASSIC DESIGN

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## PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.009	500 0.018	750 0.027	1000 0.036	1500 0.055
Size	CFM				
6x6 .25 ft <sup>2</sup>	47	97	141	205	311
8x8 .44 ft <sup>2</sup>	85	172	255	362	502
10x10 .69 ft <sup>2</sup>	130	265	390	544	790
12x12 1.0 ft <sup>2</sup>	187	380	561	740	1195
14x14 1.36 ft <sup>2</sup>	252	512	742	1005	1510
8x6 .33 ft <sup>2</sup>	65	131	195	257	382
10x6 .42 ft <sup>2</sup>	82	162	232	332	470
12x6 .5 ft <sup>2</sup>	97	195	270	360	540
14x6 .58 ft <sup>2</sup>	112	218	315	431	655
16x6 .67 ft <sup>2</sup>	131	253	374	515	787
18x6 .75 ft <sup>2</sup>	147	285	405	540	810
20x6 .83 ft <sup>2</sup>	162	318	462	620	932
10x8 .56 ft <sup>2</sup>	108	216	332	447	661
12x8 .67 ft <sup>2</sup>	131	253	374	500	762
14x8 .78 ft <sup>2</sup>	153	292	445	590	865
8x4 .22 ft <sup>2</sup>	43	95	120	160	240
10x4 .28 ft <sup>2</sup>	55	112	171	221	334
12x4 .33 ft <sup>2</sup>	65	131	195	257	382



MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED

PATTERN OPENNESS: 67%

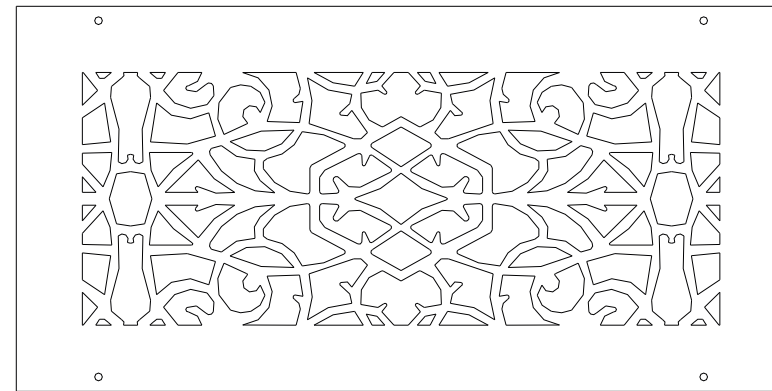
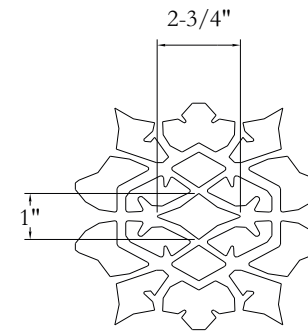
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DATE	10-18-06
QA.	
COMMENTS	

## COBBLESTONE DESIGN

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## PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.005	500 0.011	750 0.0175	1000 0.023	1500 0.035
Size	CFM				
6x6 .25 ft <sup>2</sup>	42	85	125	170	255
8x8 .44 ft <sup>2</sup>	75	150	225	300	450
10x10 .69 ft <sup>2</sup>	115	235	350	465	700
12x12 1.0 ft <sup>2</sup>	167	335	500	680	1020
14x14 1.36 ft <sup>2</sup>	225	461	686	911	1372
8x6 .33 ft <sup>2</sup>	55	113	168	223	336
10x6 .42 ft <sup>2</sup>	69	141	210	279	420
12x6 .5 ft <sup>2</sup>	83	169	252	335	504
14x6 .58 ft <sup>2</sup>	97	197	294	391	588
16x6 .67 ft <sup>2</sup>	110	226	336	446	672
18x6 .75 ft <sup>2</sup>	124	254	378	502	756
20x6 .83 ft <sup>2</sup>	138	282	420	558	840
10x8 .56 ft <sup>2</sup>	92	188	280	372	560
12x8 .67 ft <sup>2</sup>	110	226	336	446	672
14x8 .78 ft <sup>2</sup>	129	263	392	521	784
8x4 .22 ft <sup>2</sup>	37	75	112	149	224
10x4 .28 ft <sup>2</sup>	46	94	140	186	280
12x4 .33 ft <sup>2</sup>	55	113	168	223	336



MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED

PATTERN OPENNESS: 63%

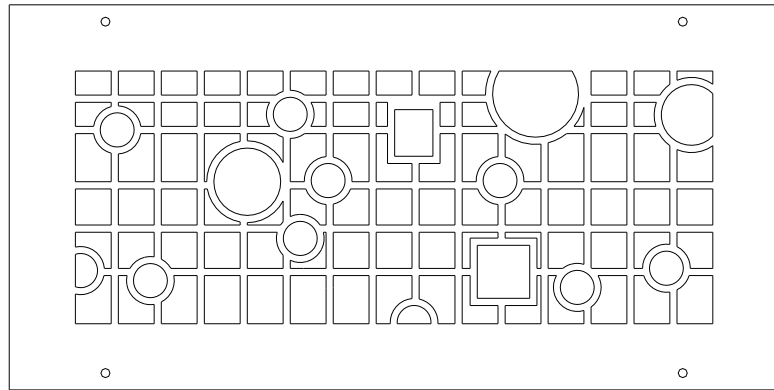
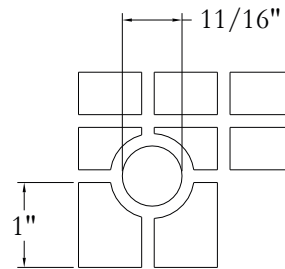
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DRAWN	DH
DATE	10-18-06
QA.	
COMMENTS	

## PRESIDENTIAL DESIGN

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## PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.009	500 0.018	750 0.027	1000 0.036	1500 0.055
Size	CFM				
6x6 .25 ft <sup>2</sup>	45	92	135	185	275
8x8 .44 ft <sup>2</sup>	80	160	240	320	480
10x10 .69 ft <sup>2</sup>	125	250	375	500	750
12x12 1.0 ft <sup>2</sup>	180	360	540	720	1100
14x14 1.36 ft <sup>2</sup>	245	490	735	980	1470
8x6 .33 ft <sup>2</sup>	60	120	180	240	360
10x6 .42 ft <sup>2</sup>	75	150	225	300	450
12x6 .5 ft <sup>2</sup>	90	180	270	360	540
14x6 .58 ft <sup>2</sup>	105	210	315	420	630
16x6 .67 ft <sup>2</sup>	120	240	360	480	720
18x6 .75 ft <sup>2</sup>	135	270	405	540	810
20x6 .83 ft <sup>2</sup>	150	300	450	600	900
10x8 .56 ft <sup>2</sup>	100	200	300	400	600
12x8 .67 ft <sup>2</sup>	120	240	360	480	720
14x8 .78 ft <sup>2</sup>	140	280	420	560	840
8x4 .22 ft <sup>2</sup>	40	80	120	160	240
10x4 .28 ft <sup>2</sup>	50	100	150	200	300
12x4 .33 ft <sup>2</sup>	60	120	180	240	360



MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED

PATTERN OPENNESS: 65%

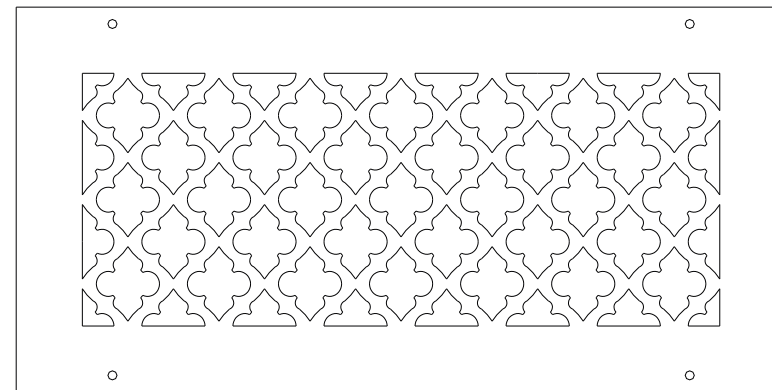
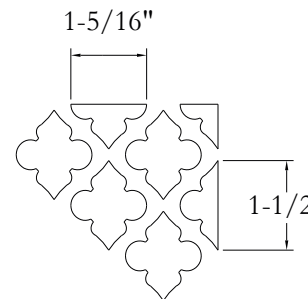
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DATE	10-18-06
QA.	
COMMENTS	

