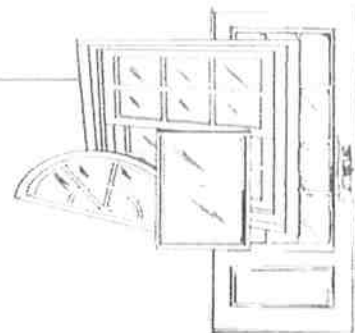


CERTIFIED TESTING LABORATORIES

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Report Number: CTLA 2017W-1
CTL Certification #: 08-0528.05
DC Not. #: 10005

Report Date: April 16, 2010
Test Date: February 25, 2010
March 3 – 18th, 2010
April 6 – 8th, 2010

STRUCTURAL PERFORMANCE TEST REPORT

Client: QMI Security Solutions
1661 Glenlake Avenue
Itasca, IL 60143

Test Specifications: TAS 201 (Large Missile), TAS 202 (Structural Loads Only) & TAS 203

Design Pressures:

<u>Test Sample # 1 (Specimen 1, 2, 3 & 4):</u>	+ 35.0 psf., - 35.0 psf.
<u>Test Sample # 2 (Specimen 5):</u>	+ 150.0 psf., - 150.0 psf.
<u>Test Sample # 7 (Specimen 6, 7 & 8):</u>	+ 100.0 psf., - 100.0 psf.
<u>Test Sample # 8 (Specimen 9, 10 & 11):</u>	+ 100.0 psf., - 100.0 psf.

Product type:

<u>Test Sample # 1 (Specimen 1, 2, 3 & 4):</u>	19'-5" x 8'-10" AL7-E Slats
<u>Test Sample # 2, 7 & 8 (Specimens 5 - 11):</u>	8'-6" x 8'-10" AL7-E Slats

Overall Size:

<u>Test Sample # 1 (Specimen 1, 2, 3 & 4):</u>	230" wide x 106" high overall (opening size)
<u>Test Sample # 2, 7 & 8 (Specimen 5 - 11):</u>	102" wide x 106" high overall (opening size)

Configuration:

All Samples/Specimens: **One (1) Operable Single Curtain consisting of seamed shutter slats.**

<u>Test Sample # 1 (Specimen 1, 2, 3 & 4):</u>	Slat length measuring from edge of slat to edge was 234.500"
<u>Test Sample # 2, 7 & 8 (Specimen 5 - 11):</u>	Slat length measuring from edge of slat to edge was 103.750"



Curtain:

All Samples/Specimens:

Curtain consisted of AL7-E slats each measuring 0.541" wide x 2.851" high with a wall thickness of 0.050" (refer to drawing # QMI-395). An aluminum finger pull slat measuring 0.538" wide x 2.851" high with a wall thickness of 0.060" (refer to drawing # QMI-410) located 32.50" c/l from bottom of curtain. An aluminum base slat was utilized at bottom of curtain and measured 0.492" wide x 2.031" high with a wall thickness of 0.050" (refer to drawing # QMI-408). Above the base slat was an aluminum lock slat that measured 0.515" wide x 2.525" high with a wall thickness of 0.040" (refer to drawing # QMI-409). Each slat was interlocked by sliding together and utilized one (1) #8 x 1.50" Phillips Pancake washer head socket screw with plastic roller utilized to interface with rails. Two (2) aluminum bars each measuring 8" long x 1" high x 0.125" thick were secured to base slat one (1) at each end utilizing two (2) 1/4" x 0.750" Phillips P.H. carriage bolts with nylon locking nuts spaced 2" apart c/l. Each aluminum bar extended beyond base slat 1.1875" into rail interface.

One (1) aluminum two piece header box assembly consisted of the following, main box fastened to end cap with four (4) #8 x 1/2" pan head self drilling screw and cover box was fastened to end cap with three (3) #8 x 1/2" pan head self drilling screws. One 2 3/4" steel shaft inside header box with 1/2" x 1" long metallic pin at left side sliding into a 4" x 4" metallic plate with groove at end cap. One 5/8" x 1 3/16" long metallic pin at right side of shaft sliding into operating assembly with crank handle. The header box was inserted in top of side rails with a 2 1/2" long aluminum stub at each end cap. Aluminum roller clip was fastened to top of guide utilizing two (2) #8-32 x 0.4375" SS machine screws with flat washer #8 Stainless 0.4375" OD .031" thick with a nylon roller secured to roller clip with Allen head.

Guides:

Test Sample # 1 (Specimens 1 – 4):

One (1) extruded aluminum spring stop snap cover retain rail measured 3.400" wide by 1.090" high overall was located in left jamb (refer to drawing # QMI-487) and one (1) extruded aluminum 2 piece spring stop retain rail consisting of an inner half measuring 3.500" wide x 1.090" high (refer to drawing # QMI-488) and an outer half measuring 3.500" wide x 1.002" high located in right jamb (refer to drawing # QMI-489). The 2 piece rail was secured together utilizing #8-18 x 0.750" Phillips PH SDS 410 S.S. screw (as stated by manufacturer). The rails were secured to the filled CMU each utilizing 3/8" x 4" Power Wedge bolts (refer to installation details for spacing). The left rail utilizing an aluminum snap cover measuring 1.154" wide x 0.237" high (refer to drawing # QMI-351).

Test Sample # 2 (Specimen 5):

Construction same as sample # 1 with the following modification:

The rails were secured to the filled CMU each utilizing 1/4" x 2.250" Tapcon (refer to installation details for spacing).

Test Sample # 7 (Specimen 6 – 8):

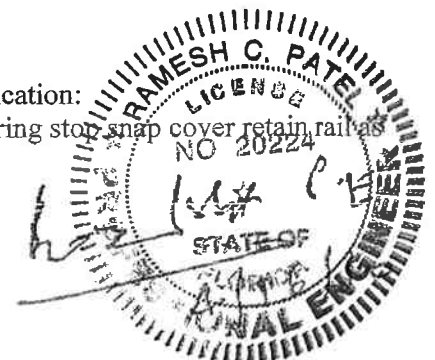
Construction same as sample # 1 with the following modification:

Both the left jamb and right jamb utilized the aluminum 2 piece spring stop retain rail as described above.

Test Sample # 8 (Specimen 9 – 11):

Construction same as sample # 1 with the following modification:

Both the left jamb and right jamb utilized the aluminum spring stop snap cover retain rail as described above.



Reinforcement: N/A

Weather-stripping:

All Samples/Specimens

Quantity	Description	Location
One (1)	0.270" wide x 0.270" high Pile with integral fin	Bottom base slat
Four (4)	0.270" wide x 0.270" high Pile with integral fin	Spring stop snap cover retain rail
Two (2)	0.270" wide x 0.270" high Pile with integral fin	2 piece Spring stop retain rail outer half
Two (2)	0.270" wide x 0.270" high Pile with integral fin	2 piece spring stop retain rail inner half

INSTALLATION:

Methods of Attachment:

Test Sample # 1 (Specimen 1 – 4):

Specimen was secured to filled concrete block test buck through rail utilizing the following:

Left Jamb: Sixteen (16) 3/8" x 4" Power Wedge bolt located 3.00" from floor and maximum of 6.00" on center thereafter.

