Intertek | Architectural Testing

TEST REPORT

Report No.: G1418.01-301-44

Rendered to:

SKYCO SKYLIGHTS
Costa Mesa, California

PRODUCT TYPE: Fall Protection Security Bars
SERIES/MODEL: FSB-1A/FSB-10A/FSB-1/FSB-10

SPECIFICATION: Occupational Safety and Health Administration/U.S. Department of Labor Regulations (Standards- 29 CFR) - 1910.23(e)(8).

California Occupational Safety and Health Administration, Title 8, Chapter 4, Subchapter 7, Section 3212(e)(2)

Test Date:	07/25/16
Report Date:	08/22/16
Test Record Retention Date:	07/25/20

1.0 Report Issued To: Skyco Skylights
2995 Airway Avenue
Costa Mesa, California 92625

2.0 Test Laboratory: Architectural Testing, Inc., an Intertek company ("Intertek-ATI")
25800 Commercentre Dr.
Lake Forest, California 92630
949-460-9600

3.0 Project Summary:

3.1 Product Type: Fall Protection Security Bars

3.2 Series/Model: FSB-1A/FSB-10A/FSB-1/FSB-10

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods.

3.4 Test Date: 07/25/16

3.5 Test Record Retention End Date: All test records for this report will be retained until July 25, 2020.

3.6 Test Location: Intertek-ATI test facility in Lake Forest, California.

3.7 Test Specimen Source: The test specimens were provided by the client. Representative samples of the test specimens will be retained by Intertek-ATI for a minimum of four years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimens reported herein. Test specimen construction was verified by Intertek-ATI per the drawings located in Appendix B. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

Name	Company
Bob Sampson	RCS Consulting
Patrick Walsh	Skyco Skylights
Charles Presley	Intertek-ATI
Jarod Hardman	Intertek-ATI

4.0 Test Specifications:

Test Specimen #1-2:
Occupational Safety and Health Administration/U.S. Department of Labor Regulations (Standards- 29 CFR) - 1910.23(e)(8).

A 200 lbf weight, fabricated from a bag filled with sand, was placed on the center of the security bars for a minimum of 60 seconds. The bag was removed and the test unit was inspected for any signs of damage or failure. The bag was then dropped from 4' height above the security bars, permanent visible damage was noted.

California Occupational Safety and Health Administration, Title 8, Chapter 4, Subchapter 7, Section 3212(e)(2).

A 400 lbf weight, fabricated from a bag filled with sand, was placed on the center of the security bars. The bag was removed and the test unit was inspected for any signs of damage or failure.

Test Specimen #3-4:
Occupational Safety and Health Administration/U.S. Department of Labor Regulations (Standards- 29 CFR) - 1910.23(e)(8).

A 200 lbf weight, fabricated from a bag filled with sand, was placed on the center of the security bars for a minimum of 60 seconds. The bag was removed and the test unit was inspected for any signs of damage or failure. The bag was then dropped from 4' height above the security bars, permanent visible damage was noted.

California Occupational Safety and Health Administration, Title 8, Chapter 4, Subchapter 7, Section 3212(e)(2).

A 400 lbf weight, fabricated from a bag filled with sand, was placed on the center of the security bars. The bag was removed and the test unit was inspected for any signs of damage or failure.

5.0 Test Specimen Description:

5.1 Product Sizes:

Test Specimen #1-4:

Overall Area: 31.58 ft^2	**Width (inches)**	**Height (inches)**
Overall size	50-1/4	90-1/2
Curb size	50-3/8	90-5/8

Test Specimen #1	FSB-1A
Test Specimen #2	FSB-1
Test Specimen #3	FSB-10A
Test Specimen #4	FSB-10

5.2 Frame Construction:

Test Specimen #1 and #3:

Frame Member	**Material**	**Description**
Curb ledge	Aluminum	1-1/2" x 1-1/2" angle, 1/8" wall.
Bars	Aluminum	Solid 1/2" diameter, unfinished.

	Joinery Type	**Detail**
Specimen #1 rod joints	Flush	Welded to curb ledge at 5" on center spacing.
Specimen #3 rod joints	Flush	Welded to curb ledge at 10" on center spacing.

Test Specimen #2 and #4:

Frame Member	**Material**	**Description**
Curb ledge	Steel	1-1/2" x 1-1/2" angle, 1/8" wall.
Bars	Steel	Solid 1/2" diameter, painted.

	Joinery Type	**Detail**
Specimen #2 rod joints	Flush	Welded to curb ledge at 5" on center spacing.
Specimen #4 rod joints	Flush	Welded to curb ledge at 10" on center spacing.

5.0 Test Specimen Description: (Continued)

5.3 Weatherstripping: No weatherstripping was utilized.

5.4 Glazing: No glazing was utilized.

6.0 Installation:

The specimen was installed into a Pine wood buck. The rough opening allowed for a 1/8" shim space. The exterior perimeter of the skylight was dry fit to the curb.

Specimen #1:

Location	Anchor Description	Anchor Location
Into cap	#10 x 1-1/2" Phillips flat head screws	3" from each end and 22" on center spacing along long sides.

Specimen #2-4:

Location	Anchor Description	Anchor Location
Into cap	#10 x 1-1/2" Phillips flat head screws	3" from each end and 11" on center spacing along long sides.

