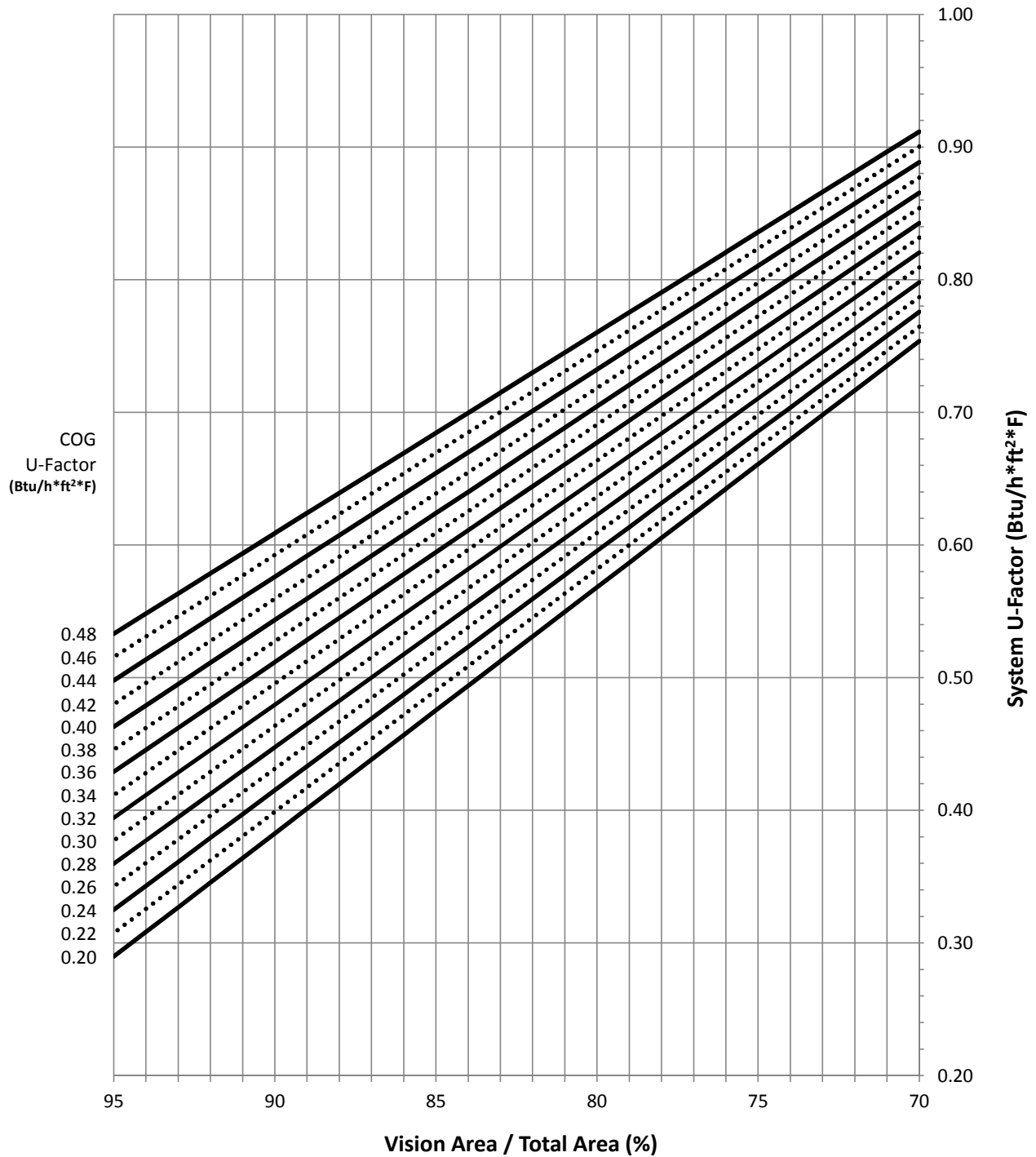
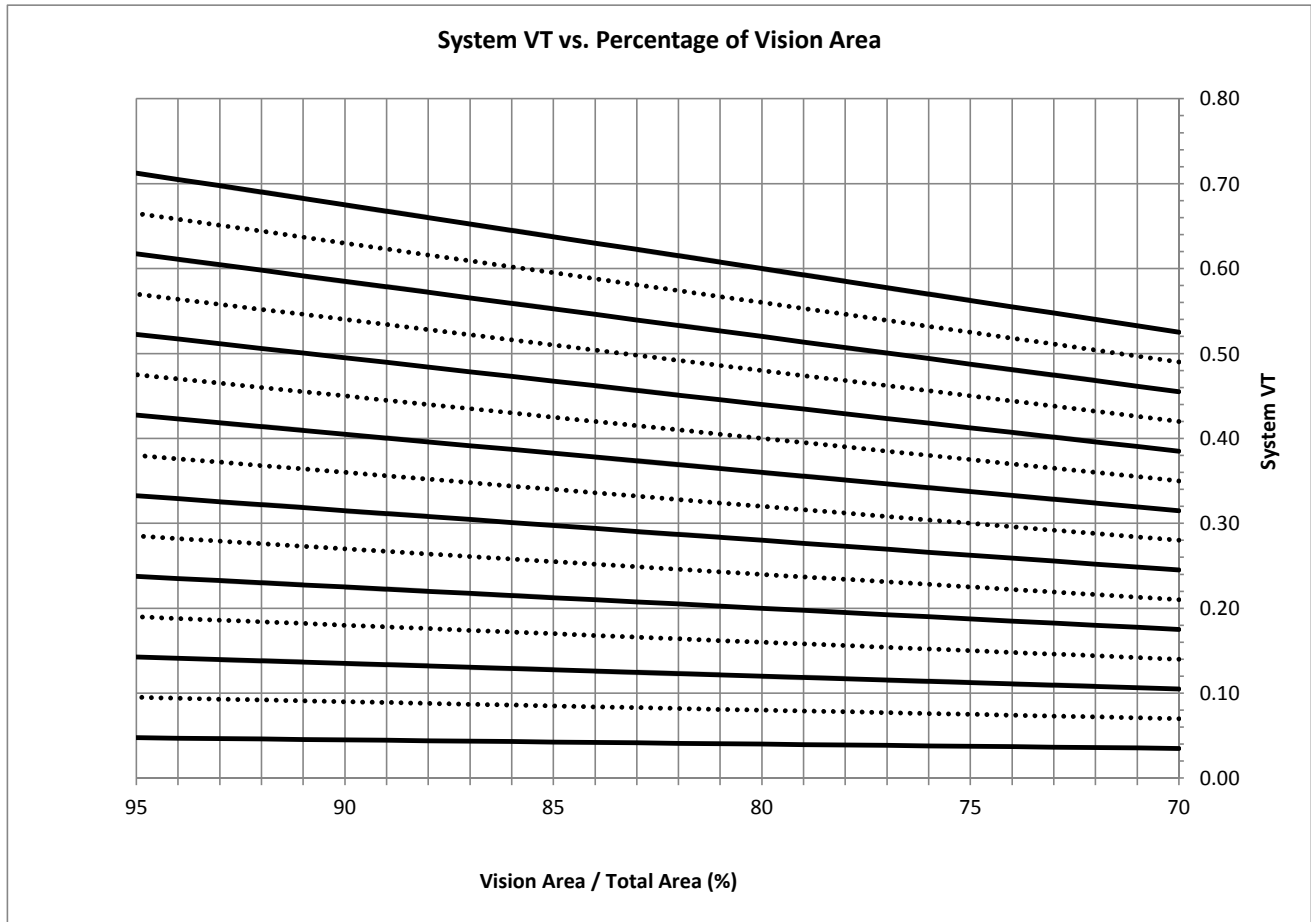
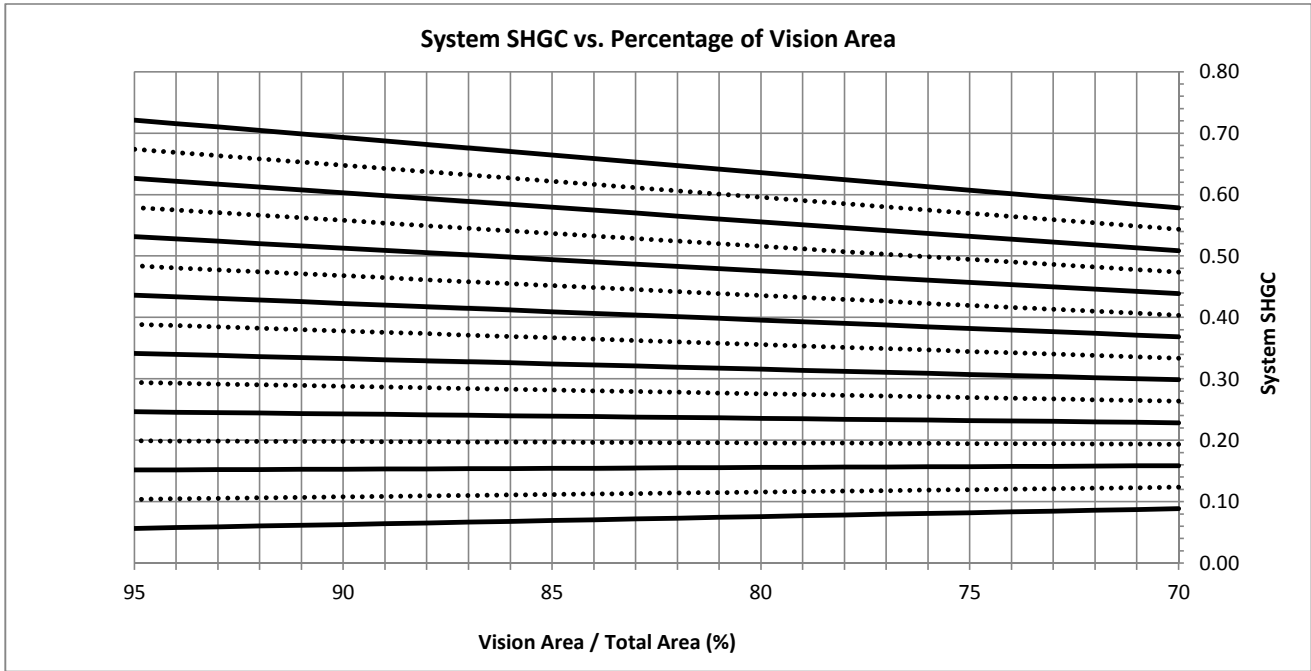