## CONTEMPORARY DESIGN

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## PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.009	500 0.018	750 0.027	1000 0.036	1500 0.055
Size	CFM				
6x6 .25 ft <sup>2</sup>	45	92	135	185	275
8x8 .44 ft <sup>2</sup>	80	160	240	320	480
10x10 .69 ft <sup>2</sup>	125	250	375	500	750
12x12 1.0 ft <sup>2</sup>	180	360	540	720	1100
14x14 1.36 ft <sup>2</sup>	245	490	735	980	1470
8x6 .33 ft <sup>2</sup>	60	120	180	240	360
10x6 .42 ft <sup>2</sup>	75	150	225	300	450
12x6 .5 ft <sup>2</sup>	90	180	270	360	540
14x6 .58 ft <sup>2</sup>	105	210	315	420	630
16x6 .67 ft <sup>2</sup>	120	240	360	480	720
18x6 .75 ft <sup>2</sup>	135	270	405	540	810
20x6 .83 ft <sup>2</sup>	150	300	450	600	900
10x8 .56 ft <sup>2</sup>	100	200	300	400	600
12x8 .67 ft <sup>2</sup>	120	240	360	480	720
14x8 .78 ft <sup>2</sup>	140	280	420	560	840
8x4 .22 ft <sup>2</sup>	40	80	120	160	240
10x4 .28 ft <sup>2</sup>	50	100	150	200	300
12x4 .33 ft <sup>2</sup>	60	120	180	240	360



MATERIAL: 11 GAUGE STEEL  
ABOVE DIMENSIONS ARE IN INCHES  
FINISH: TO BE DETERMINED

PATTERN OPENNESS: 65%

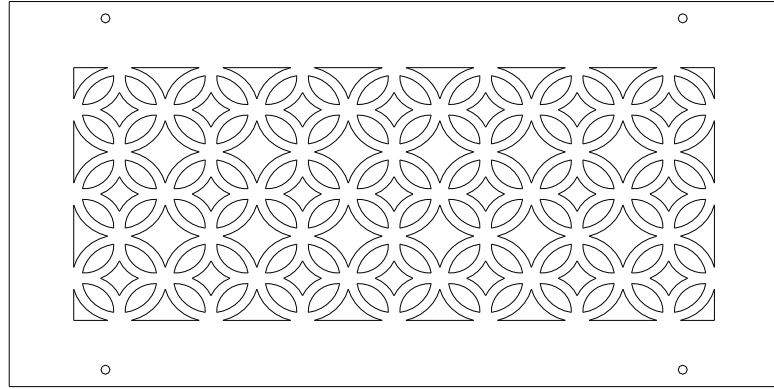
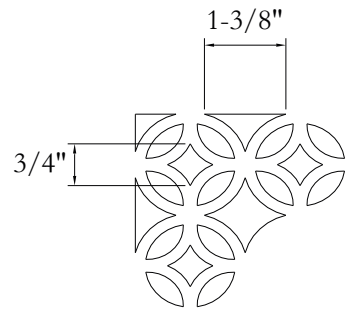
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DATE	10-18-06
QA.	
COMMENTS	

## REGENCY DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



Air Flow Performance Data					
Velocity Static Pressure	250	500	750	1000	1500
Size	CFM				
6x6 .25 ft <sup>2</sup>	32	72	100	135	210
8x8 .44 ft <sup>2</sup>	62	122	185	245	370
10x10 .69 ft <sup>2</sup>	96	195	290	380	580
12x12 1.0 ft <sup>2</sup>	138	282	422	555	840
14x14 1.36 ft <sup>2</sup>	190	385	565	750	1120
8x6 .33 ft <sup>2</sup>	43	93	138	185	279
10x6 .42 ft <sup>2</sup>	57	115	170	230	345
12x6 .5 ft <sup>2</sup>	68	140	202	272	410
14x6 .58 ft <sup>2</sup>	79	165	237	325	480
16x6 .67 ft <sup>2</sup>	91	188	270	362	550
18x6 .75 ft <sup>2</sup>	103	212	300	410	625
20x6 .83 ft <sup>2</sup>	115	235	335	460	685
10x8 .56 ft <sup>2</sup>	75	156	320	306	465
12x8 .67 ft <sup>2</sup>	91	187	270	360	550
14x8 .78 ft <sup>2</sup>	105	220	320	435	650
8x4 .22 ft <sup>2</sup>	29	60	90	121	185
10x4 .28 ft <sup>2</sup>	37	77	113	152	230
12x4 .33 ft <sup>2</sup>	43	91	135	184	275