7.0 Test Results: The results are tabulated as follows:

7.1 CalOSHA Safety Test

Test Specimen #1:

Test	Load Location	Results
400 lbf	Center of bars	No visible damage

Test Specimen #2:

Test	Results	Maximum Allowed
400 lbf	Center of bars	No visible damage

Test Specimen #3:

Test	Results	Maximum Allowed
400 lbf	Center of bars	No visible damage

Test Specimen #4:

Test	Results	Maximum Allowed
400 lbf	Center of bars	No visible damage

***Note**: The 400 lbf weight was gently applied perpendicular to the center of each bars. After 60 seconds of rest time, there was no visible damage to either set of bars.*

7.0 Test Results: (Continued)

7.2 OSHA Safety Drop Test

Test Specimen #1:

Test Method	Load Location	Results
400 lbf at rest	Center of bars	No visible damage
800 lbf-ft (4' drop height)	Center of bars	Note #1

***Note #1**: At the 48' drop height, bars bent toward the interior of the assembly but maintained their construction and supported the load.*

Test Specimen #2:

Test Method	Load Location	Results
400 lbf at rest	Center of bars	No visible damage
800 lbf-ft (4' drop height)	Center of bars	See Note #2

***Note #2**: At the 48' drop height, bars bent toward the interior of the assembly but maintained their construction and supported the load.*

Test Specimen #3:

Test Method	Load Location	Results
400 lbf at rest	Center of bars	No visible damage
800 lbf-ft (4' drop height)	Center of bars	See Note #3

***Note #3**: At the 48' drop height, bars bent toward the interior of the assembly but maintained their construction and supported the load.*

Test Specimen #4:

Test Method	Load Location	Results
400 lbf at rest	Center of bars	No visible damage
800 lbf-ft (4' drop height)	Center of bars	See Note #4

***Note #4**: At the 48' drop height, bars bent toward the interior of the assembly but maintained their construction and supported the load.*

Intertek-ATI will service this report for the entire test record retention period. Test records such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimens tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For ARCHITECTURAL TESTING, Inc.

Digitally Signed by: Charles Presley II

Charles Presley
Technician

Digitally Signed by: Jarod Hardman

Jarod S. Hardman
Laboratory Manager

JSH:ss

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Photographs (4)
Appendix-B: Drawings (4)