Right Jamb: Twelve (12) 3/8" x 4" Power Wedge bolt located 3.00" from floor and maximum of 8.00" on center thereafter.

Test Sample # 2, # 7 & # 8 (Specimen 5 – 11):

Specimen was secured to filled concrete block test buck through rail utilizing the following:

Left Jamb: Thirty-one (31) 1/4" x 2.250" Tapcon located at 3.00" from floor and maximum of 3.00" on center thereafter.

Right Jamb: Thirty-one (31) 1/4" x 2.250" Tapcon located 3.00" from floor and maximum of 3.00" on center thereafter.



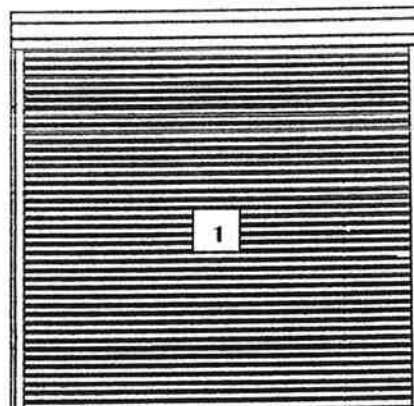
Performance Test Results

SEQUENCE OF TESTS PERFORMED:

Test Sequence: TAS 202 (Specimen 1 & 5)

1. ½ Test Pressure Positive- ASTM E330-02
2. ½ Test Pressure Negative- ASTM E330-02
3. Design Pressure Positive- ASTM E330-02
4. Design Pressure Negative- ASTM E330-02
5. Full Test pressure Positive- ASTM E330-02
6. Full Test Pressure Negative- ASTM E330-02

Measurement Locations



Deflection / Permanent Set Indicator Positions:

Deflection / Permanent Set were measured with one (1) CDI Dial Indicator located at center mid-span of curtain

STATIC AIR PRESSURE TESTS: TAS 202

Test Sample # 1 (Specimen 1)

Positive Loads (Design Load + 35.0 psf.)

Range of test	Time (sec.)	Actual Load (psf.)	Location	Deflection	Permanent Set
50 % Test Pressure	30	26.25	1	10.499"	0.614"
Design Pressure	30	35.00	1	10.434"	2.375"
Test Pressure	30	52.50	1	9.519"	0.167"

Negative loads (Design Pressure – 35.0 psf.)

Range of test	Time (sec.)	Actual Load (psf.)	Location	Deflection	Permanent Set
50 % Test Pressure	30	26.25	1	9.593"	3.125"
Design Pressure	30	35.00	1	6.790"	1.160"
Test Pressure	30	52.50	1	11.736"	2.755"

Results recorded are gross numbers

Recovery @ Test Load: Positive: **98.3 %**
 Negative: **76.5 %**

Note: The shutter system was fully operable prior to and at the conclusion of this test, and did not sustain any damage that would render it inoperable. The shutter system remained in the track throughout the duration of the test.



Impact Test: Large Missile

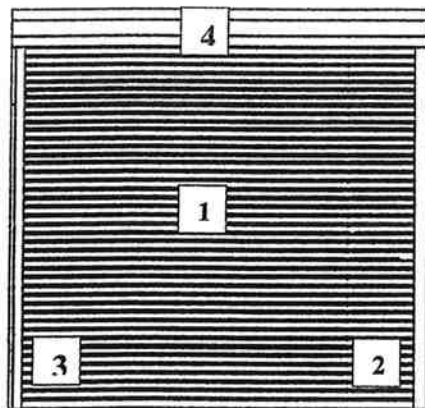
Impact tests were conducted in accordance with **TAS 201-94**

Each specimen was impacted with an 8 ft., 9 lb. Southern yellow pine 2" x 4" at the following locations:

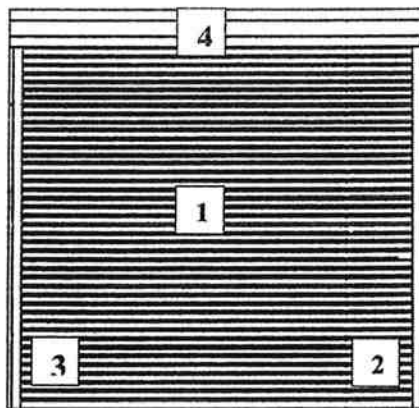
X measurement from left edge of specimen.

Y measurement from top edge of specimen.

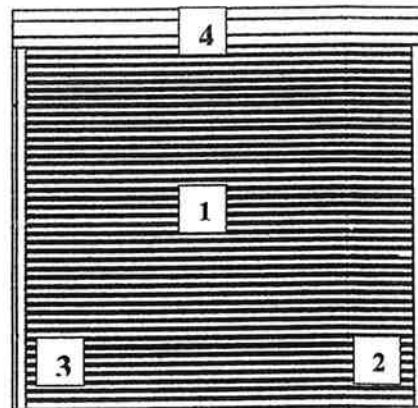
Test Sample # 1 (Specimen 2)



Test Sample # 1 (Specimen 3)



Test Sample # 1 (Specimen 4)



Impact Test: Large Missile (Continued)

Test Sample # 1 (Specimen 2)

<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	49.9	119.750"	53.000"	2.125"
2.	49.9	231.000"	93.000"	1.375"
3.	49.7	8.500"	94.500"	1.500"
4.	50.1	120.000"	5.500"	3.375"

Test Sample # 1 (Specimen 3)

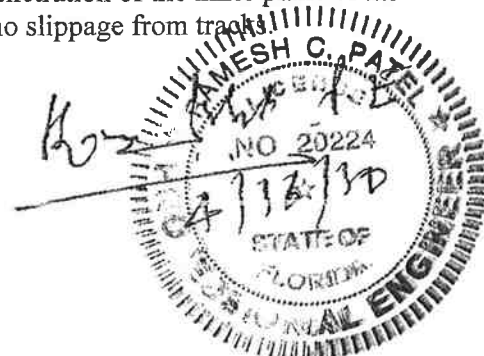
<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	49.7	120.000"	53.500"	2.000"
2.	49.5	230.500"	94.750"	1.250"
3.	49.9	8.750"	94.500"	1.375"
4.	50.1	119.500"	5.250"	3.250"

Test Sample # 1 (Specimen 4)

<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	50.1	119.500"	53.250"	2.250"
2.	49.5	231.000"	93.250"	1.500"
3.	49.9	8.500"	94.500"	1.375"
4.	50.1	120.000"	5.000"	3.250"

Results:

All specimens tested resisted the large missile impact, without penetration of the inner plane of the shutter, with no separation of slat engagement at interlocks and no slippage from tracks.