- 1.0 Product Manufacturer:** Coral Architectural Products
3010 Rice Mine Road
Tuscaloosa, AL 35406
- 2.0 Product Model:** PW251 Curtain Wall
- 3.0 Operator Type:** Glazed Wall Curtain Wall O-O
- 4.0 Simulations Performed:** Thermal simulations were performed in accordance with AAMA 507-07, *Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings*, using NFRC-approved simulation programs WINDOW6.3 and THERM6.3, and current versions of NFRC 100-2010 and NFRC 200-2010.
- 5.0 Framing Type:** Painted aluminum with EPDM isolator gasket, creating a thermally improved interior condition (AU) all members.
- 6.0 Sash Type:** N/A
- 7.0 Grilles:** N/A
- 8.0 Weatherstripping:** N/A
- 9.0 Hardware:** N/A
- 10.0 Edge-of-Glass Construction:** Pressure-plate captured system with exterior and interior EPDM glazing gaskets.
- 11.0 I.G. Spacer Type:** Generic aluminum box spacer, with 0.01" PIB primary seals between spacer and glass, and .181" depth silicone secondary sealant, was utilized for all simulations.
- 12.0 Grouping:** N/A
- 13.0 Simulation Software:** Simulations were performed using NFRC-approved simulation programs WINDOW6.3 and THERM6.3, in accordance with current versions of NFRC 100-2010, NFRC 200-2010, and NFRC 500-2010.
- 14.0 Drawings:** This report is incomplete if not accompanied by component and assembly drawings of the indicated product, provided by Coral, totaling 5 pages, bearing the initialed stamp of Turner Engineering & Consulting, Inc.
- 15.0 Simulation Results:** Please see the following charts and tables.