Appendix A

Photographs

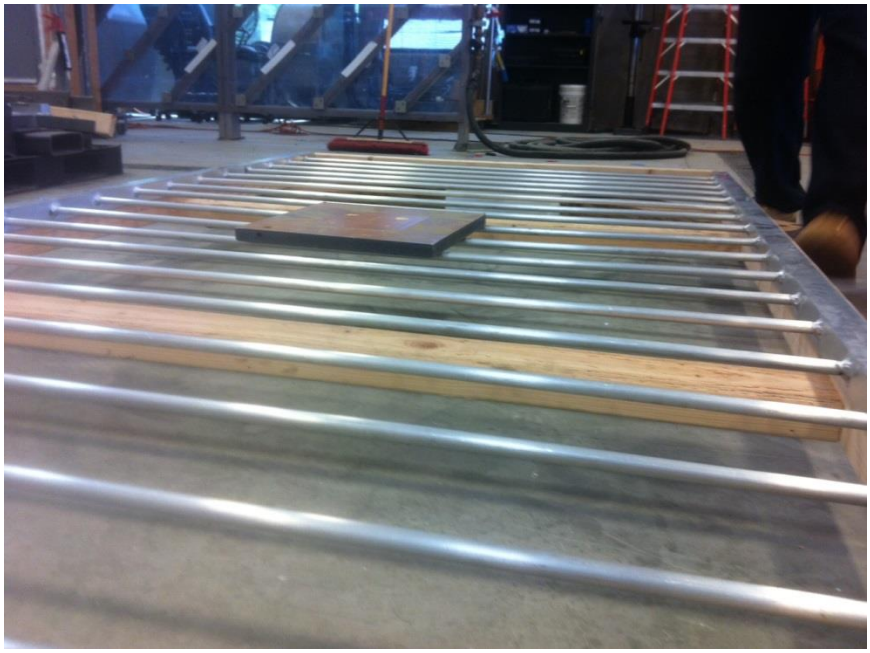


Photo No. 1
Specimen #1 after 200 lb. static load

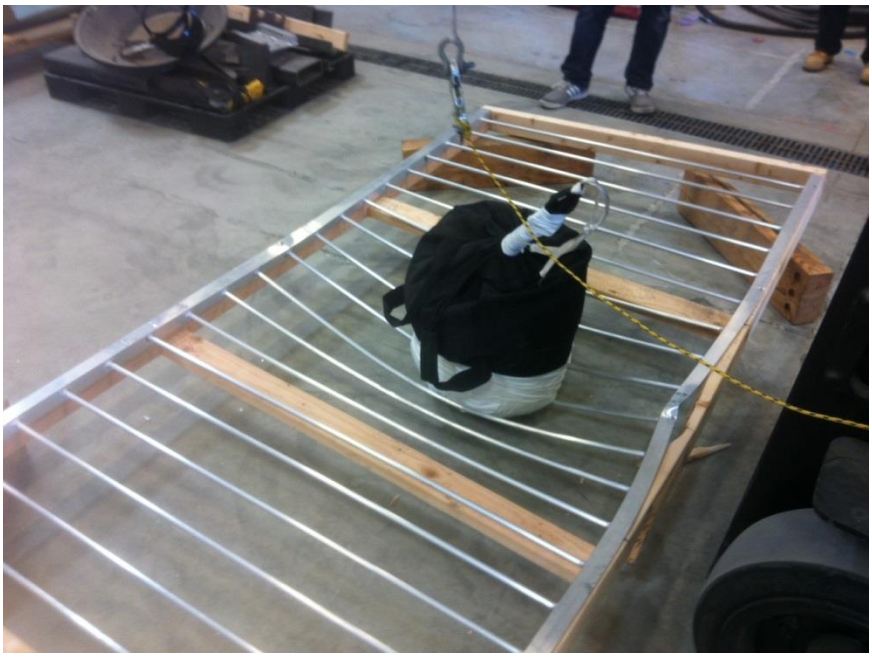


Photo No. 2
Specimen #1 after 200 lb. dynamic impact from 48"

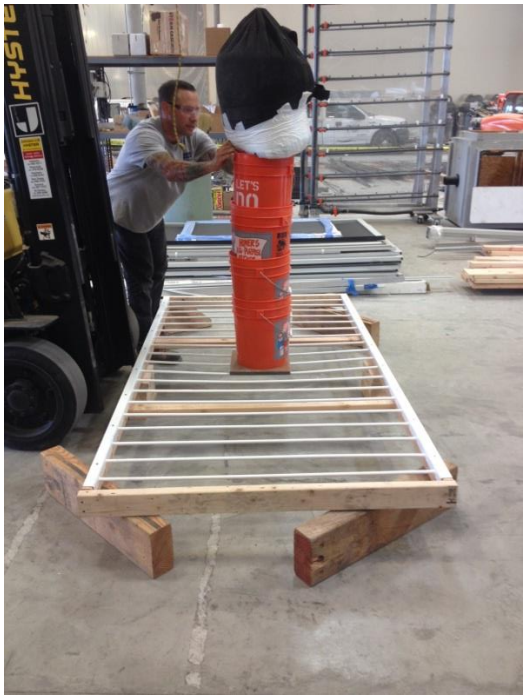


Photo No. 3
Test Specimen #2 during 200 lb. static load

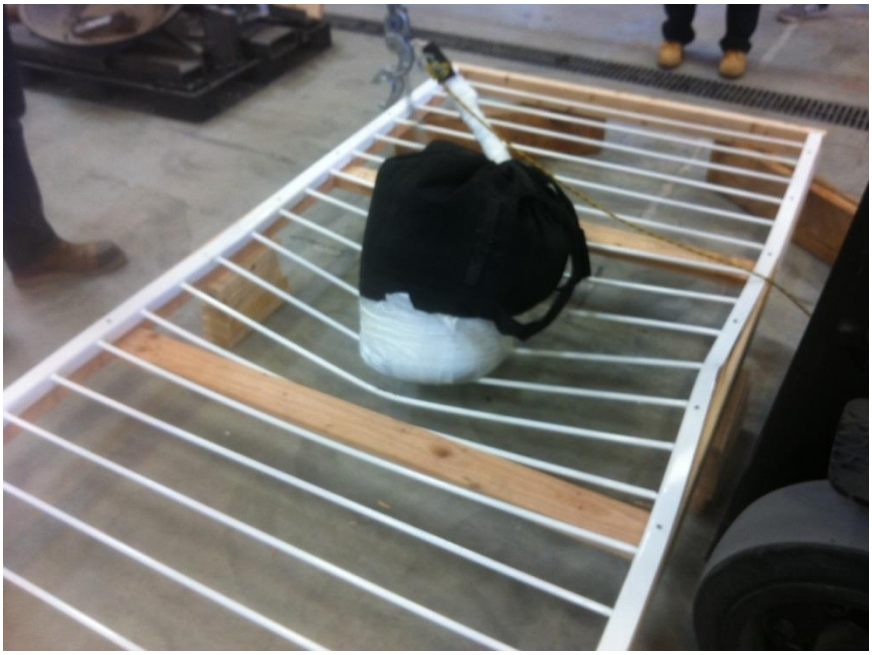


Photo No. 4
Test Specimen #2 after 200 lb. dynamic impact from 48"

Photo No. 5
Test Specimen #3 during 200 lb. static test

Photo No. 6
Test Specimen #3 after 200 lb. dynamic impact from 48"

Photo No. 7
Test Specimen #4 after 200 lb. static test

Photo No. 8
Test Specimen #4 after 200 lb. dynamic impact from 48"