Fatigue Loading Test (TAS 203)

Cycle tests were conducted in accordance with TAS 203-94

Test Sample # 1 (Specimen 2)

Positive loads (Design Pressure) + 35.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	18.0	600	55
0.0 – 0.6	0.0	21.0	70	55
0.0 – 1.3	0.0	46.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

6.500"

Set

2.000"

Negative loads (Design Pressure) - 35.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	18.0	600	55
0.0 – 0.6	0.0	21.0	70	55
0.0 – 1.3	0.0	46.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

7.500"

Set

0.750"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.

Specimen and fasteners did not become disengaged during test procedure.

Test Sample # 1 (Specimen 3)

Positive loads (Design Pressure) + 35.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	18.0	600	55
0.0 – 0.6	0.0	21.0	70	55
0.0 – 1.3	0.0	46.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

7.500"

Set

1.000"

Negative loads (Design Pressure) - 35.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	18.0	600	55
0.0 – 0.6	0.0	21.0	70	55
0.0 – 1.3	0.0	46.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

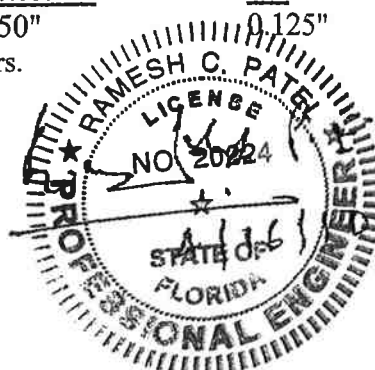
7.250"

Set

0.125"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.

Specimen and fasteners did not become disengaged during test procedure.



Fatigue Loading Test (TAS 203) (Continued)

Test Sample # 1 (Specimen 4)

Positive loads (Design Pressure) + 35.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	18.0	600	55
0.0 – 0.6	0.0	21.0	70	55
0.0 – 1.3	0.0	46.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

7.125"

Set

0.250"

Negative loads (Design Pressure) - 35.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	18.0	600	55
0.0 – 0.6	0.0	21.0	70	55
0.0 – 1.3	0.0	46.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

9.250"

Set

0.500"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.

Specimen and fasteners did not become disengaged during test procedure.

The results obtained and reported apply only to the specimens tested.

STATIC AIR PRESSURE TESTS: TAS 202

Test Sample # 2 (Specimen 5)

Positive Loads (Design Load + 150.0 psf.)

<u>Range of test</u>	<u>Time (sec.)</u>	<u>Actual Load (psf.)</u>	<u>Location</u>	<u>Deflection</u>	<u>Permanent Set</u>
50 % Test Pressure	30	112.5	1	7.910"	0.540"
Design Pressure	30	150.0	1	8.260"	0.350"
Test Pressure	30	225.0	1	9.638"	0.722"

Negative loads (Design Pressure – 150.0 psf.)

<u>Range of test</u>	<u>Time (sec.)</u>	<u>Actual Load (psf.)</u>	<u>Location</u>	<u>Deflection</u>	<u>Permanent Set</u>
50 % Test Pressure	30	112.5	1	7.450"	0.260"
Design Pressure	30	150.0	1	8.040"	0.335"
Test Pressure	30	225.0	1	10.395"	2.130"

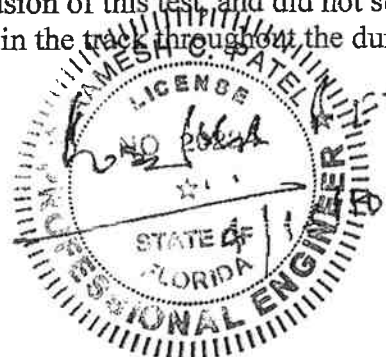
Results recorded are gross numbers

Recovery @ Test Load:

Positive: **92.5 %**

Negative: **79.5 %**

Note: The shutter system was fully operable prior to and at the conclusion of this test, and did not sustain any damage that would render it inoperable. The shutter system remained in the track throughout the duration of the test.



Impact Test: Large Missile

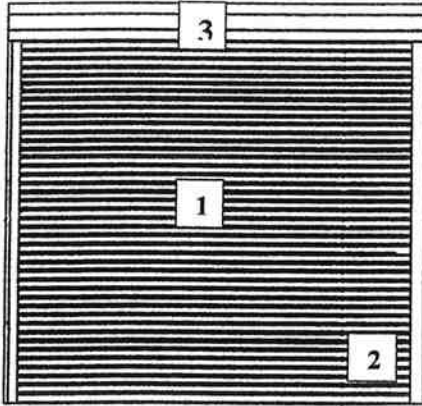
Impact tests were conducted in accordance with TAS 201-94

Each specimen was impacted with an 8 ft., 9 lb. Southern yellow pine 2" x 4" at the following locations:

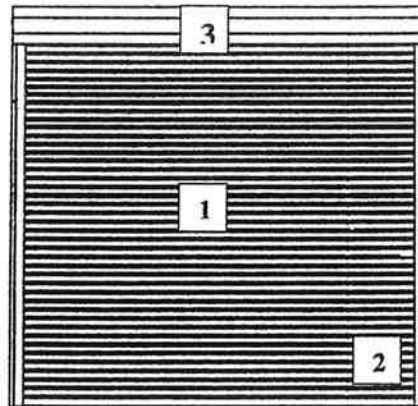
X measurement from left edge of specimen.

Y measurement from top edge of specimen.

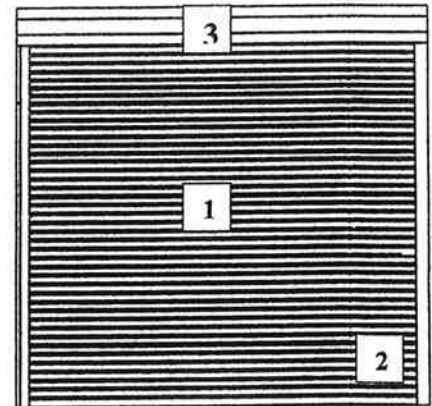
Test Sample # 7 (Specimen 6)



Test Sample # 7 (Specimen 7)



Test Sample # 7 (Specimen 8)



Impact Test: Large Missile (Continued)

Test Sample # 7 (Specimen 6)

<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	49.9	56.500"	57.500"	1.500"
2.	49.5	96.000"	93.500"	1.000"
3.	49.7	53.500"	5.000"	3.125"

Test Sample # 7 (Specimen 7)

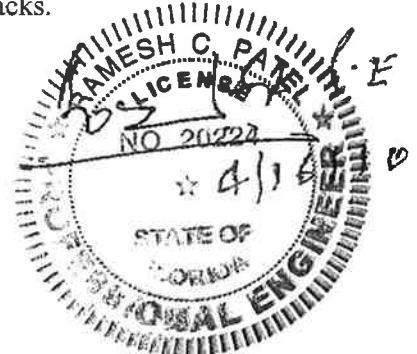
<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	49.3	54.000"	58.000"	1.375"
2.	49.7	98.500"	94.500"	1.125"
3.	49.3	54.000"	6.000"	3.000"

Test Sample # 7 (Specimen 8)

<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	49.9	56.500"	57.750"	1.625"
2.	49.7	96.500"	93.250"	1.000"
3.	49.5	53.500"	5.500"	3.000"

Results:

All specimens tested resisted the large missile impact, without penetration of the inner plane of the shutter, with no crack forming longer than 5 inches and $\frac{1}{16}$ inch wide through which air can pass or separation of slat engagement at interlocks and no slippage from tracks.