System U-Factor vs. Percentage of Vision Area





Size-Specific U-Factor (Btu/h-ft²-F) Matrix: NFRC Standard Size (78.740" x 78.740")

Glazing Option	Center-of-Glass U-Factor	Overall U-Factor
1	0.48	0.62
2	0.46	0.60
3	0.44	0.59
4	0.42	0.57
5	0.40	0.55
6	0.38	0.54
7	0.36	0.52
8	0.34	0.50
9	0.32	0.49
10	0.30	0.47
11	0.28	0.45
12	0.26	0.44
13	0.24	0.42
14	0.22	0.41
15	0.20	0.39

Size-Specific SHGC Matrix:
NFRC Standard Size (78.740" x 78.740")

Center-of-Glass SHGC	Overall SHGC
0.75	0.69
0.70	0.65
0.65	0.60
0.60	0.56
0.55	0.51
0.50	0.47
0.45	0.42
0.40	0.38
0.35	0.33
0.30	0.29
0.25	0.24
0.20	0.20
0.15	0.15
0.10	0.11
0.05	0.06

Size-Specific VT Matrix:
NFRC Standard Size (78.740" x 78.740")

Center-of-Glass VT	Overall VT
0.75	0.67
0.70	0.63
0.65	0.58
0.60	0.54
0.55	0.49
0.50	0.45
0.45	0.40
0.40	0.36
0.35	0.31
0.30	0.27
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04

Glazing Option	NFRC COG U-Factor (Btu/h-ft2-F) *	NFRC COG Temperature (F) *	Frame Section	Frame Width (in.)	Frame U-factor (Btu/h-ft2-F)	Edge U-Factor (Btu/h-ft2-F)	Size Specific Data **		
							70% Vision Area	NFRC 100 Standard Size (89.7% Vision Area)	95% Vision Area
1	0.48	44.0	L Head	1.3750	1.9303	0.4553	COG U-factors (Btu/h-ft2-F) *		
			L Jamb	1.3773	1.9675	0.4523	0.4881	0.4678	0.4592
			L Sill	1.3791	1.9094	0.4556	Total Product U-factors (Btu/h-ft2-F)		
			R Head	1.3750	1.9303	0.4553	0.91	0.62	0.53
			R Jamb	1.3797	1.9594	0.4527			
			R Sill	1.3791	1.9094	0.4556			
			Int. Vert.	2.7570	1.9634	0.4525			
2	0.46	45.0	L Head	1.3750	1.9312	0.4418	COG U-factors (Btu/h-ft2-F) *		
			L Jamb	1.3773	1.9683	0.4387	0.4674	0.4488	0.4400
			L Sill	1.3791	1.9102	0.4421	Total Product U-factors (Btu/h-ft2-F)		
			R Head	1.3750	1.9312	0.4418	0.90	0.60	0.52
			R Jamb	1.3797	1.9603	0.4391			
			R Sill	1.3791	1.9102	0.4421			
			Int. Vert.	2.7570	1.9643	0.4389			
3	0.44	46.1	L Head	1.3750	1.9308	0.4279	COG U-factors (Btu/h-ft2-F) *		
			L Jamb	1.3773	1.9679	0.4249	0.4467	0.4298	0.4210
			L Sill	1.3791	1.9098	0.4282	Total Product U-factors (Btu/h-ft2-F)		
			R Head	1.3750	1.9308	0.4279	0.89	0.59	0.50
			R Jamb	1.3797	1.9599	0.4253			
			R Sill	1.3791	1.9098	0.4282			
			Int. Vert.	2.7570	1.9639	0.4251			
4	0.42	47.1	L Head	1.3750	1.9305	0.4141	COG U-factors (Btu/h-ft2-F) *		
			L Jamb	1.3773	1.9675	0.4111	0.4262	0.4106	0.4017
			L Sill	1.3791	1.9095	0.4144	Total Product U-factors (Btu/h-ft2-F)		
			R Head	1.3750	1.9305	0.4141	0.88	0.57	0.48
			R Jamb	1.3797	1.9596	0.4115			
			R Sill	1.3791	1.9095	0.4144			
			Int. Vert.	2.7570	1.9635	0.4113			
5	0.40	48.1	L Head	1.3750	1.9303	0.4004	COG U-factors (Btu/h-ft2-F) *		
			L Jamb	1.3773	1.9672	0.3974	0.4056	0.3915	0.3833
			L Sill	1.3791	1.9094	0.4007	Total Product U-factors (Btu/h-ft2-F)		
			R Head	1.3750	1.9303	0.4004	0.87	0.55	0.46
			R Jamb	1.3797	1.9593	0.3978			
			R Sill	1.3791	1.9094	0.4007			
			Int. Vert.	2.7570	1.9633	0.3976			

* NFRC COG U-factor and Temperature are calculated at the standard NFRC size of 1 meter glazing height. The Size Specific COG U-factors are calculated at the actual product height.

** All product sizes and areas calculated using NFRC centerline approach on verticals.

Glazing Option	NFRC COG U-Factor (Btu/h-ft ² -F) *	NFRC COG Temperature (F) *	Frame Section	Frame Width (in.)	Frame U-factor (Btu/h-ft ² -F)	Edge U-Factor (Btu/h-ft ² -F)	Size Specific Data **		
							70% Vision Area	NFRC 100 Standard Size (89.7% Vision Area)	95% Vision Area
							25.582" x 25.582"	78.740" x 78.740"	163.510" x 163.510"
6	0.38	49.2	L Head	1.3750	1.9303	0.3867	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9671	0.3837	0.3852	0.3722	0.3648
			L Sill	1.3791	1.9093	0.3870	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9303	0.3867	0.85	0.54	0.45
			R Jamb	1.3797	1.9592	0.3842			
			R Sill	1.3791	1.9093	0.3870			
			Int. Vert.	2.7570	1.9632	0.3839			
7	0.36	50.2	L Head	1.3750	1.9302	0.3732	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9680	0.3702	0.3645	0.3532	0.3467
			L Sill	1.3791	1.9092	0.3734	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9302	0.3732	0.84	0.52	0.43
			R Jamb	1.3797	1.9613	0.3698			
			R Sill	1.3791	1.9092	0.3734			
			Int. Vert.	2.7570	1.9647	0.3700			
8	0.34	51.3	L Head	1.3750	1.9324	0.3589	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9698	0.3561	0.3441	0.3337	0.3277
			L Sill	1.3791	1.9102	0.3600	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9324	0.3589	0.83	0.50	0.41
			R Jamb	1.3797	1.9620	0.3564			
			R Sill	1.3791	1.9102	0.3600			
			Int. Vert.	2.7570	1.9659	0.3562			
9	0.32	52.3	L Head	1.3750	1.9335	0.3455	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9698	0.3427	0.3236	0.3145	0.3092
			L Sill	1.3791	1.9126	0.3457	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9335	0.3455	0.82	0.49	0.39
			R Jamb	1.3797	1.9620	0.3430			
			R Sill	1.3791	1.9126	0.3457			
			Int. Vert.	2.7570	1.9659	0.3429			
10	0.30	53.4	L Head	1.3750	1.9336	0.3322	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9699	0.3294	0.3032	0.2952	0.2906
			L Sill	1.3791	1.9127	0.3323	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9336	0.3322	0.81	0.47	0.38
			R Jamb	1.3797	1.9621	0.3296			
			R Sill	1.3791	1.9127	0.3323			
			Int. Vert.	2.7570	1.9660	0.3295			

