

PERFORMANCE TEST REPORT

Rendered to:

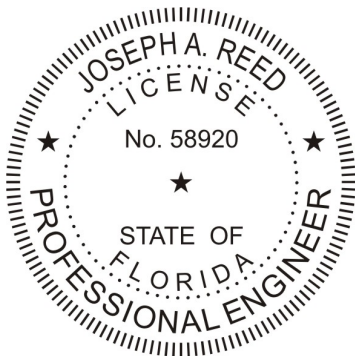
FREY-MOSS STRUCTURES, INC.

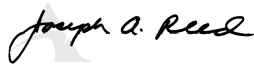
SERIES/MODEL: ArmorPanel

PRODUCT TYPE: Wall Panel

This report contains in its entirety:

Cover Page: 1 page
Report Body: 6 pages
Sketch: 1 page
Drawings: 2 pages




Digitally Signed by: Joseph A. Reed

Date: 2006.08.04 11:32:42 -04'00'

Report No.: 63811.01-109-18
Test Dates: 06/21/06
Through: 08/04/06
Report Date: 08/04/06
Expiration Date: 08/04/10

PERFORMANCE TEST REPORT

Rendered to:

FREY-MOSS STRUCTURES, INC.
1801 Rockdale Industrial Boulevard
Conyers, Georgia 30012

Report No.: 63811.01-109-18
Test Dates: 06/21/06
Through: 08/04/06
Report Date: 08/04/06
Expiration Date: 08/04/10

Project Summary: Architectural Testing, Inc. (ATI) was contracted by Frey-Moss Structures, Inc. to perform testing per ASTM E 330-02 on two Ribbed Wall Panels. The samples tested met the performance requirements for a +30/-45 psf *Design Pressure* rating. Test specimen description and results are reported herein.

Test Procedure: The test specimens were evaluated in accordance with the following Florida Building Code Protocols:

ASTM E 330-02, Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.

Drawing Reference: The following drawings have been checked by ATI, and are representative of the samples tested:

Frey-Moss Structures; *Wall Panel with Ribs In*, 3/15/2006.

Frey-Moss Structures; *Wall Panel with Ribs Out*, 3/15/2006.

Test Specimen Description:

Test Specimen #1:

Series/Model: Wall Panel with Ribs In

Overall Size: 13' 4" wide by 11' 10-1/2" high

Test Specimen #2:

Series/Model: Wall Panel with Ribs Out

Overall Size: 13' 4" wide by 11' 10-1/2" high

Test Specimen Description: (Continued)

The following descriptions apply to all specimens.

Panel Construction: The wall panel assembly was constructed of 18 gauge roll-formed steel. Each wall panel assembly incorporated ten (10) individual panels with overall dimensions of 1' 4" wide by 3" deep (Reference panel profile on wall panel assembly drawings). The ribs of each panel were overlapped and were secured with #10 x 3/4" self-drilling sheet metal screws located 18" on center through each rib.

The base of the wall panel assembly utilized a full length 20 gauge steel bottom channel with overall dimensions of 3" wide by 6" tall. A "Z" shaped 20 gauge steel deck closure was then placed over the bottom channel. The deck closure was secured to the panel with two rows of #10 x 1/2" self-drilling sheet metal screws located 16" on center through the exterior face of the panels. The bottom row of screws through the deck closure also went through the bottom channel. A full length, "U" shaped 20 gauge steel top cap was placed over the top of the panels and was secured to the panels with #10 x 1/2" self-drilling sheet metal screws located 16" on center through the interior and exterior face of the panel assembly system.

Frame Construction: A steel frame was utilized to hold the wall panel assembly. The frame consisted of a C12 x 20.7 steel bottom channel and a C5 x 6.7 steel top channel with 3" by 3" by 14 gauge thick steel tube for the side columns. The side columns were utilized to join the top and bottom channels and were spaced 13' 7" on center. The top and bottom channels were spaced with 11' 0-1/2" maximum between the channels. The side columns were secured to the top and bottom channels with two 3" by 2" by 3/16" thick by 3" long steel "L" brackets per end. Each "L" bracket was welded to the side columns with 1" long by 3/16" fillet welds and was secured to the top and bottom channel with one 5/8" diameter A307 bolt.