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 47%

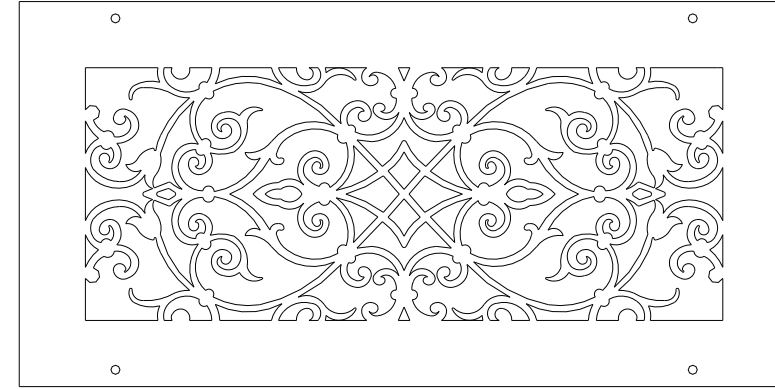
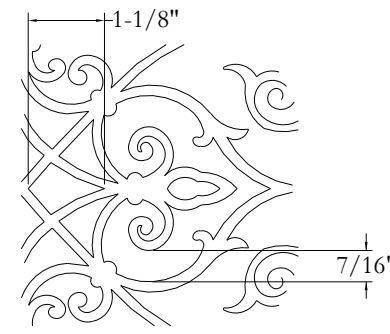
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DATE	10-18-06
QA.	
COMMENTS	

### OMNI DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



Air Flow Performance Data					
Velocity Static Pressure	250	500	750	1000	1500
Size	CFM				
6x6 .25 ft <sup>2</sup>	47	97	141	205	311
8x8 .44 ft <sup>2</sup>	85	172	255	362	502
10x10 .69 ft <sup>2</sup>	130	265	390	544	790
12x12 1.0 ft <sup>2</sup>	187	380	561	740	1195
14x14 1.36 ft <sup>2</sup>	252	512	742	1005	1510
8x6 .33 ft <sup>2</sup>	65	131	195	257	382
10x6 .42 ft <sup>2</sup>	82	162	232	332	470
12x6 .5 ft <sup>2</sup>	97	195	270	360	540
14x6 .58 ft <sup>2</sup>	112	218	315	431	655
16x6 .67 ft <sup>2</sup>	131	253	374	515	787
18x6 .75 ft <sup>2</sup>	147	285	405	540	810
20x6 .83 ft <sup>2</sup>	162	318	462	620	932
10x8 .56 ft <sup>2</sup>	108	216	332	447	661
12x8 .67 ft <sup>2</sup>	131	253	374	500	762
14x8 .78 ft <sup>2</sup>	153	292	445	590	865
8x4 .22 ft <sup>2</sup>	43	95	120	160	240
10x4 .28 ft <sup>2</sup>	55	112	171	221	334
12x4 .33 ft <sup>2</sup>	65	131	195	257	382



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 67%

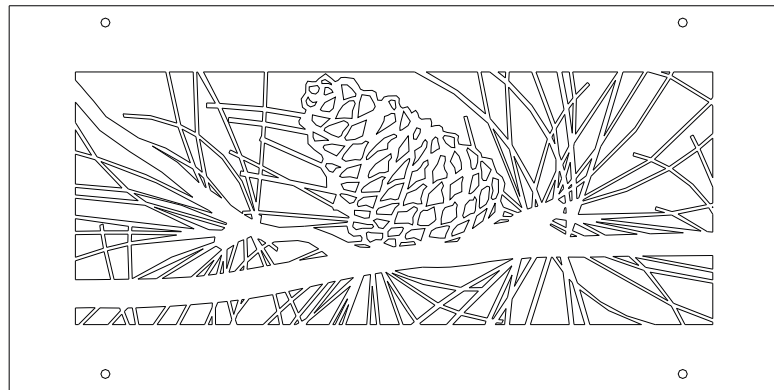
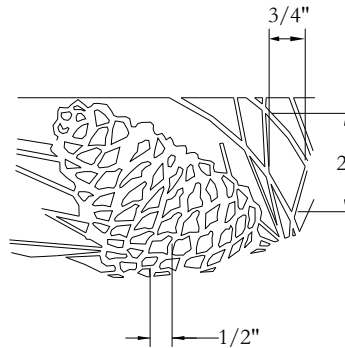
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DATE	10-18-06
QA.	
COMMENTS	