Appendix B

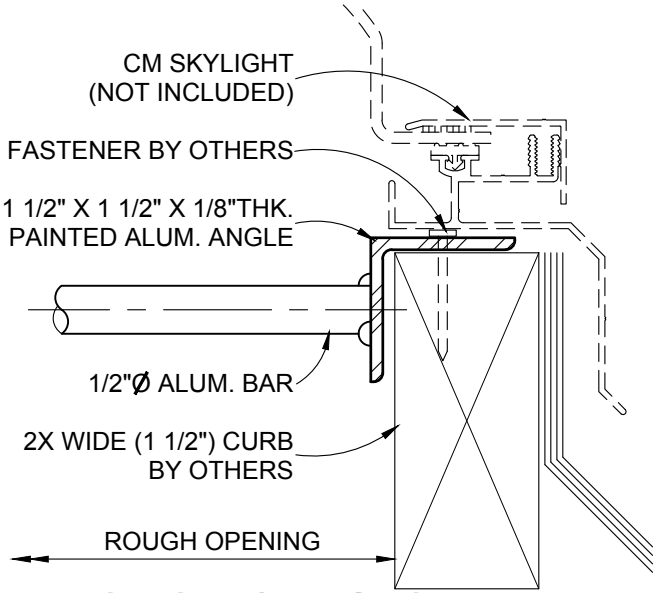
Drawings

SKYCO
SKYLIGHTS
949-629-4090

FINISH

○ WHITE POWDER COAT
○ OTHER: _____

MODEL	ROUGH OPENING	QTY.
SQUARE		
4848	48" x 48"	
RECTANGULAR		
4896	48" X 96"	



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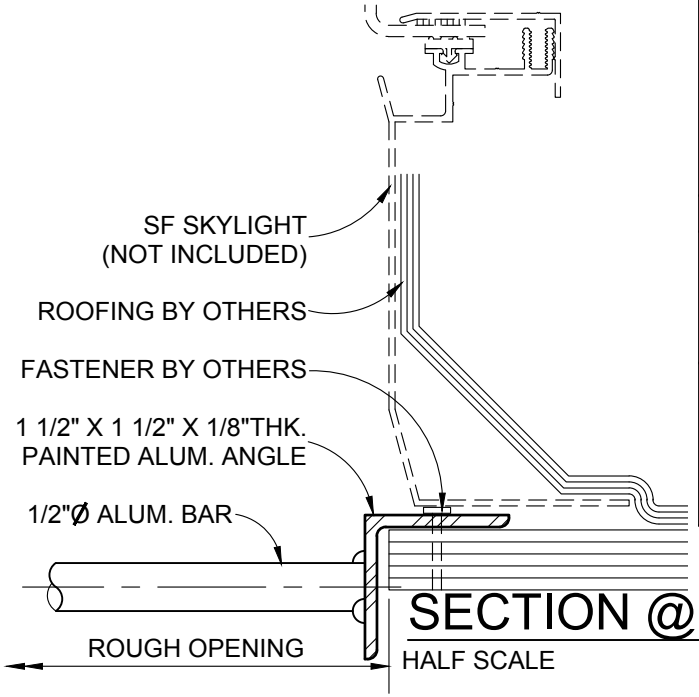

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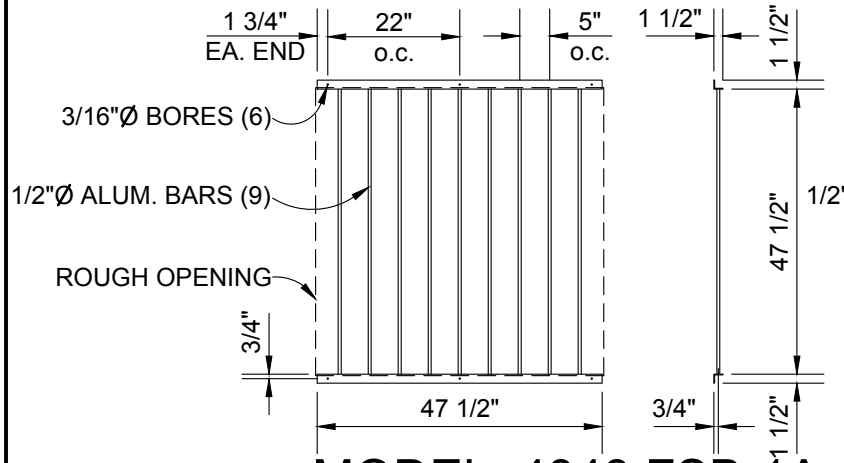
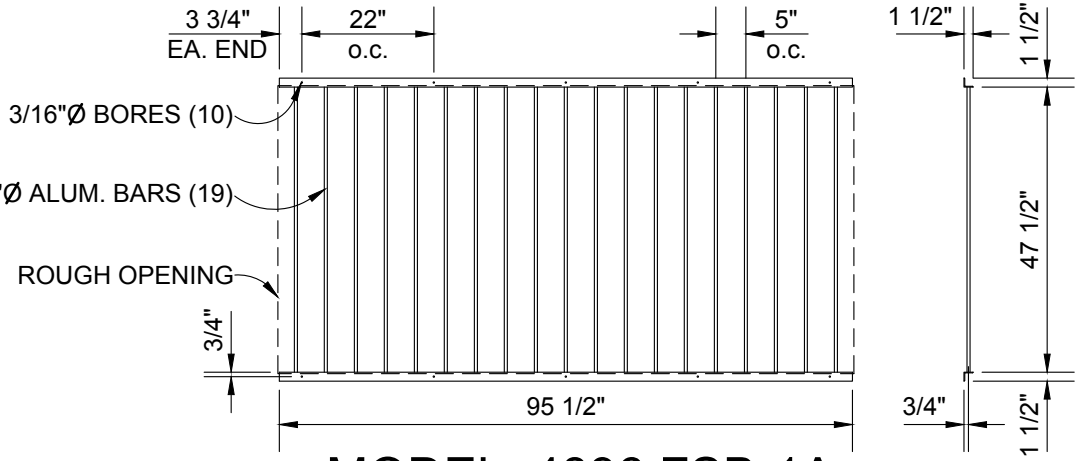