* NFRC COG U-factor and Temperature are calculated at the standard NFRC size of 1 meter glazing height. The Size Specific COG U-factors are calculated at the actual product height.

** All product sizes and areas calculated using NFRC centerline approach on verticals.

Glazing Option	NFRC COG U-Factor (Btu/h-ft ² -F) *	NFRC COG Temperature (F) *	Frame Section	Frame Width (in.)	Frame U-factor (Btu/h-ft ² -F)	Edge U-Factor (Btu/h-ft ² -F)	Size Specific Data **		
							70% Vision Area	NFRC 100 Standard Size (89.7% Vision Area)	95% Vision Area
11	0.28	54.4	L Head	1.3750	1.9338	0.3188	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9700	0.3161	0.2828	0.2758	0.2717
			L Sill	1.3791	1.9128	0.3190	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9338	0.3188	0.80	0.45	0.36
			R Jamb	1.3797	1.9623	0.3163			
			R Sill	1.3791	1.9128	0.3190			
			Int. Vert.	2.7570	1.9662	0.3162			
12	0.26	55.5	L Head	1.3750	1.9340	0.3056	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9703	0.3029	0.2623	0.2565	0.2531
			L Sill	1.3791	1.9130	0.3057	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9340	0.3056	0.79	0.44	0.34
			R Jamb	1.3797	1.9625	0.3031			
			R Sill	1.3791	1.9130	0.3057			
			Int. Vert.	2.7570	1.9664	0.3030			
13	0.24	56.5	L Head	1.3750	1.9343	0.2924	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9705	0.2897	0.2420	0.2370	0.2341
			L Sill	1.3791	1.9133	0.2925	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9343	0.2924	0.78	0.42	0.32
			R Jamb	1.3797	1.9627	0.2899			
			R Sill	1.3791	1.9133	0.2925			
			Int. Vert.	2.7570	1.9666	0.2898			
14	0.22	57.6	L Head	1.3750	1.9346	0.2792	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9708	0.2765	0.2217	0.2175	0.2151
			L Sill	1.3791	1.9136	0.2794	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9346	0.2792	0.76	0.41	0.31
			R Jamb	1.3797	1.9631	0.2768			
			R Sill	1.3791	1.9136	0.2794			
			Int. Vert.	2.7570	1.9669	0.2766			
15	0.20	58.7	L Head	1.3750	1.9352	0.2660	COG U-factors (Btu/h-ft ² -F) *		
			L Jamb	1.3773	1.9715	0.2633	0.2014	0.1979	0.1959
			L Sill	1.3791	1.9142	0.2662	Total Product U-factors (Btu/h-ft ² -F)		
			R Head	1.3750	1.9352	0.2660	0.75	0.39	0.29
			R Jamb	1.3797	1.9638	0.2636			
			R Sill	1.3791	1.9142	0.2662			
			Int. Vert.	2.7570	1.9677	0.2634			

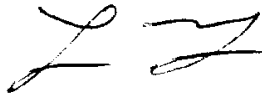
* NFRC COG U-factor and Temperature are calculated at the standard NFRC size of 1 meter glazing height. The Size Specific COG U-factors are calculated at the actual product height.

** All product sizes and areas calculated using NFRC centerline approach on verticals.

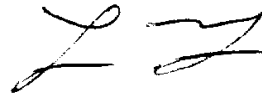
16.0 Compliance and Disclaimer Statements: This report shall not be reproduced, except in full, without the approval of TE&C. This report relates only to the fenestration products simulated. All rounding was performed per NFRC 601, NFRC Unit and Measurement Policy. The results obtained from this report are for controlled simulation conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening. All simulations performed in this report were conducted in full compliance with all NFRC requirements by Turner Engineering & Consulting, Inc. TE&C does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products simulated or tested at TE&C. TE&C is not owned, operated or controlled by any company manufacturing or distributing products it simulates or tests. This report is only intended for the use of the entity named in section 1.0 of this report. A copy of this report will be retained at TE&C for a period of five (5) years.

17.0 Simulator: Lucas A. Turner, P.E.

18.0 Simulator in Responsible Charge: Lucas A. Turner, P.E., attests to the technical accuracy and content of this report.