### CORINTHIAN DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



Air Flow Performance Data					
Velocity Static Pressure	250	500	750	1000	1500
Size	CFM				
6x6 .25 ft <sup>2</sup>	42	85	125	170	255
8x8 .44 ft <sup>2</sup>	75	150	225	300	450
10x10 .69 ft <sup>2</sup>	115	235	350	465	700
12x12 1.0 ft <sup>2</sup>	167	335	500	680	1020
14x14 1.36 ft <sup>2</sup>	225	461	686	911	1372
8x6 .33 ft <sup>2</sup>	55	113	168	223	336
10x6 .42 ft <sup>2</sup>	69	141	210	279	420
12x6 .5 ft <sup>2</sup>	83	169	252	335	504
14x6 .58 ft <sup>2</sup>	97	197	294	391	588
16x6 .67 ft <sup>2</sup>	110	226	336	446	672
18x6 .75 ft <sup>2</sup>	124	254	378	502	756
20x6 .83 ft <sup>2</sup>	138	282	420	558	840
10x8 .56 ft <sup>2</sup>	92	188	280	372	560
12x8 .67 ft <sup>2</sup>	110	226	336	446	672
14x8 .78 ft <sup>2</sup>	129	263	392	521	784
8x4 .22 ft <sup>2</sup>	37	75	112	149	224
10x4 .28 ft <sup>2</sup>	46	94	140	186	280
12x4 .33 ft <sup>2</sup>	55	113	168	223	336



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 63%

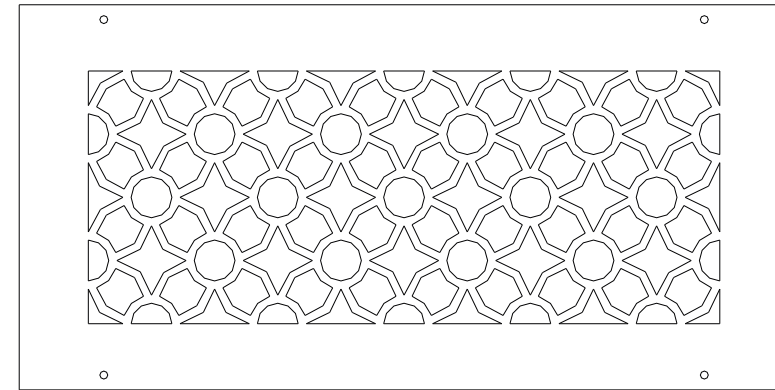
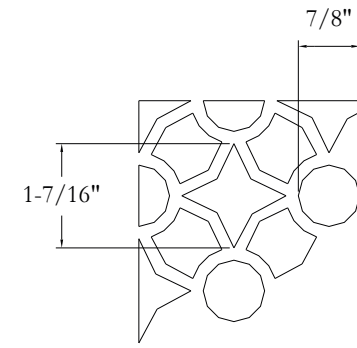
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DATE	10-18-06
QA.	
COMMENTS	