Fatigue Loading Test (TAS 203)

Cycle tests were conducted in accordance with TAS 203-94

Test Sample # 7 (Specimen 6)

Positive loads (Design Pressure) + 125.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 - 0.5	0.0	62.5	600	55
0.0 - 0.6	0.0	75.0	70	55
0.0 - 1.3	0.0	162.5	1	

Deflection taken center mid-span

671 cycles completed

Deflection
6.250"

Set
0.250"

Negative loads (Design Pressure) - 125.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 - 0.5	0.0	62.5	600	55
0.0 - 0.6	0.0	75.0	70	55
0.0 - 1.3	0.0	162.5	1	

Deflection taken center mid-span

671 cycles completed

Deflection
8.250"

Set
0.125"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.
Specimen and fasteners did not become disengaged during test procedure.

Test Sample # 7 (Specimen 7)

Positive loads (Design Pressure) + 100.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 - 0.5	0.0	50.0	600	55
0.0 - 0.6	0.0	60.0	70	55
0.0 - 1.3	0.0	130.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection
6.000"

Set
0.000"

Negative loads (Design Pressure) - 100.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 - 0.5	0.0	50.0	600	55
0.0 - 0.6	0.0	60.0	70	55
0.0 - 1.3	0.0	130.0	1	

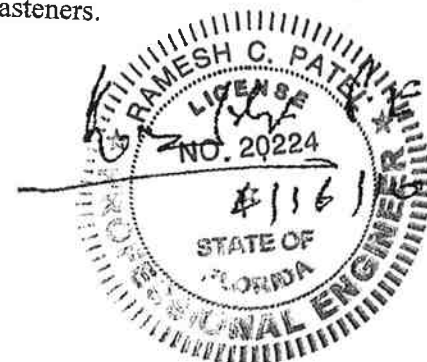
Deflection taken center mid-span

671 cycles completed

Deflection
6.250"

Set
0.000"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.
Specimen and fasteners did not become disengaged during test procedure.



Fatigue Loading Test (TAS 203) (Continued)

Test Sample # 7 (Specimen 8)

Positive loads (Design Pressure) + 100.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	50.0	600	55
0.0 – 0.6	0.0	60.0	70	55
0.0 – 1.3	0.0	130.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

8.125"

Set

0.125"

Negative loads (Design Pressure) - 100.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	50.0	600	55
0.0 – 0.6	0.0	60.0	70	55
0.0 – 1.3	0.0	130.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

6.750"

Set

0.000"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.
Specimen and fasteners did not become disengaged during test procedure.

The results obtained and reported apply only to the specimens tested.

Impact Test: Large Missile

Impact tests were conducted in accordance with **TAS 201-94**

Each specimen was impacted with an 8 ft., 9 lb. Southern yellow pine 2" x 4" at the following locations:

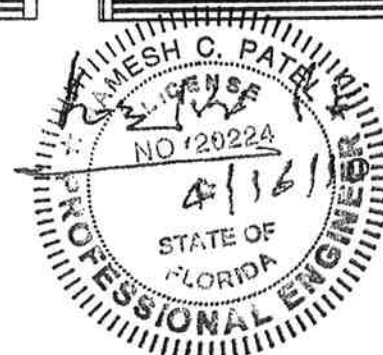
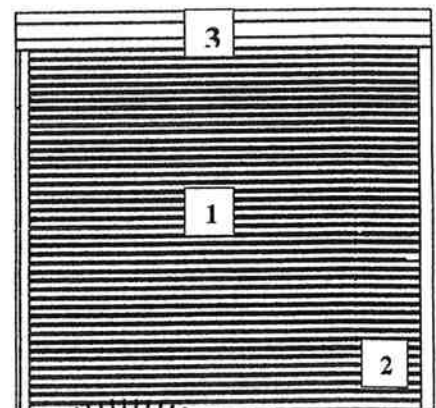
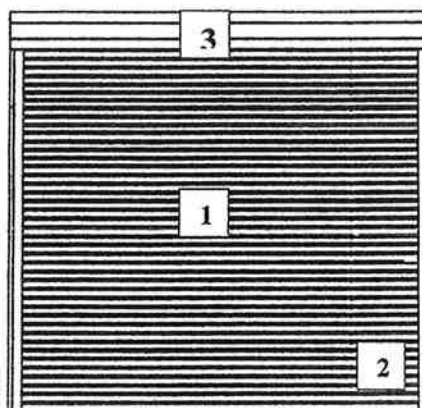
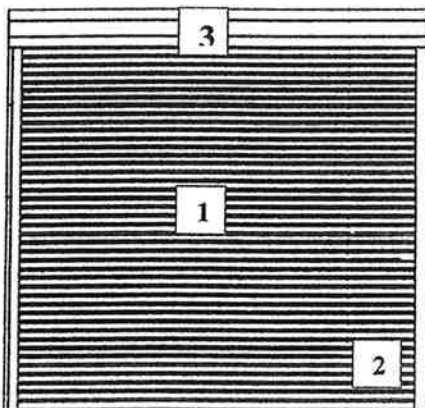
X measurement from left edge of specimen.

Y measurement from top edge of specimen.

Test Sample # 8 (Specimen 9)

Test Sample # 8 (Specimen 10)

Test Sample # 8 (Specimen 11)



Impact Test: Large Missile (Continued)

Test Sample # 8 (Specimen 9)

<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	50.1	55.000"	53.000"	1.375"
2.	50.1	96.500"	94.000"	1.000"
3.	49.9	55.250"	6.000"	3.250"

Test Sample # 8 (Specimen 10)

<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	49.9	54.750"	53.500"	1.250"
2.	50.1	96.250"	93.750"	1.125"
3.	49.7	55.500"	6.250"	3.125"

Test Sample # 8 (Specimen 11)

<u>Impact No.</u>	<u>Speed ft/sec.</u>	<u>X Measurement</u>	<u>Y Measurement</u>	<u>Deflection @ Impact</u>
1.	50.1	55.250"	53.250"	1.500"
2.	49.9	95.750"	94.250"	1.125"
3.	50.1	54.750"	6.000"	3.000"

Results: All specimens tested resisted the large missile impact, without penetration of the inner plane of the shutter, with no crack forming longer than 5 inches and $\frac{1}{16}$ inch wide through which air can pass or separation of slat engagement at interlocks and no slippage from tracks.