Simulator Signature




Simulator in Responsible Charge Signature

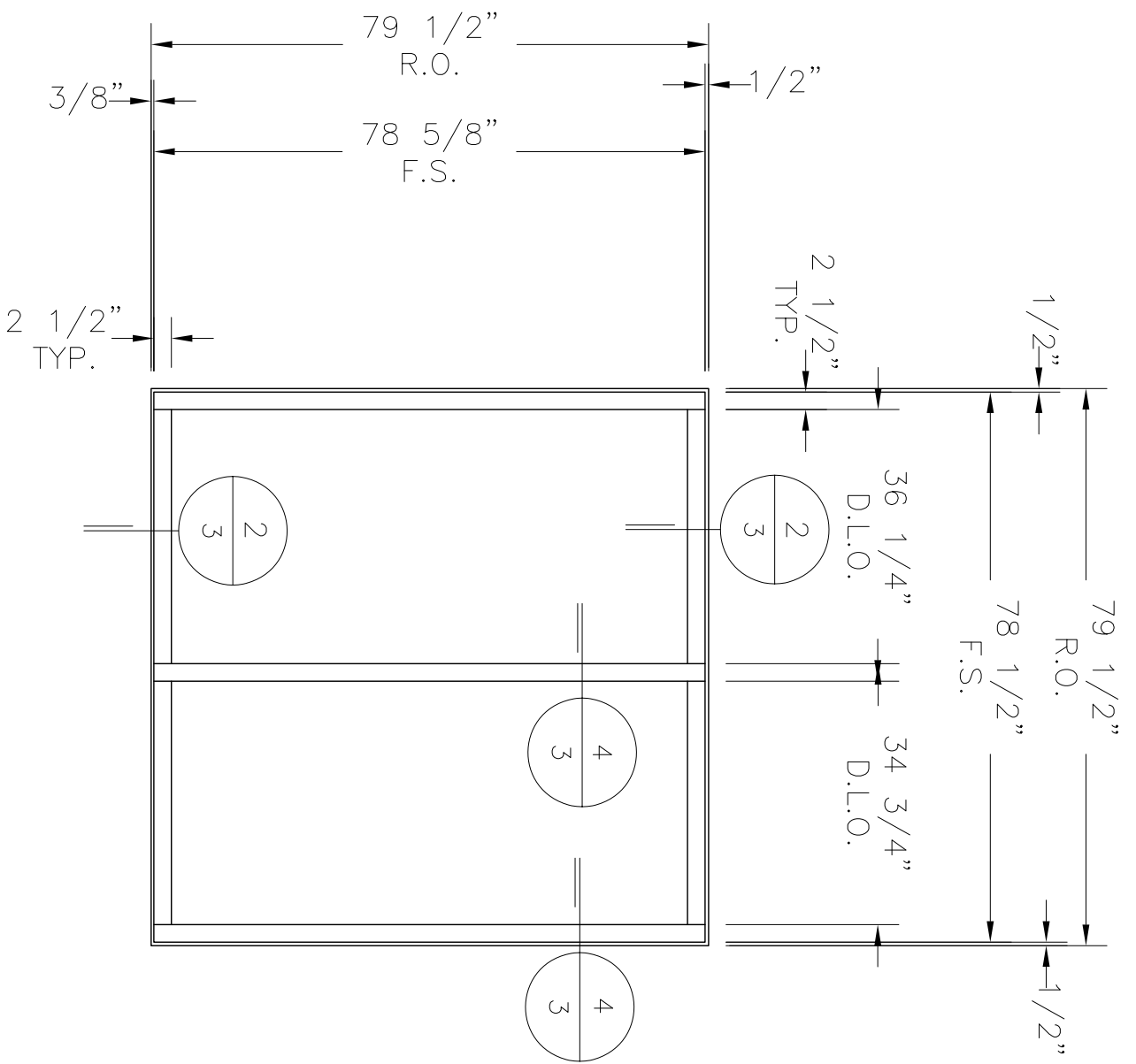
Drawing Appendix

**Following drawings and data provided
by Client, totaling 5 pages**

PW251 NFRC CMAST SUBMITTAL DRAWINGS

	INDEX TO DRAWINGS
1	INDEX TO DRAWINGS AND NOTES
2	STANDARD FRAMING ELEVATION
3	STANDARD FRAMING DETAILS
4	BILL OF MATERIALS
5	DIE DRAWINGS

	<small>The information on this page, unless otherwise noted or stricken, is representative of the materials and profiles used in modeling performed for Report: CAP-052115-05 Initials: ZZ</small>	



TYPICAL ELEVATION

TURNER
ENGINEERING & CONSULTING, INC.

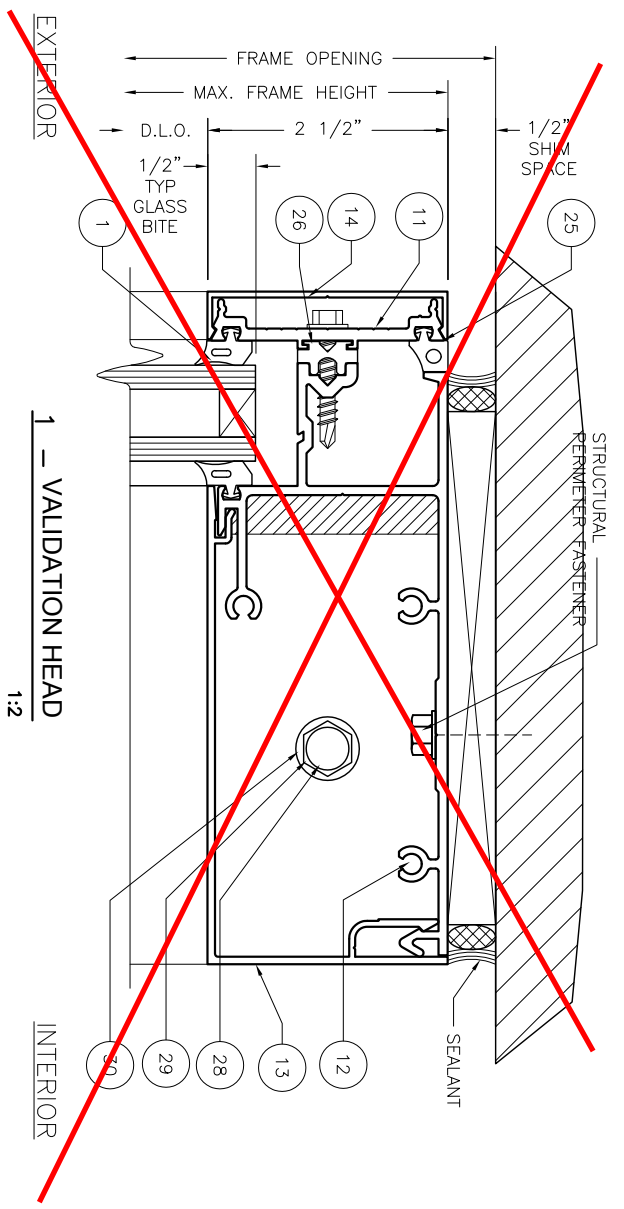
The information on this page, unless otherwise noted or stricken, is representative of the materials and profiles used in modeling performed for Report: **CAP-052115-05** Initials: *ZZ*