Specimen #1 Installation: The Ribs In wall panel assembly was set in between the side columns and was secured to the side columns with #10 x 3/4" self-drilling sheet metal screws located 16" on center. The wall panel assembly was secured to the top frame channel with two #10 x 3/4" self-drilling sheet metal screws located at each rib. The wall panel bottom channel was secured to the bottom frame channel with two #10 x 3/4" self-drilling sheet metal screws located 16" on center. The wall panel assembly was secured to the bottom frame channel with two #10 x 3/4" self-drilling sheet metal screws located at each rib and through the wall panel bottom channel.

Specimen #2 Installation: The Ribs Out wall panel assembly was set in between the side columns and was secured to the side columns with #10 x 3/4" self-drilling sheet metal screws located 16" on center. The wall panel assembly was secured to the top and bottom frame channels with #10 x 3/4" located 8" on center through each panel. At the base of the wall panel assembly, the installation screws also penetrated the wall panel bottom channel.

Test Results: The following results have been recorded:

ASTM E 330-02, Static Air Pressure Tests

Test Unit #1

Design Pressure: +30/-40 psf

Title of Test	Results		
	Indicator Readings (inch)		
	#1	#2	#3
Design Pressure (+30 psf)			
Maximum Deflection	0.21	0.50	0.34
Permanent Set	0.10	0.13	0.10
Design Pressure (-40 psf)			
Maximum Deflection	0.34	1.25	0.12
Permanent Set	0.15	0.25	0.01
Test Pressure (+45 psf)			
Maximum Deflection	0.32	0.87	0.51
Permanent Set	0.12	0.13	0.13
Test Pressure (-60 psf)			
Maximum Deflection	0.37	2.12	0.10
Permanent Set	0.15	0.36	0.08

Note: See ATI Sketch #1 for indicator locations.

Test Results: (Continued)

ASTM E 330-02, Static Air Pressure Tests

Test Unit #2

Design Pressure: +30/-40 psf

Title of Test	Results		
	Indicator Readings (inch)		
	#1	#2	#3
Design Pressure (+30 psf)			
Maximum Deflection	0.23	0.75	0.18
Permanent Set	0.05	<0.01	0.04
Design Pressure (-40 psf)			
Maximum Deflection	0.48	1.25	0.46
Permanent Set	0.04	0.12	0.05
Test Pressure (+45 psf)			
Maximum Deflection	0.26	1.00	0.31
Permanent Set	0.07	0.25	0.04
Test Pressure (-60 psf)			
Maximum Deflection	0.75	4.00	0.48
Permanent Set	0.12	0.12	0.10

Note: See ATI Sketch #1 for indicator locations.

Test Equipment:

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device

Deflection Measuring Device: 1" dial indicators and steel rule

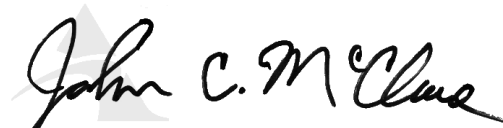
Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

List of Official Observers:

<u>Name</u>	<u>Company</u>
Michael D. Stremmel, P.E.	Architectural Testing, Inc.
John C. McClane	Architectural Testing, Inc.

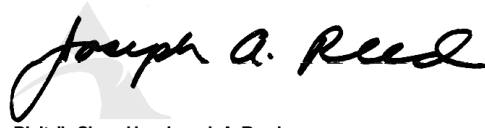
Detailed drawings, representative samples of the test specimen and a copy of this report will be retained by ATI for a period of four years from the original test date. This report is the exclusive property of the client so named herein and is applicable to the sample tested. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory. This report may not be reproduced, except in full, without the approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.