### PINECONE DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



Air Flow Performance Data					
Velocity Static Pressure	250	500	750	1000	1500
Size	CFM				
6x6 .25 ft <sup>2</sup>	47	97	141	205	311
8x8 .44 ft <sup>2</sup>	85	172	255	362	502
10x10 .69 ft <sup>2</sup>	130	265	390	544	790
12x12 1.0 ft <sup>2</sup>	187	380	561	740	1195
14x14 1.36 ft <sup>2</sup>	252	512	742	1005	1510
8x6 .33 ft <sup>2</sup>	65	131	195	257	382
10x6 .42 ft <sup>2</sup>	82	162	232	332	470
12x6 .5 ft <sup>2</sup>	97	195	270	360	540
14x6 .58 ft <sup>2</sup>	112	218	315	431	655
16x6 .67 ft <sup>2</sup>	131	253	374	515	787
18x6 .75 ft <sup>2</sup>	147	285	405	540	810
20x6 .83 ft <sup>2</sup>	162	318	462	620	932
10x8 .56 ft <sup>2</sup>	108	216	332	447	661
12x8 .67 ft <sup>2</sup>	131	253	374	500	762
14x8 .78 ft <sup>2</sup>	153	292	445	590	865
8x4 .22 ft <sup>2</sup>	43	95	120	160	240
10x4 .28 ft <sup>2</sup>	55	112	171	221	334
12x4 .33 ft <sup>2</sup>	65	131	195	257	382



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 67%

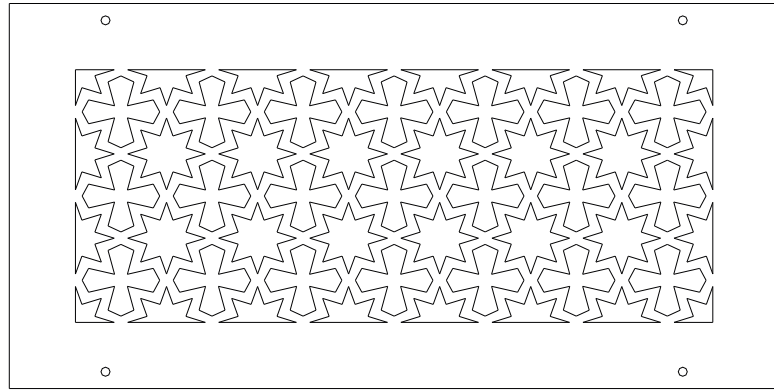
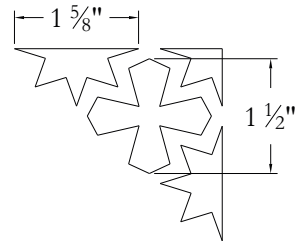
SCALE	NONE
DRAWN	DH
DATE	10-18-06
QA.	
COMMENTS	

### EXPO DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.02	500 0.042	750 0.063	1000 0.084	1500 0.126
Size	CFM				
6x6 .25 ft <sup>2</sup>	38	75	115	155	230
8x8 .44 ft <sup>2</sup>	68	135	205	270	405
10x10 .69 ft <sup>2</sup>	105	210	315	425	635
12x12 1.0 ft <sup>2</sup>	155	305	460	610	915
14x14 1.36 ft <sup>2</sup>	211	415	626	830	1245
8x6 .33 ft <sup>2</sup>	52	102	153	203	305
10x6 .42 ft <sup>2</sup>	65	127	192	254	381
12x6 .5 ft <sup>2</sup>	77	152	230	305	457
14x6 .58 ft <sup>2</sup>	90	178	268	356	534
16x6 .67 ft <sup>2</sup>	103	203	307	407	610
18x6 .75 ft <sup>2</sup>	116	229	345	457	686
20x6 .83 ft <sup>2</sup>	129	254	383	508	762
10x8 .56 ft <sup>2</sup>	86	169	256	339	508
12x8 .67 ft <sup>2</sup>	103	203	307	407	610
14x8 .78 ft <sup>2</sup>	121	237	358	474	712
8x4 .22 ft <sup>2</sup>	34	68	102	136	203
10x4 .28 ft <sup>2</sup>	43	85	128	169	254
12x4 .33 ft <sup>2</sup>	52	102	153	203	305