MODEL: 4848 FSB-1A

SCALE : 3/8" = 1'-0"



MODEL: 4896 FSB-1A

SCALE : 3/8" = 1'-0"

ALUMINUM FALL PROTECTION SECURITY BARS

APPROVED BY: DATE:

PROJECT:

Intertek

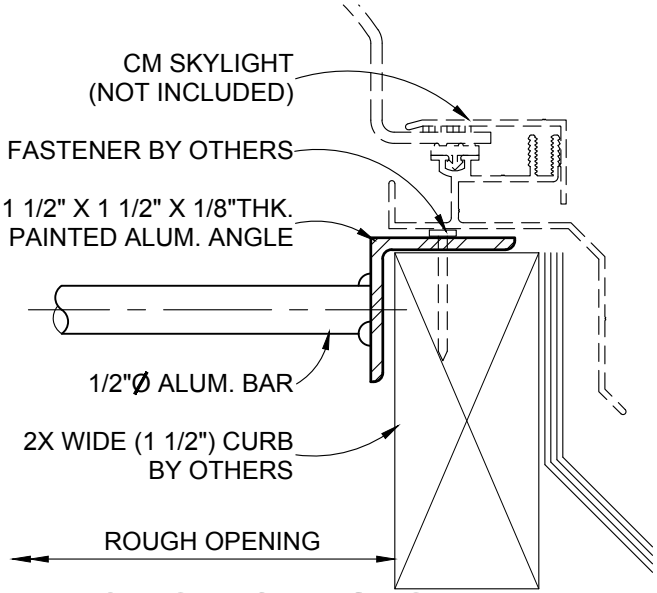
Report #: G1418-301-44
Date: 08/11/16
Verified by:

PROJECT ADDRESS:

CUSTOMER:

CUSTOMER PHONE:

REV. #	JOB #:	DATE:	DRAWING #:
			SKS-003



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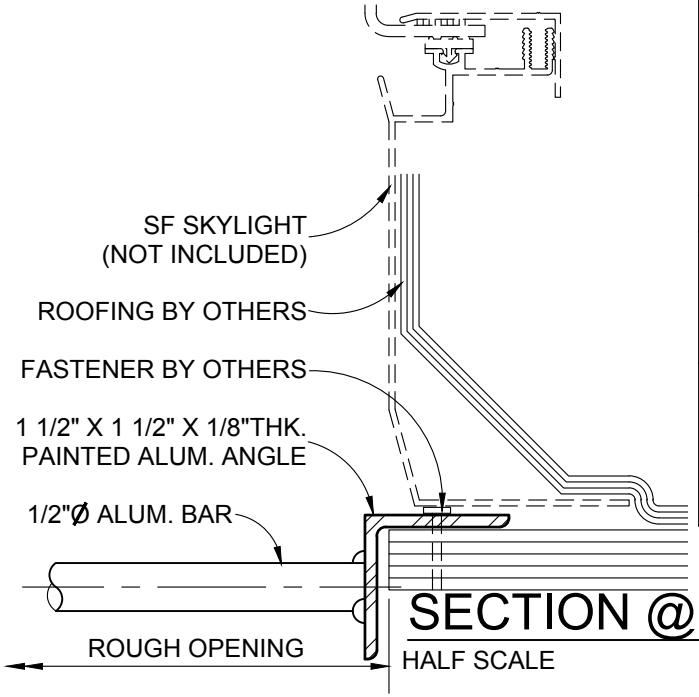

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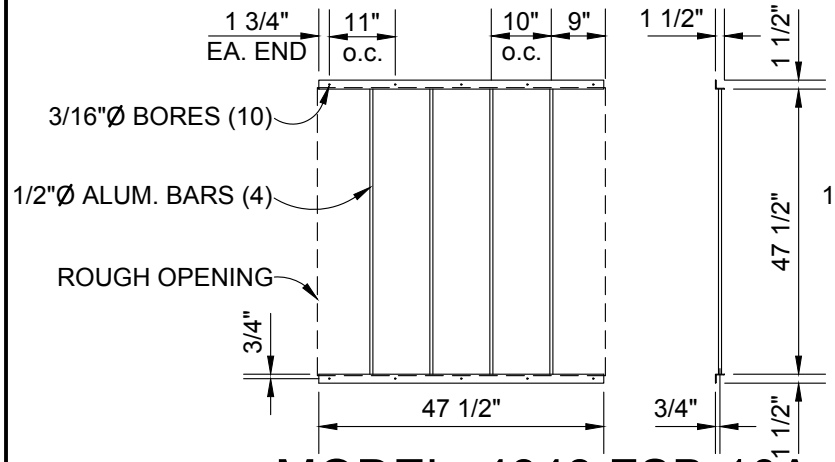