Fatigue Loading Test (TAS 203)

Cycle tests were conducted in accordance with TAS 203-94

Test Sample # 8 (Specimen 9)

Positive loads (Design Pressure) + 150.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 - 0.5	0.0	75.0	600	55
0.0 - 0.6	0.0	90.0	70	55
0.0 - 1.3	0.0	195.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection
7.750"

Set
0.125"

Negative loads (Design Pressure) - 150.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 - 0.5	0.0	75.0	600	55
0.0 - 0.6	0.0	90.0	70	55
0.0 - 1.3	0.0	195.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection
8.000"

Set
0.050"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.
Specimen and fasteners did not become disengaged during test procedure.



Fatigue Loading Test (TAS 203) (Continued)

Test Sample # 8 (Specimen 10)

Positive loads (Design Pressure) + 100.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	50.0	600	55
0.0 – 0.6	0.0	60.0	70	55
0.0 – 1.3	0.0	130.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

6.750"

Set

0.000"

Negative loads (Design Pressure) - 100.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	50.0	600	55
0.0 – 0.6	0.0	60.0	70	55
0.0 – 1.3	0.0	130.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

8.250"

Set

0.125"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.

Specimen and fasteners did not become disengaged during test procedure.

Test Sample # 8 (Specimen 11)

Positive loads (Design Pressure) + 100.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	50.0	600	55
0.0 – 0.6	0.0	60.0	70	55
0.0 – 1.3	0.0	130.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

5.875"

Set

0.000"

Negative loads (Design Pressure) - 100.0 psf.

<u>Range of Test</u>	<u>Actual Load (psf.)</u>		<u># of Cycles</u>	<u>Cycles/min.</u>
0.0 – 0.5	0.0	50.0	600	55
0.0 – 0.6	0.0	60.0	70	55
0.0 – 1.3	0.0	130.0	1	

Deflection taken center mid-span

671 cycles completed

Deflection

8.125"

Set

0.250"

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners.

Specimen and fasteners did not become disengaged during test procedure.

The results obtained and reported apply only to the specimens tested.

Results:

Upon completion of all testing the specimens, as applicable per TAS 201, TAS 202 & TAS 203, meet the applicable requirements of chapter 16 of the Florida Building Code, Building 2007

Comments:

Nominal 2-mil polyethylene film was used to seal against air leakage during structural tests. The film was used in a manner that did not influence the test results.



Drawings to be submitted:

Submittal drawings numbered as listed and marked with the CTL stamp are a part of this report submitted by our client (QMI Security Solutions): S-1209-EG sheet 1 thru 5 of 5, QMI-487, QMI-488, QMI-489, QMI-408, QMI-395, QMI-410, QMI-477, QMI-351, GAH-47632, QMI-409, GAH-45827, QMI-331, 10A17116, GAS-46374 and GAS-45356.

Remarks: Detailed drawings were available for laboratory records and comparison to the tested specimen at the time of this report. A copy of this report along with representative sections of the tested specimens will be retained by CTL for a period of ten (10) years. The results obtained apply only to the specimens tested.

This test report does not constitute certification of this product, but only that the above results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specification.

Certified Testing Laboratories assumes that all information provided by the client is accurate, and that all physical and chemical properties of the components are as stated by the Manufacturer.

Certified Testing Laboratories, Inc.

Clients Witness Present:

Milt Prosperi - QMI Security Solutions
Don Fowler - QMI Security Solutions

All Tests Witnessed and Preformed By:

Justin Mobley - CTL
Ryan Blakely - CTL
Ted Scanlon - CTL
Ramesh Patel, P.E.

Jonathan Pittenger

Jonathan Pittenger
Lab Technician
Architectural Division



Cc.

QMI Security Solutions (3)
Dade County (1)
Ramesh Patel, P.E. (1)
File (1)

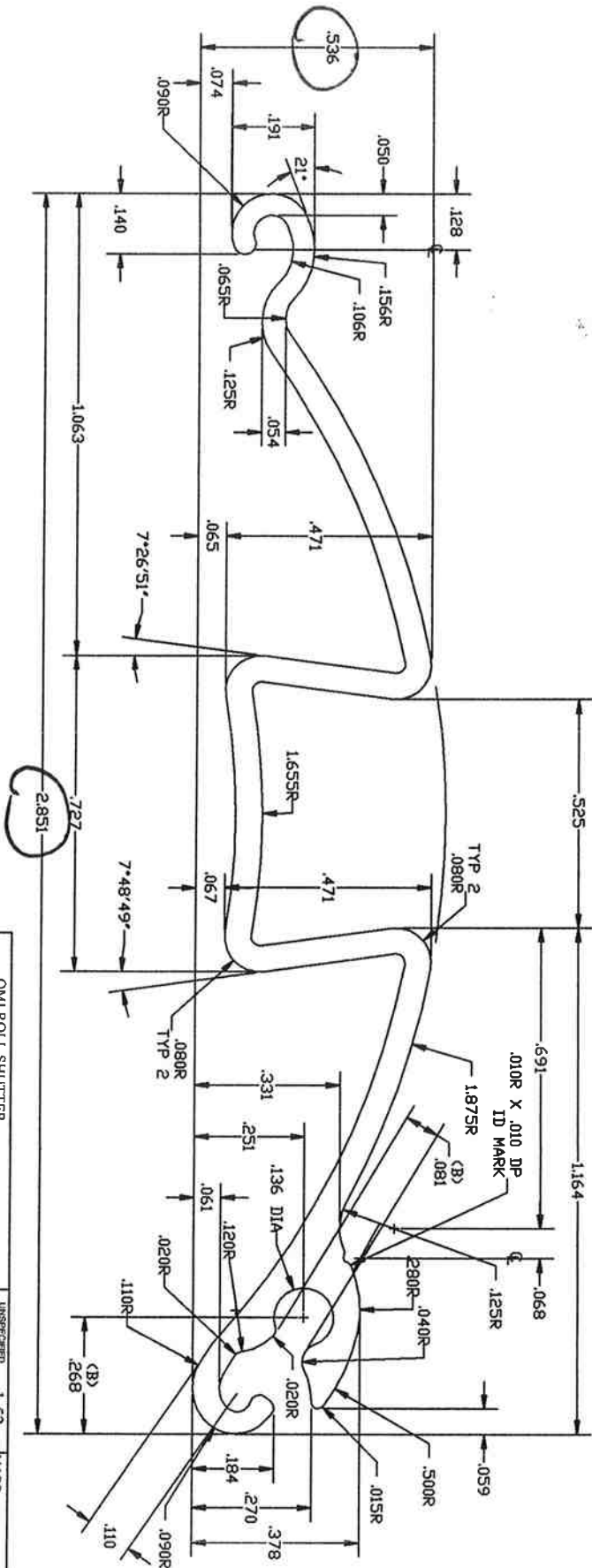
CTLA No. 2017W-1
Date Verified: 4/16/10
Verified By: 88



CFL CERTIFIED TESTING LABORATORIES
ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

Standard Aluminum Association tolerances apply unless otherwise noted.