Digitally Signed by: John C. McClane

John C. McClane
Supervisor- Product Testing



Digitally Signed by: Joseph A. Reed

Joseph A. Reed, P.E.
Director - Engineering and Product Testing

MDS/JCM:vlm

Attachments (pages):

- Appendix-A: Sketch (1)
- Appendix-B: Drawings (2)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	08/04/06	N/A	Original report issue

Appendix A

Sketch

REV	DATE	DESCRIPTION	BY

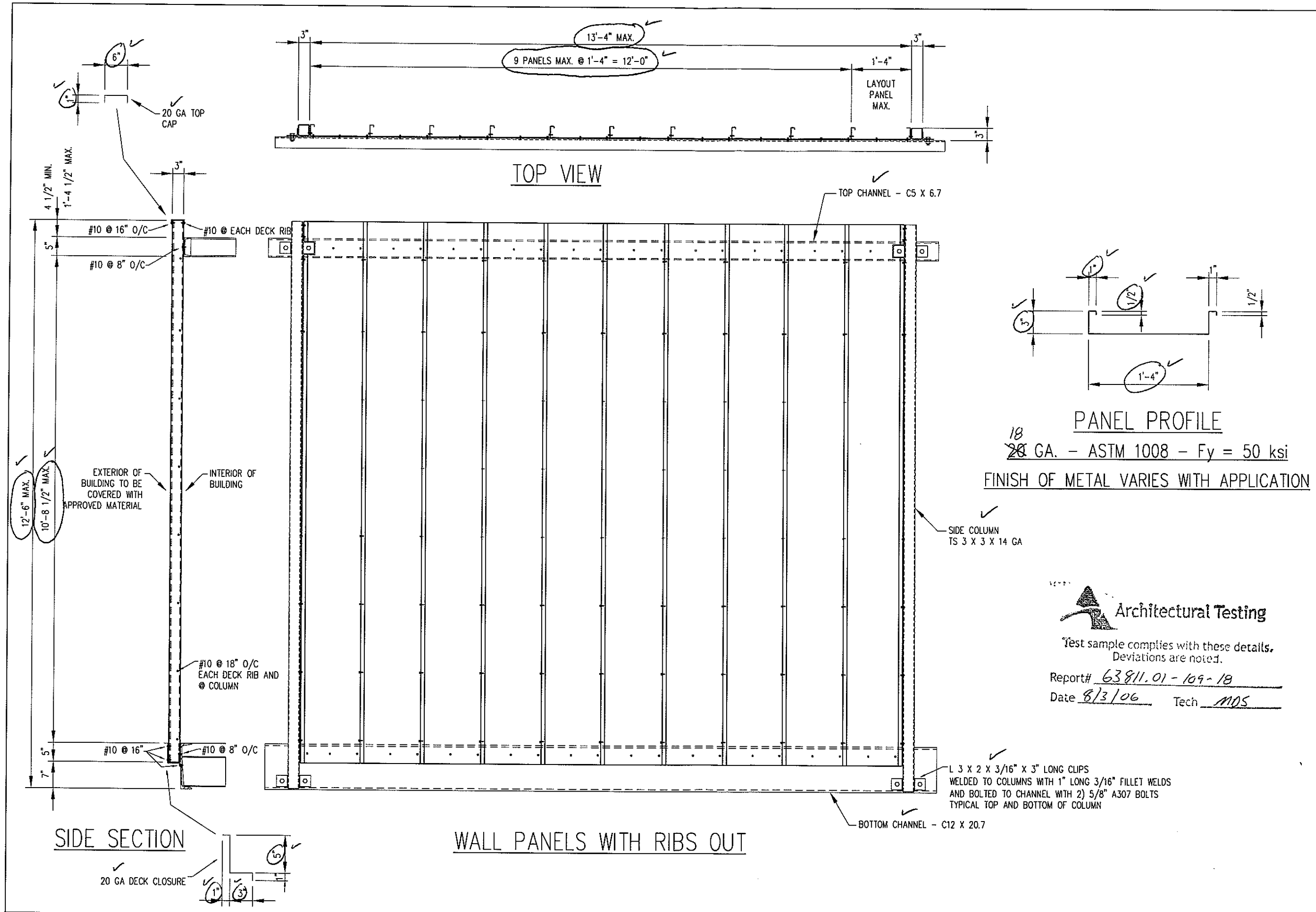
				#1	⊗				
				#2	⊗				
				#3	⊗				

⊗ - DENOTES INDICATOR LOCATIONS

Appendix B

Drawings

C:\Frey-Moss Stuff\Florida Submittal Drawings and Calc\Wall Panels Ribs Out.dwg, 3/16/2006 5:19:53 AM, Andy_R