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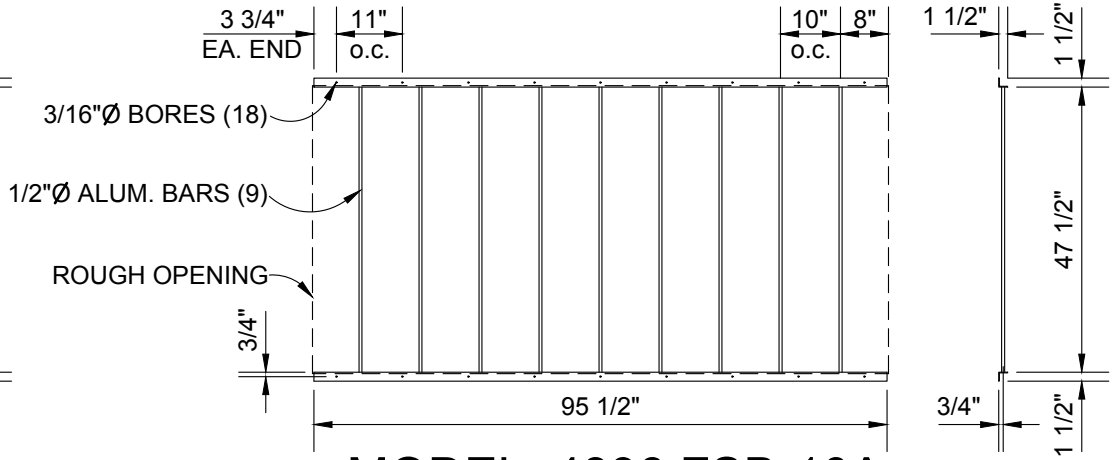


MODEL: 4896 FSB-10A

SCALE : 3/8" = 1'-0"

SKYCO
SKYLIGHTS
949-629-4090

FINISH

- ○ WHITE POWDER COAT
- ○ OTHER: _____

MODEL	ROUGH OPENING	QTY.
SQUARE		
4848	48" x 48"	
RECTANGULAR		
4896	48" X 96"	

ALUMINUM FALL PROTECTION SECURITY BARS

APPROVED BY: DATE:

PROJECT:

Intertek

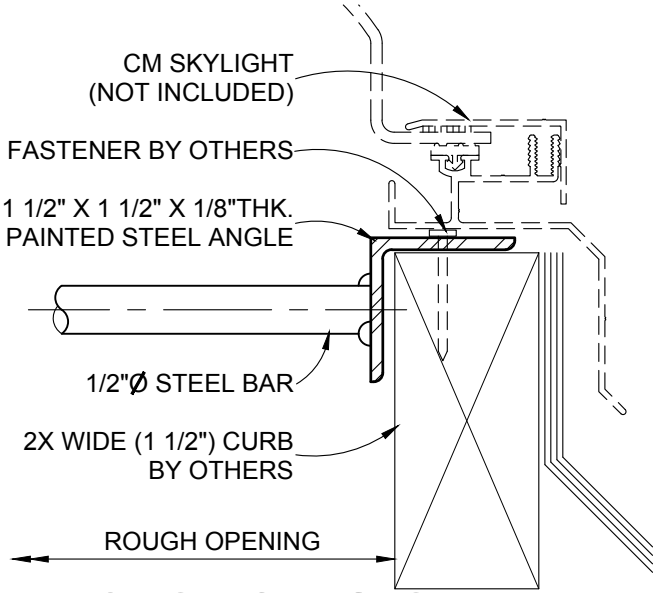
Report #: G1418-301-44
Date: 08/11/16
Verified by:

PROJECT ADDRESS:

CUSTOMER:

CUSTOMER PHONE:

REV. # | JOB #: | DATE: | DRAWING #: SKS-004



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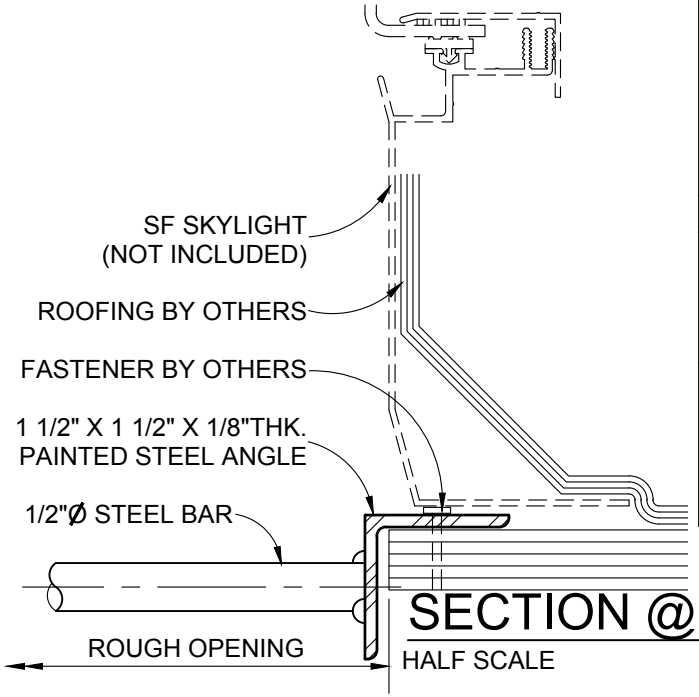
HALF SCALE