Standard Aluminum Association tolerances apply unless otherwise noted.			DIE NUMBER	REV
CUST PART #	TITLE BLOCK REV A		QMI-410	B
CUST PART NAME: AL7 FINGER PULL	EUC			
PROPOSAL:	199			
REL. DATE 7/1/8-TMB	ALLOY 6005-T5	FINISH PAINT		



WARRANTY:

Bonnell warrants that the product(s) supplied by Bonnell shall be free from defects in workmanship and material and shall conform to all descriptions and specifications, as agreed between Bonnell and Purchaser. BONNELL DISCLAIMS ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHETHER CREATED BY CONTRACT, BY STATUTE OR OTHERWISE BY OPERATION OF LAW, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. PURCHASER'S DESIGNS, PLANS, DRAWINGS, SPECIFICATIONS AND REQUIREMENTS.

For any product that is not included in Bonnell's standard product line, offered for sale generally in the United States of America's, it is agreed that Purchaser has engaged Bonnell to manufacture such product to Purchaser's specifications and requirements. Bonnell shall not be responsible for the adequacy of prime, drawings, specifications and requirements respecting such product or for the adequacy of the design represented thereby. Bonnell also shall not be responsible for the adequacy of the materials incorporated in such product or for testing or otherwise determining the sufficiency and applicability of the design. Bonnell shall not be responsible for determining, or assuring that such product or the use or application of such product conforms with applicable federal, state or local laws, rules or regulations. Bonnell's only warranty with respect to such products shall be as set forth above.

All Designs, plans, prints, or drawings of whatever kind prepared by Bonnell with respect to such products shall be owned by Bonnell and shall remain the sole property of Bonnell.

B	268 WAS 300, 081 VAS88			10-26-09	TR48
A	COMPLETELY REVISIED, NEW DIE REQUIRED			05-06-08	12M
REV	DESCRIPTION OF REVISION			DATE	BY
Standard Nominal Wall Thickness Tolerance Chart (#)					
for Circumscribing Circle Sizes Less than 10 inches					
Up thru 0.125	.006	0.250 - 0.499	.008	0.750 - 0.999	.010
0.125 - 0.249	.007	0.500 - 0.749	.009	hollows 10% .010 min	.060 max
Structural values estimated for reference only.					
In:	.0021 $\times 10^6 \text{ mm}^4$	.005 in^4	By:	.0799 $\times 10^6 \text{ mm}^4$	.192 in^4
5x:	.302 $\times 10^7 \text{ mm}^3$	.018 in^3	5y:	2.001 $\times 10^7 \text{ mm}^3$	.122 in^3
CGx:	6.88 mm	2.71 in	CGy:	39.93 mm	1.572 in

QMI-410



BONNEL

34294
QMI ROLL SHUTTER
D/B/A QMI ROLL SHUTTER SUPPLY
1661 GLEN LAKE AVENUE
ITASCA IL 60143

UNSCRATCHED WALLS:	1.52	MASS:	.495		.332
	mm		kg		mm
UNSCRATCHED RAUHL:	.060	EST PER:	231.09		9.098
	mm		mm		mm
DATE:	6/24/08	OUT PER:			
	mm		mm		mm
DRAWN:	CUSTOMER	EXP PER:			
	mm		mm		mm
SCALE:	4:1	BUFF PER:			
	mm		mm		mm
THIN BAR:	NO	CLASS:	Solid		
	mm		mm		mm
PAD CODE:	NO	C.C.D.:	467	mm	27
	mm		mm		mm
PAD AREA:			73.69	mm ²	2.901
			mm ²		mm ²

AZO-BRADE

FOR POUR AND DEBRIDGE ONLY
MUST BE SIGNED BEFORE RELEASE

Bonnell Aluminum recommends that all filled & debridged profiles be azo-braided. Customer shall bear all responsibilities for product failure originated by dry shrinkage and cracking of the polyurethane polymer thermal barrier. If this profile has not exclusively been azo-braided, filled and debridged by Bonnell Aluminum, Note: Not all filled & debridged profiles can be azo-braided because of design constraints. Therefore, Customer shall bear all responsibilities for product failure originated by dry shrinkage and cracking of the polyurethane polymer thermal barrier. If this profile can not be azo-braided, filled and debridged by Bonnell Aluminum.

Can the profile be azo-braided? Yes ☐ No ☐
Customer initials: _____ I, hereby, authorize Bonnell Aluminum to perform azo-braiding, filling and debridging of this profile.
Customer initials: _____ I, hereby, decline for Bonnell Aluminum to perform azo-braiding, filling and debridging of this profile.

APPROVED BY: _____

APPROVAL DATE: _____

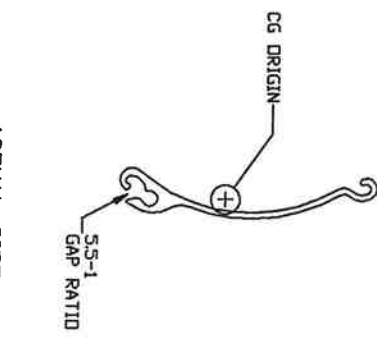
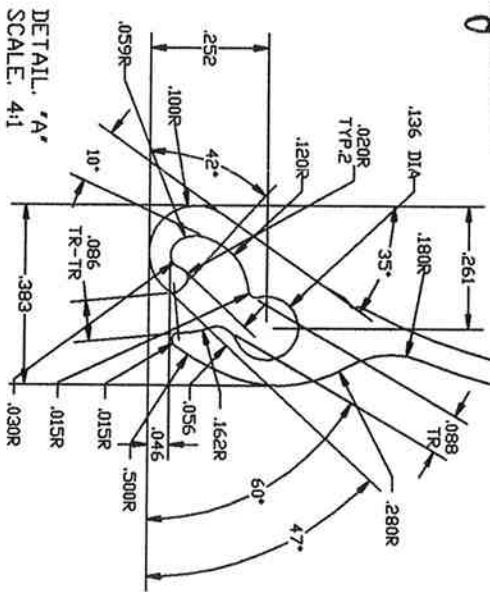
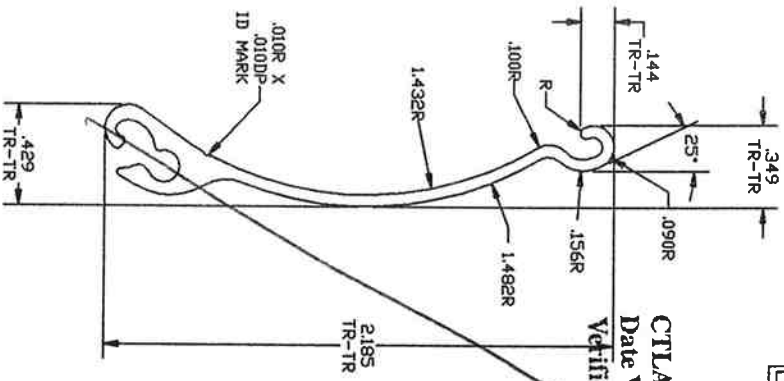


ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTLA No. 2017-0-1

Date Verified: 4/16/16

Verified By: [Signature]



ALL SURFACES EXPOSED

ACTUAL SIZE

PRELIMINARY

FOR APPROVAL ONLY
MUST BE SIGNED BEFORE RELEASE

AUTHORIZATION TO BEGIN DIE CONSTRUCTION
This drawing is not necessarily an exact copy of the customer's original. By your signature on this print you agree to accept the design, dimensions, and 1D mark location as shown and to accept all legal responsibility for infringement of patents, copyright or industrial design relating to this drawing and to hold the WILLIAM L. BONNELL COMPANY and its affiliates harmless from any claims, suits, actions, or demands arising therefrom. Please sign and return as soon as possible. Die construction cannot proceed until signed approval is received. If not shown, please indicate exposed surfaces.

APPROVED BY: _____

APPROVAL DATE: _____

Standard Aluminum Association tolerances apply unless otherwise noted.			
CUST PART #:	AL7	DIE NUMBER	REV
CUST PART NAME:	2" STARTER SLAT	EUC	QMI-477
PROPOSAL:	REL. DATE	199	
	ALLOY 6063-T6	FINISH AE	

THE ELECTRONIC GEOMETRY IS TO GOVERN THE DIMENSIONS FOR THIS SHAPE. THEREFORE SOME DIMENSIONS ARE NOT SHOWN ON THIS DRAWING.