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 60%

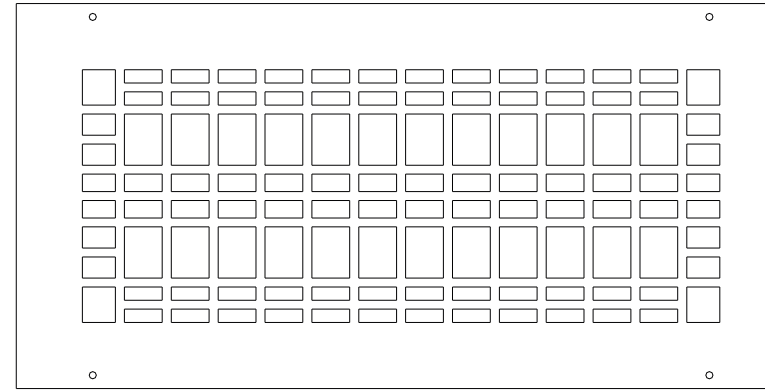
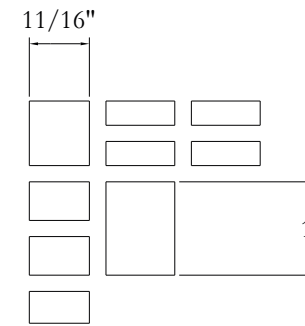
SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### GOTHIC DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.015	500 0.03	750 0.046	1000 0.061	1500 0.093
Size	CFM				
6x6 .25 ft <sup>2</sup>	40	80	120	160	235
8x8 .44 ft <sup>2</sup>	70	140	210	280	425
10x10 .69 ft <sup>2</sup>	110	220	330	440	660
12x12 1.0 ft <sup>2</sup>	160	320	475	635	955
14x14 1.36 ft <sup>2</sup>	216	431	647	862	1294
8x6 .33 ft <sup>2</sup>	53	106	158	211	317
10x6 .42 ft <sup>2</sup>	66	132	198	264	396
12x6 .5 ft <sup>2</sup>	79	158	238	317	475
14x6 .58 ft <sup>2</sup>	92	185	277	370	554
16x6 .67 ft <sup>2</sup>	106	211	317	422	634
18x6 .75 ft <sup>2</sup>	119	238	356	475	713
20x6 .83 ft <sup>2</sup>	132	264	396	528	792
10x8 .56 ft <sup>2</sup>	88	176	264	352	528
12x8 .67 ft <sup>2</sup>	106	211	317	422	634
14x8 .78 ft <sup>2</sup>	123	246	370	493	739
8x4 .22 ft <sup>2</sup>	35	70	106	141	211
10x4 .28 ft <sup>2</sup>	44	88	132	176	264
12x4 .33 ft <sup>2</sup>	53	106	158	211	317



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 62%

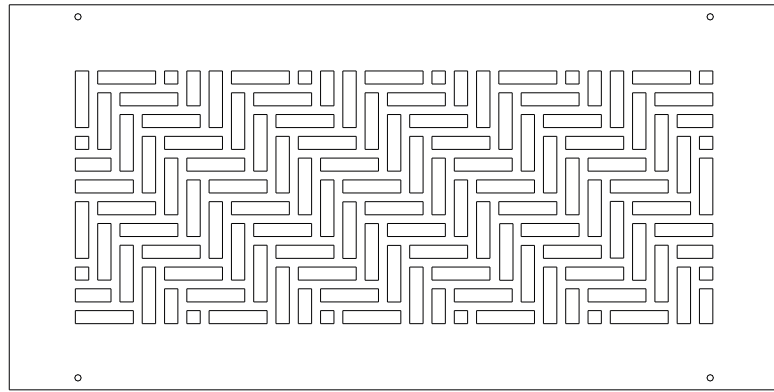
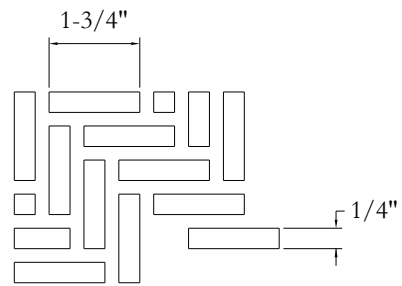
SCALE	NONE
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DATE	10-18-06
Q.A.	
COMMENTS	