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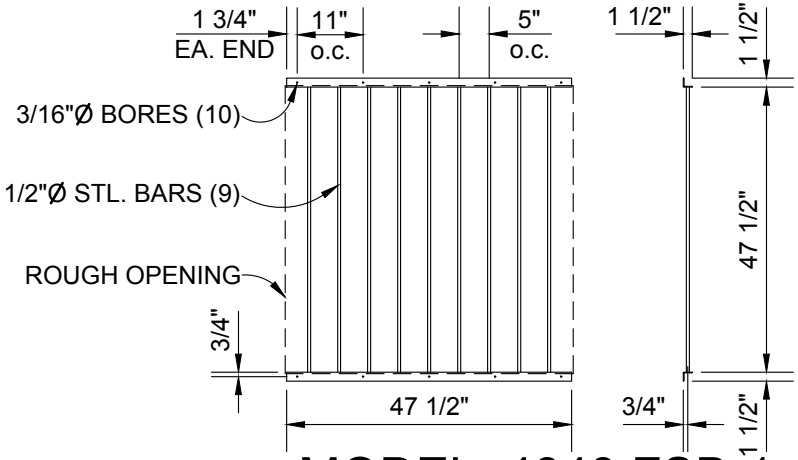

MODEL: 4848 FSB-1

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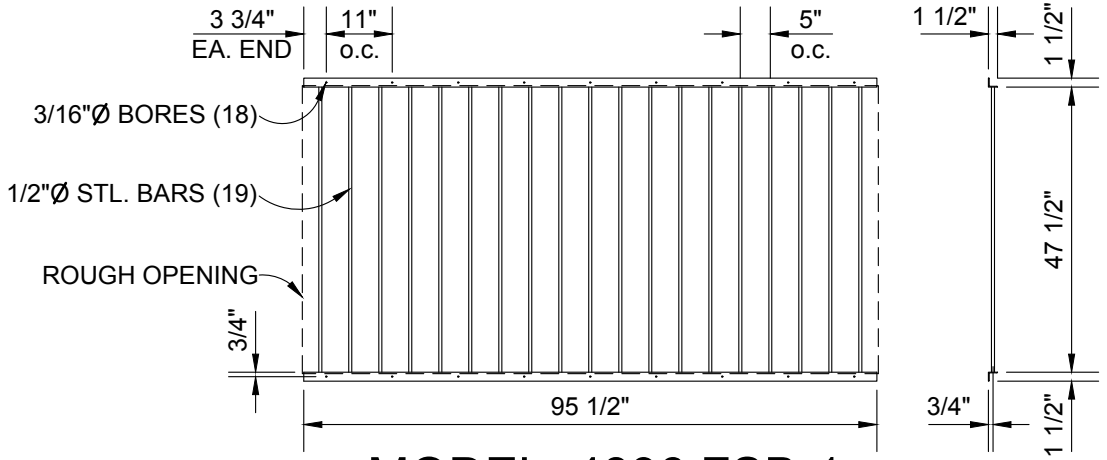


MODEL: 4896 FSB-1

SCALE : 3/8" = 1'-0"

SKYCO
SKYLIGHTS
949-629-4090

FINISH

- ○ WHITE POWDER COAT
- ○ OTHER: _____

MODEL	ROUGH OPENING	QTY.
SQUARE		
4848	48" x 48"	
RECTANGULAR		
4896	48" X 96"	

STEEL FALL PROTECTION SECURITY BARS

APPROVED BY: DATE:

PROJECT:

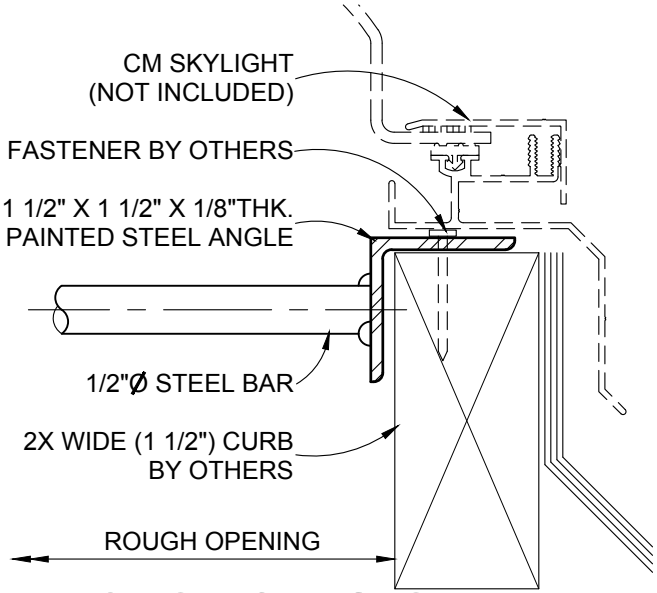
Intertek Report #: G1418-301-44
Date: 08/11/16
Verified by:

PROJECT ADDRESS:

CUSTOMER:

CUSTOMER PHONE:

REV. # | JOB #: | DATE: | DRAWING #: SKS-001



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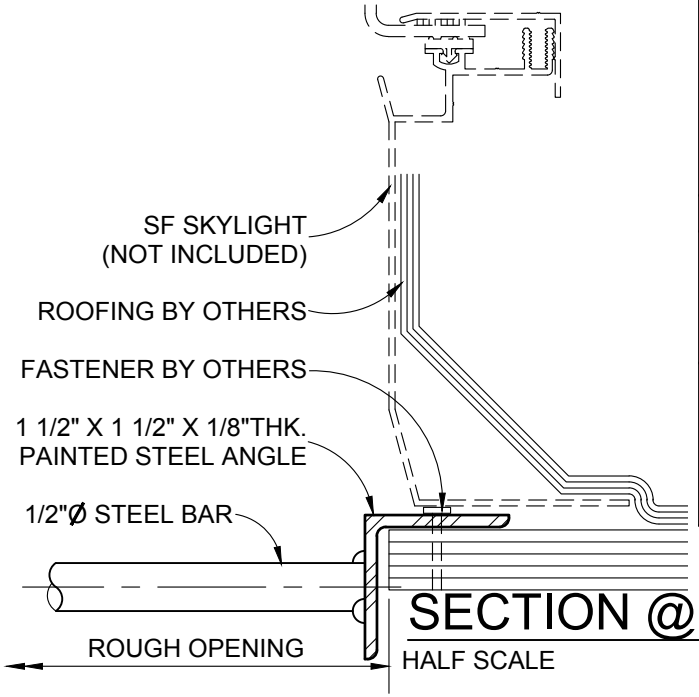

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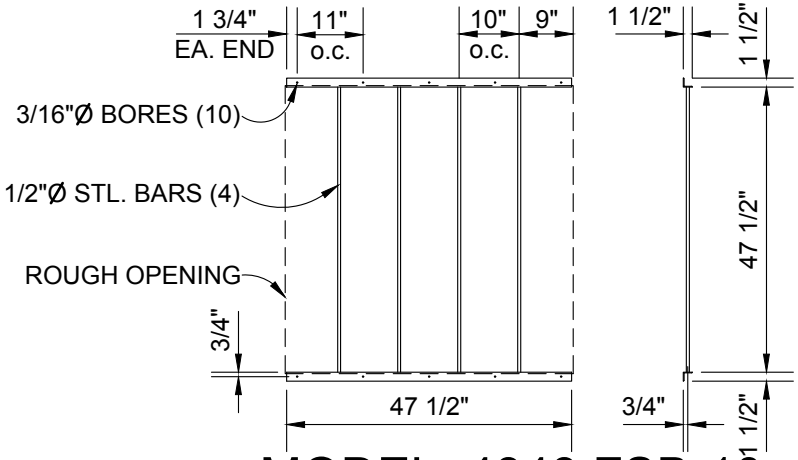

MODEL: 4848 FSB-10

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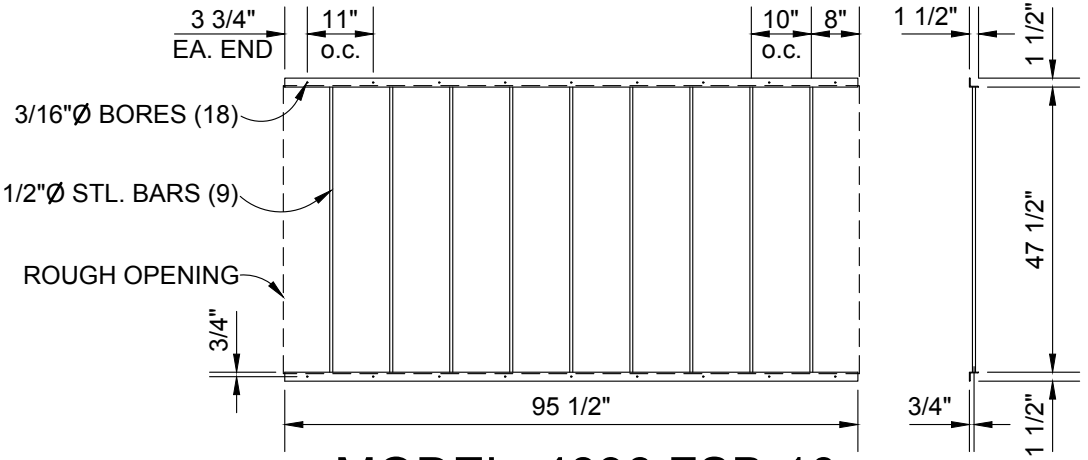

MODEL: 4896 FSB-10

SCALE : 3/8" = 1'-0"

SKYCO
SKYLIGHTS
949-629-4090

FINISH

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- ○ OTHER: _____

MODEL	ROUGH OPENING	QTY.
SQUARE		
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STEEL FALL PROTECTION SECURITY BARS

APPROVED BY: DATE:

PROJECT:

Intertek

Report #: G1418-301-44
Date: 08/11/16
Verified by:

PROJECT ADDRESS:

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CUSTOMER PHONE:

REV. #	JOB #:	DATE:	DRAWING #:
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