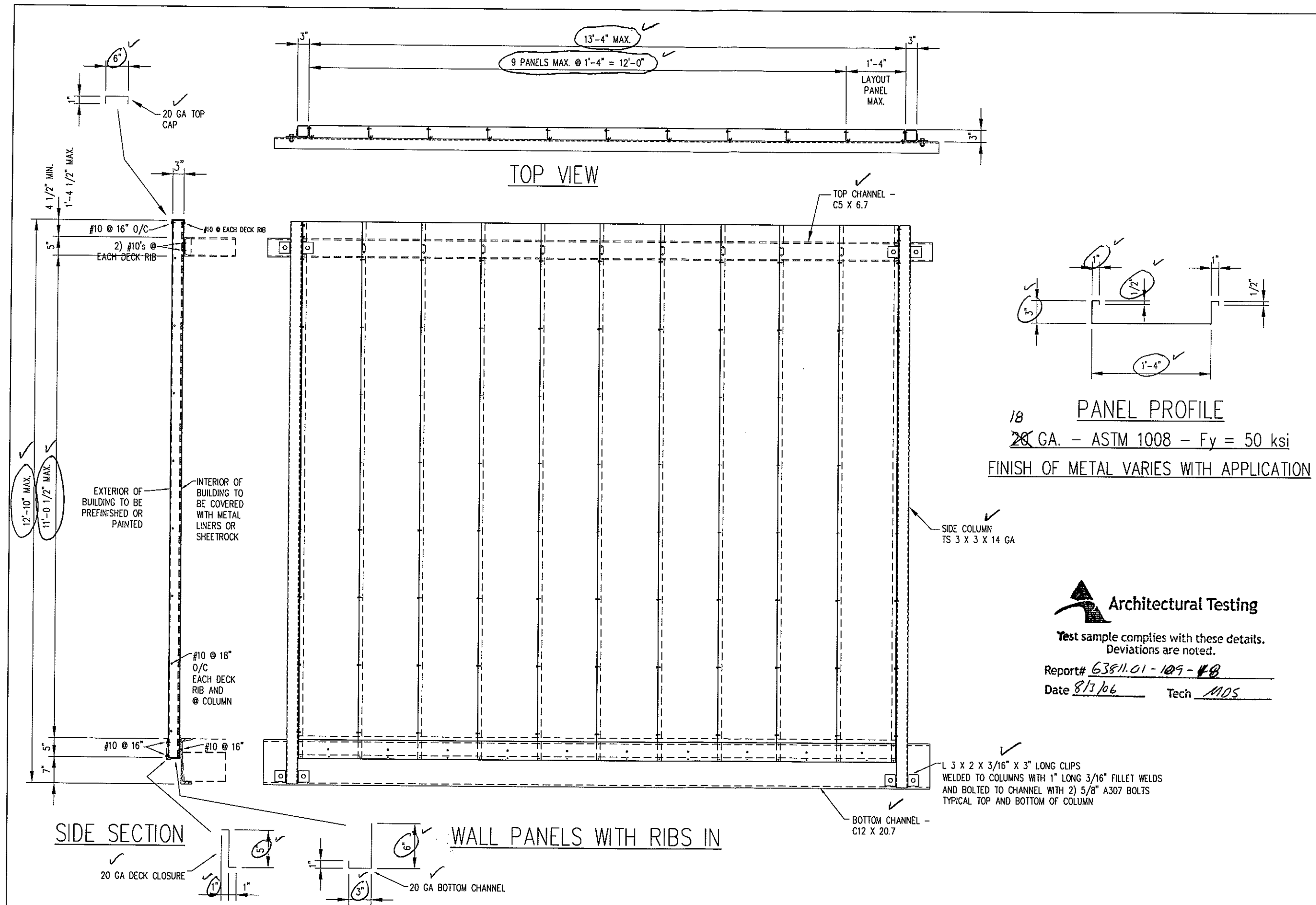
FREY-MOSS STRUCTURES
FLORIDA PRODUCT APPROVAL
WALL PANELS WITH RIBS OUT

JOB NO: FLORIDA

DATE: 3-15-06

DWG BY: A.R.

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FREY-MOSS STRUCTURES
FLORIDA PRODUCT APPROVAL
WALL PANELS WITH RIBS IN

JOB NO: FLORIDA

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DWG BY: A.R.

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