PW251 AAMA 507
NFR CMAST
SUBMITTAL DRAWINGS
FRAMING ELEVATION

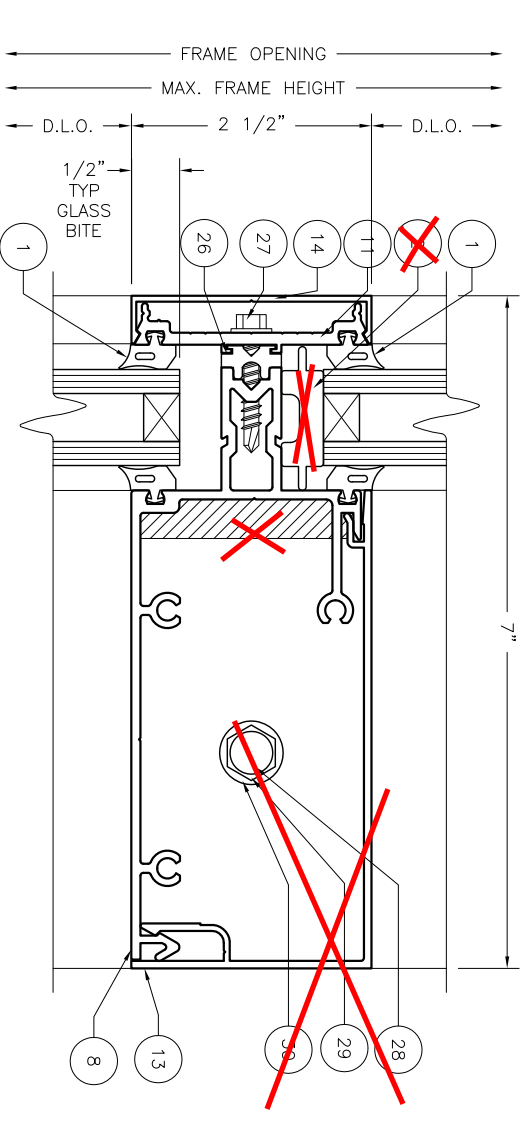
Coral
Architectural Products
3010 RICE MINE ROAD, TUSCALOOSA, AL 35406
PHONE: 800-772-7737 FAX: 800-443-6261

REV	BY	DATE	DESCRIPTION

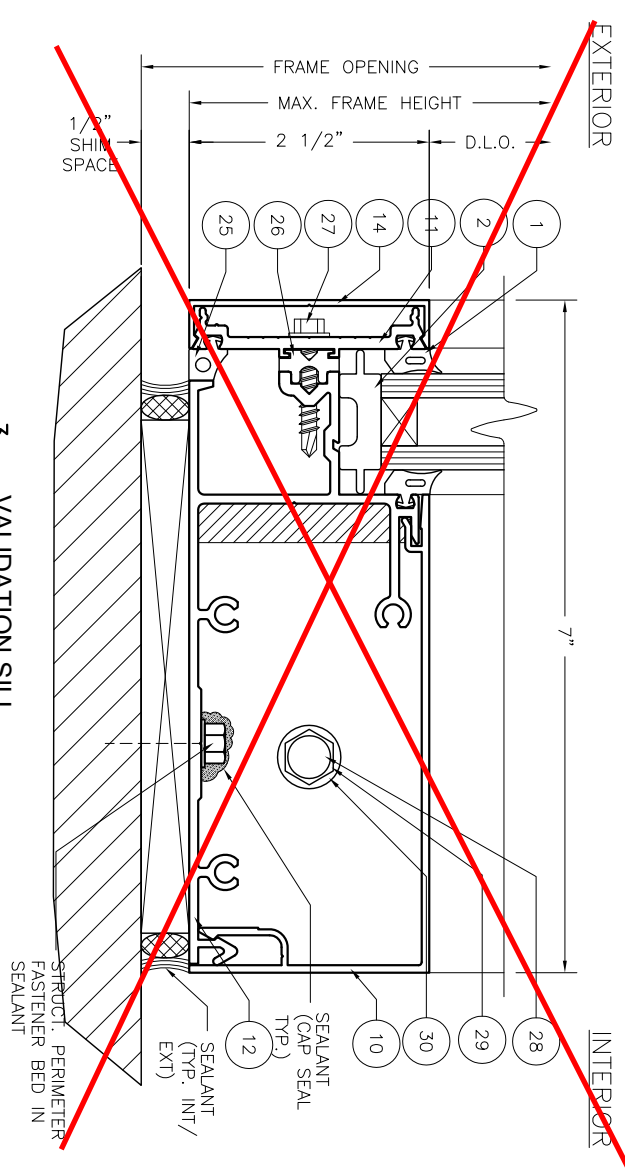
PROJECT NO. AAMA PW251	DRAWN ---	DATE 1/16/2014
	CHECKED ---	APPROVED ---
SHEET 2 OF 5		