### MISSION DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.005	500 0.011	750 0.0175	1000 0.023	1500 0.035
Size	CFM				
6x6 .25 ft <sup>2</sup>	42	85	125	170	255
8x8 .44 ft <sup>2</sup>	75	150	225	300	450
10x10 .69 ft <sup>2</sup>	115	235	350	465	700
12x12 1.0 ft <sup>2</sup>	167	335	500	680	1020
14x14 1.36 ft <sup>2</sup>	225	461	686	911	1372
8x6 .33 ft <sup>2</sup>	55	113	168	223	336
10x6 .42 ft <sup>2</sup>	69	141	210	279	420
12x6 .5 ft <sup>2</sup>	83	169	252	335	504
14x6 .58 ft <sup>2</sup>	97	197	294	391	588
16x6 .67 ft <sup>2</sup>	110	226	336	446	672
18x6 .75 ft <sup>2</sup>	124	254	378	502	756
20x6 .83 ft <sup>2</sup>	138	282	420	558	840
10x8 .56 ft <sup>2</sup>	92	188	280	372	560
12x8 .67 ft <sup>2</sup>	110	226	336	446	672
14x8 .78 ft <sup>2</sup>	129	263	392	521	784
8x4 .22 ft <sup>2</sup>	37	75	112	149	224
10x4 .28 ft <sup>2</sup>	46	94	140	186	280
12x4 .33 ft <sup>2</sup>	55	113	168	223	336



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 63%

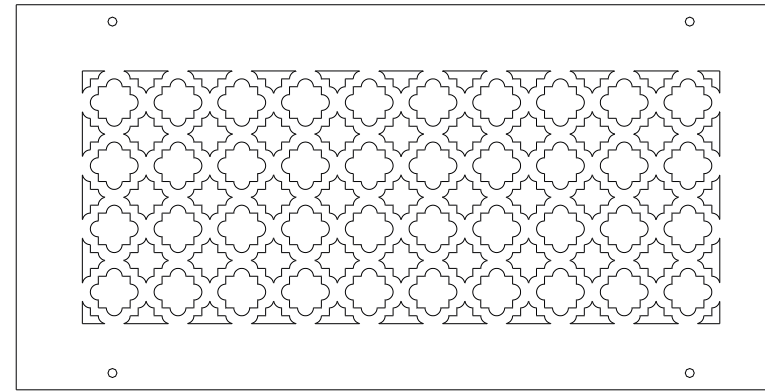
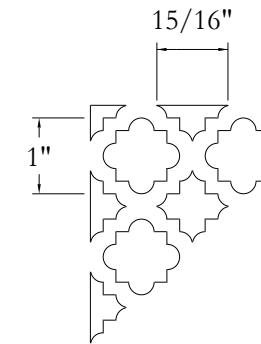
SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### HERRINGBONE DESIGN

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### PATTERN DETAIL MEASUREMENTS

NOTE: MEASUREMENTS ARE APPROXIMATE AND WILL VARY WITH REGISTER SIZE.



### Air Flow Performance Data

Velocity Static Pressure	250 0.009	500 0.018	750 0.027	1000 0.036	1500 0.055
Size	CFM				
6x6 .25 ft <sup>2</sup>	45	92	135	185	275
8x8 .44 ft <sup>2</sup>	80	160	240	320	480
10x10 .69 ft <sup>2</sup>	125	250	375	500	750
12x12 1.0 ft <sup>2</sup>	180	360	540	720	1100
14x14 1.36 ft <sup>2</sup>	245	490	735	980	1470
8x6 .33 ft <sup>2</sup>	60	120	180	240	360
10x6 .42 ft <sup>2</sup>	75	150	225	300	450
12x6 .5 ft <sup>2</sup>	90	180	270	360	540
14x6 .58 ft <sup>2</sup>	105	210	315	420	630
16x6 .67 ft <sup>2</sup>	120	240	360	480	720
18x6 .75 ft <sup>2</sup>	135	270	405	540	810
20x6 .83 ft <sup>2</sup>	150	300	450	600	900
10x8 .56 ft <sup>2</sup>	100	200	300	400	600
12x8 .67 ft <sup>2</sup>	120	240	360	480	720
14x8 .78 ft <sup>2</sup>	140	280	420	560	840
8x4 .22 ft <sup>2</sup>	40	80	120	160	240
10x4 .28 ft <sup>2</sup>	50	100	150	200	300
12x4 .33 ft <sup>2</sup>	60	120	180	240	360



MATERIAL: 11 GAUGE STEEL  
 ABOVE DIMENSIONS ARE IN INCHES  
 FINISH: TO BE DETERMINED  
 PATTERN OPENNESS: 65%

SCALE	NONE
DRAWN	DH
DATE	10-18-06
Q.A.	
COMMENTS	

### NEW CLASSIC DESIGN

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