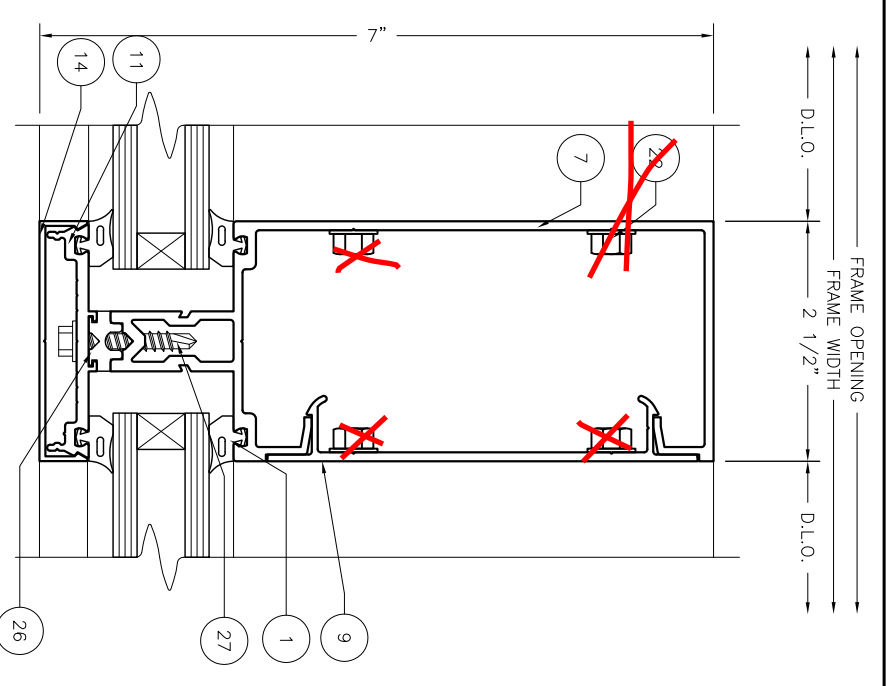
1 - VALIDATION HEAD
1:2



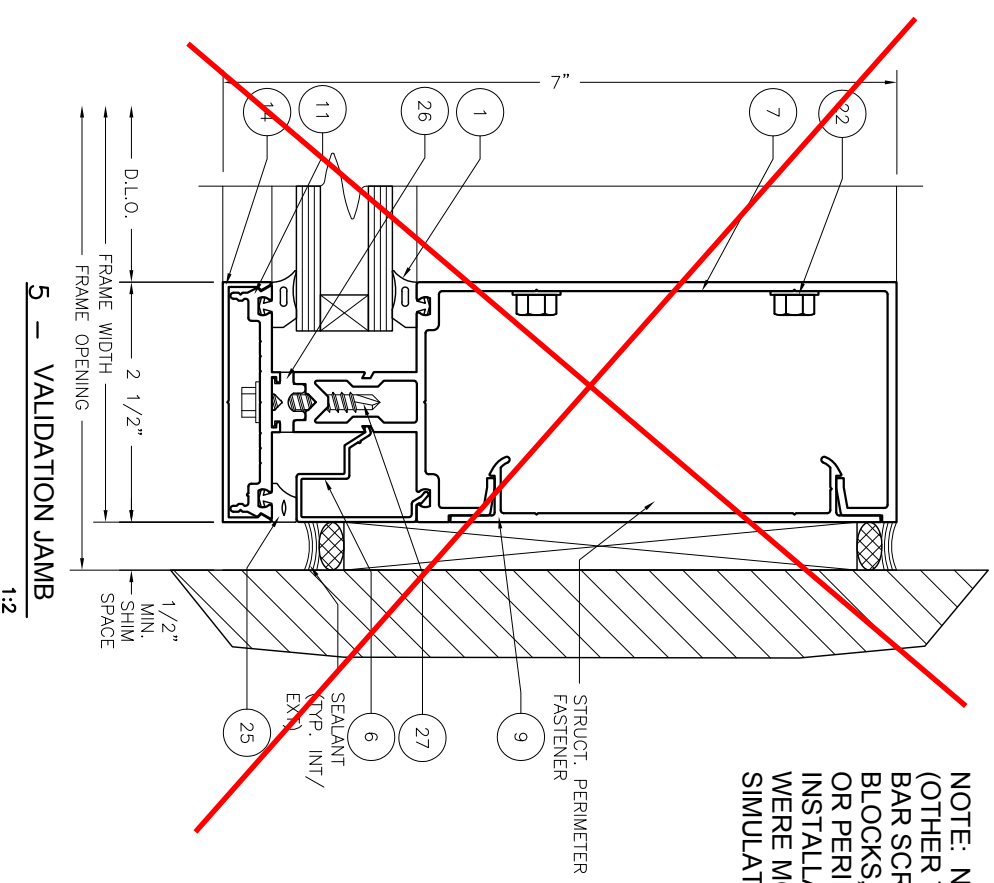
2 - STANDARD HORIZONTAL MULLION
1:2



3 - VALIDATION SILL
1:2



4 - VERTICAL MULLION
1:2



5 - VALIDATION JAMB
1:2

NOTE: NO HARDWARE (OTHER THAN PRESSURE BAR SCREWS), SETTING BLOCKS, SEALANTS, OR PERIMETER INSTALLATION MATERIALS WERE MODELED IN THE SIMULATIONS.

TURNER ENGINEERING & CONSULTING, INC.
 The information on this page, unless otherwise noted or stricken, is representative of the materials and profiles used in modeling performed for Report: CAP-052115-05 Initials: ZZ

PW251 AAMA 507
 NFRC CMAST
 SUBMITTAL DRAWINGS
 STANDARD FRAMING DETAILS


Coral
 Architectural Products
 3010 RICE MINE ROAD, TUSCALOOSA, AL 35406
 PHONE: 800-772-7737 FAX: 800-443-6261

REV	BY	DATE	DESCRIPTION

PROJECT NO. AAMA PW251	DRAWN DATE 1/16/2014
CHECKED APPROVED	SHEET 3 OF 5

BILL OF MATERIALS

ITEM NO.	P/N	DESCRIPTION	DIMENSIONS	MATERIAL	MANUFACTURER	NOTES
1	NG10	GLAZING GASKET	.561 x .350	EPDM	VARIES	USED ON EXT. AND INT.
6	PW213	POCKET FILLER	1.375 X 0.999	6063-T6 ALUMINUM	CORAL	
7	PW150	VERTICAL MULLION/JAMB	2.50 X 6.281	6063-T6 ALUMINUM	CORAL	
8	PW155	HORIZONTAL MULLION	6.168 X 2.390	6063-T6 ALUMINUM	CORAL	
9	PW202	VERTICAL FILLER	4.484 X .681	6063-T6 ALUMINUM	CORAL	
11	PW204	PRESSURE BAR	2.427 X .433	6063-T6 ALUMINUM	CORAL	
12	PW152	HEAD/SILL JAMB	2.50 X 4.5	6063-T6 ALUMINUM	CORAL	
13	PW203	SILL/HEAD/HORIZONTAL COVER	2.50 X 4.460	6063-T6 ALUMINUM	CORAL	
14	PW205	PRESSURE PLATE COVER	2.50 X .500	6063-T6 ALUMINUM	CORAL	
25	NG11	GASKET	.340 x .403	EPDM	VARIES	
26	NG12	ISOLATER GASKET	.625 x .35	EPDM	VARIES	
27	AS32	SCREW	#12 x 1-1/4"	ZINC PLATED STEEL	VARIES	



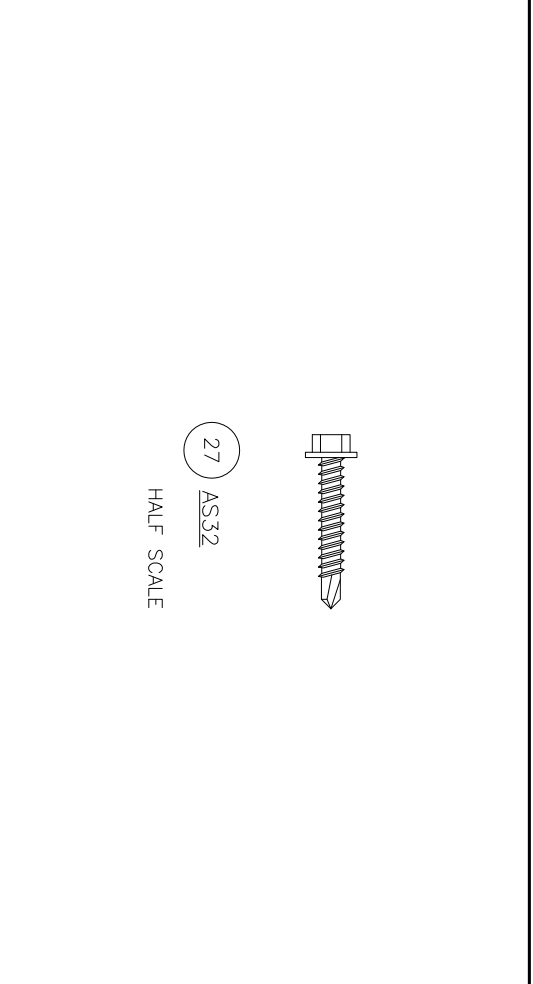
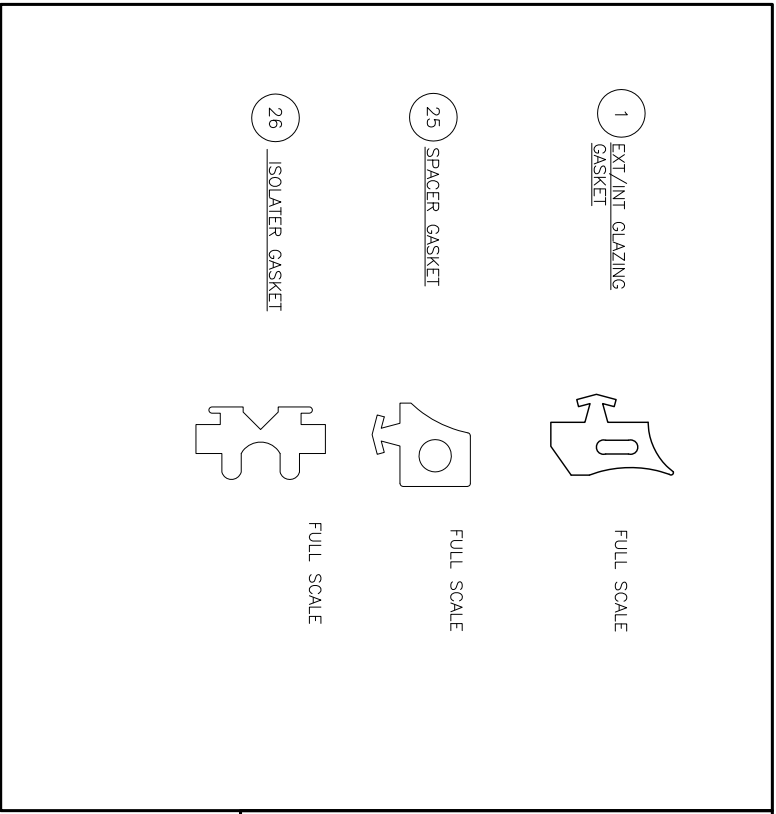
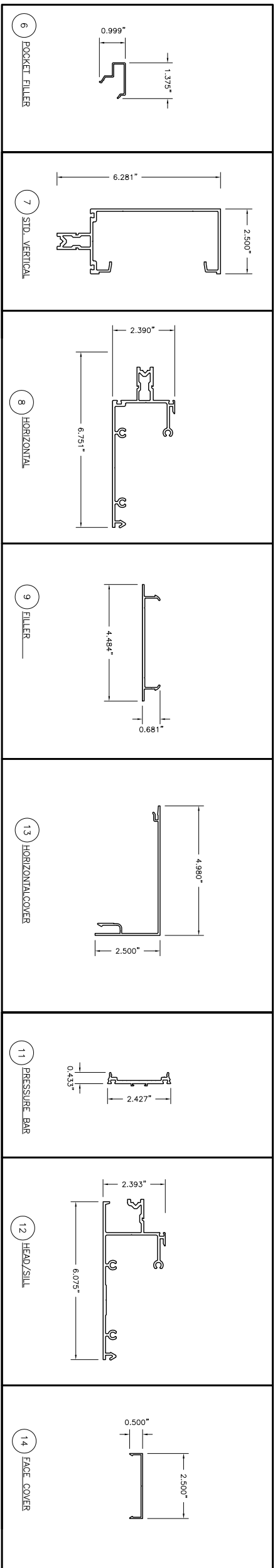
The information on this page, unless otherwise noted or stricken, is representative of the materials and profiles used in modeling performed for Report: **CAP-052115-05** Initials: *ZZ*

PW251 AAMA 507
NFRC CMAST
SUBMITTAL DRAWINGS
 BILL OF MATERIALS



REV	BY	DATE	DESCRIPTION

PROJECT NO. AAMA PW251	
DRAWN	DATE
	1/16/2014
CHECKED	APPROVED
SHEET	
4 OF 5	



TURNER
ENGINEERING & CONSULTING, INC.

The information on this page, unless otherwise noted or stricken, is representative of the materials and profiles used in modeling performed for Report: **CAP-052115-05** Initials: *ZZ*

PW251 AAMA 507
NFRG CMAST
SUBMITTAL DRAWINGS
DIE DRAWINGS

Coral
Architectural Products
3010 RICE MINE ROAD, TUSCALOOSA, AL 35406
PHONE: 800-772-7737 FAX: 800-443-6261

REV	BY	DATE	DESCRIPTION

PROJECT NO. AAMA PW251	DRAWN ---	DATE 1/16/2014
CHECKED ---	APPROVED ---	
SHEET 5 OF 5		