Standard Nominal Wall Thickness Tolerance Chart (4)	
for Circumference Circle Size Less than 10 inches	
Up thru 0.124 0.06	0.250 - 0.499 0.008
0.125 - 0.249 0.007	0.500 - 0.749 0.009
	0.750 - 0.999 0.010
	1.000 - 1.249 0.012
	1.250 - 1.499 0.015
	1.500 - 1.749 0.018
	1.750 - 1.999 0.020
	2.000 - 2.249 0.022
	2.250 - 2.499 0.025
	2.500 - 2.749 0.028
	2.750 - 2.999 0.030
	3.000 - 3.249 0.032
	3.250 - 3.499 0.035
	3.500 - 3.749 0.038
	3.750 - 3.999 0.040
	4.000 - 4.249 0.042
	4.250 - 4.499 0.045
	4.500 - 4.749 0.048
	4.750 - 4.999 0.050
	5.000 - 5.249 0.052
	5.250 - 5.499 0.055
	5.500 - 5.749 0.058
	5.750 - 5.999 0.060
	6.000 - 6.249 0.062
	6.250 - 6.499 0.065
	6.500 - 6.749 0.068
	6.750 - 6.999 0.070
	7.000 - 7.249 0.072
	7.250 - 7.499 0.075
	7.500 - 7.749 0.078
	7.750 - 7.999 0.080
	8.000 - 8.249 0.082
	8.250 - 8.499 0.085
	8.500 - 8.749 0.088
	8.750 - 8.999 0.090
	9.000 - 9.249 0.092
	9.250 - 9.499 0.095
	9.500 - 9.749 0.098
	9.750 - 9.999 0.100
	10.000 - 10.249 0.102
	10.250 - 10.499 0.105
	10.500 - 10.749 0.108
	10.750 - 10.999 0.110
	11.000 - 11.249 0.112
	11.250 - 11.499 0.115
	11.500 - 11.749 0.118
	11.750 - 11.999 0.120
	12.000 - 12.249 0.122
	12.250 - 12.499 0.125
	12.500 - 12.749 0.128
	12.750 - 12.999 0.130
	13.000 - 13.249 0.132
	13.250 - 13.499 0.135
	13.500 - 13.749 0.138
	13.750 - 13.999 0.140
	14.000 - 14.249 0.142
	14.250 - 14.499 0.145
	14.500 - 14.749 0.148
	14.750 - 14.999 0.150
	15.000 - 15.249 0.152
	15.250 - 15.499 0.155
	15.500 - 15.749 0.158
	15.750 - 15.999 0.160
	16.000 - 16.249 0.162
	16.250 - 16.499 0.165
	16.500 - 16.749 0.168
	16.750 - 16.999 0.170
	17.000 - 17.249 0.172
	17.250 - 17.499 0.175
	17.500 - 17.749 0.178
	17.750 - 17.999 0.180
	18.000 - 18.249 0.182
	18.250 - 18.499 0.185
	18.500 - 18.749 0.188
	18.750 - 18.999 0.190
	19.000 - 19.249 0.192
	19.250 - 19.499 0.195
	19.500 - 19.749 0.198
	19.750 - 19.999 0.200
	20.000 - 20.249 0.202
	20.250 - 20.499 0.205
	20.500 - 20.749 0.208
	20.750 - 20.999 0.210
	21.000 - 21.249 0.212
	21.250 - 21.499 0.215
	21.500 - 21.749 0.218
	21.750 - 21.999 0.220
	22.000 - 22.249 0.222
	22.250 - 22.499 0.225
	22.500 - 22.749 0.228
	22.750 - 22.999 0.230
	23.000 - 23.249 0.232
	23.250 - 23.499 0.235
	23.500 - 23.749 0.238
	23.750 - 23.999 0.240
	24.000 - 24.249 0.242
	24.250 - 24.499 0.245
	24.500 - 24.749 0.248
	24.750 - 24.999 0.250
	25.000 - 25.249 0.252
	25.250 - 25.499 0.255
	25.500 - 25.749 0.258
	25.750 - 25.999 0.260
	26.000 - 26.249 0.262
	26.250 - 26.499 0.265
	26.500 - 26.749 0.268
	26.750 - 26.999 0.270
	27.000 - 27.249 0.272
	27.250 - 27.499 0.275
	27.500 - 27.749 0.278
	27.750 - 27.999 0.280
	28.000 - 28.249 0.282
	28.250 - 28.499 0.285
	28.500 - 28.749 0.288
	28.750 - 28.999 0.290
	29.000 - 29.249 0.292
	29.250 - 29.499 0.295
	29.500 - 29.749 0.298
	29.750 - 29.999 0.300
	30.000 - 30.249 0.302
	30.250 - 30.499 0.305
	30.500 - 30.749 0.308
	30.750 - 30.999 0.310
	31.000 - 31.249 0.312
	31.250 - 31.499 0.315
	31.500 - 31.749 0.318
	31.750 - 31.999 0.320
	32.000 - 32.249 0.322
	32.250 - 32.499 0.325
	32.500 - 32.749 0.328
	32.750 - 32.999 0.330
	33.000 - 33.249 0.332
	33.250 - 33.499 0.335
	33.500 - 33.749 0.338
	33.750 - 33.999 0.340
	34.000 - 34.249 0.342
	34.250 - 34.499 0.345
	34.500 - 34.749 0.348
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	35.000 - 35.249 0.352
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	35.500 - 35.749 0.358
	35.750 - 35.999 0.360
	36.000 - 36.249 0.362
	36.250 - 36.499 0.365
	36.500 - 36.749 0.368
	36.750 - 36.999 0.370
	37.000 - 37.249 0.372
	37.250 - 37.499 0.375
	37.500 - 37.749 0.378
	37.750 - 37.999 0.380
	38.000 - 38.249 0.382
	38.250 - 38.499 0.385
	38.500 - 38.749 0.388
	38.750 - 38.999 0.390
	39.000 - 39.249 0.392
	39.250 - 39.499 0.395
	39.500 - 39.749 0.398
	39.750 - 39.999 0.400
	40.000 - 40.249 0.402
	40.250 - 40.499 0.405
	40.500 - 40.749 0.408
	40.750 - 40.999 0.410
	41.000 - 41.249 0.412
	41.250 - 41.499 0.415
	41.500 - 41.749 0.418
	41.750 - 41.999 0.420
	42.000 - 42.249 0.422
	42.250 - 42.499 0.425
	42.500 - 42.749 0.428
	42.750 - 42.999 0.430
	43.000 - 43.249 0.432
	43.250 - 43.499 0.435
	43.500 - 43.749 0.438
	43.750 - 43.999 0.440
	44.000 - 44.249 0.442
	44.250 - 44.499 0.445
	44.500 - 44.749 0.448
	44.750 - 44.999 0.450
	45.000 - 45.249 0.452
	45.250 - 45.499 0.455
	45.500 - 45.749 0.458
	45.750 - 45.999 0.460
	46.000 - 46.249 0.462
	46.250 - 46.499 0.465
	46.500 - 46.749 0.468
	46.750 - 46.999 0.470
	47.000 - 47.249 0.472
	47.250 - 47.499 0.475
	47.500 - 47.749 0.478
	47.750 - 47.999 0.480
	48.000 - 48.249 0.482
	48.250 - 48.499 0.485
	48.500 - 48.749 0.488
	48.750 - 48.999 0.490
	49.000 - 49.249 0.492
	49.250 - 49.499 0.495
	49.500 - 49.749 0.498
	49.750 - 49.999 0.500
	50.000 - 50.249 0.502
	50.250 - 50.499 0.505
	50.500 - 50.749 0.508
	50.750 - 50.999 0.510
	51.000 - 51.249 0.512
	51.250 - 51.499 0.515
	51.500 - 51.749 0.518
	51.750 - 51.999 0.520
	52.000 - 52.249 0.522
	52.250 - 52.499 0.525
	52.500 - 52.749 0.528
	52.750 - 52.999 0.530
	53.000 - 53.249 0.532
	53.250 - 53.499 0.535
	53.500 - 53.749 0.538
	53.750 - 53.999 0.540
	54.000 - 54.249 0.542
	54.250 - 54.499 0.545
	54.500 - 54.749 0.548
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	55.000 - 55.249 0.552
	55.250 - 55.499 0.555
	55.500 - 55.749 0.558
	55.750 - 55.999 0.560
	56.000 - 56.249 0.562
	56.250 - 56.499 0.565
	56.500 - 56.749 0.568
	56.750 - 56.999 0.570
	57.000 - 57.249 0.572
	57.250 - 57.499 0.575
	57.500 - 57.749 0.578
	57.750 - 57.999 0.580
	58.000 - 58.249 0.582
	58.250 - 58.499 0.585
	58.500 - 58.749 0.588
	58.750 - 58.999 0.590
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	59.750 - 59.999 0.600
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	60.250 - 60.499 0.605
	60.500 - 60.749 0.608
	60.750 - 60.999 0.610
	61.000 - 61.249 0.612
	61.250 - 61.499 0.615
	61.500 - 61.749 0.618
	61.750 - 61.999 0.620
	62.000 - 62.249 0.622
	62.250 - 62.499 0.625
	62.500 - 62.749 0.628
	62.750 - 62.999 0.630
	63.000 - 63.249 0.632
	63.250 - 63.499 0.635
	63.500 - 63.749 0.638
	63.750 - 63.999 0.640
	64.000 - 64.249 0.642
	64.250 - 64.499 0.645
	64.500 - 64.749 0.648
	64.750 - 64.999 0.650
	65.000 - 65.249 0.652
	65.250 - 65.499 0.655
	65.500 - 65.749 0.658
	65.750 - 65.999 0.660
	66.000 - 66.249 0.662
	66.250 - 66.499 0.665
	66.500 - 66.749 0.668
	66.750 - 66.999 0.670
	67.000 - 67.249 0.672
	67.250 - 67.499 0.675
	67.500 - 67.749 0.678
	67.750 - 67.999 0.680
	68.000 - 68.249 0.682
	68.250 - 68.499 0.685
	68.500 - 68.749 0.688
	68.750 - 68.999 0.690
	69.000 - 69.249 0.692
	69.250 - 69.499 0.695
	69.500 - 69.749 0.698
	69.750 - 69.999 0.700
	70.000 - 70.249 0.702
	70.250 - 70.499 0.705
	70.500 - 70.749 0.708
	70.750 - 70.999 0.710
	71.000 - 71.249 0.712
	71.250 - 71.499 0.715
	71.500 - 71.749 0.718
	71.750 - 71.999 0.720
	72.000 - 72.249 0.722
	72.250 - 72.499 0.725
	72.500 - 72.749 0.728
	72.750 - 72.999 0.730
	73.000 - 73.249 0.732
	73.250 - 73.499 0.735
	73.500 - 73.749 0.738
	73.750 - 73.999 0.740
	74.000 - 74.249 0.742
	74.250 - 74.499 0.745
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	75.250 - 75.499 0



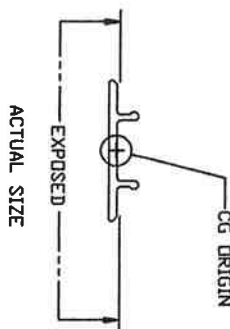
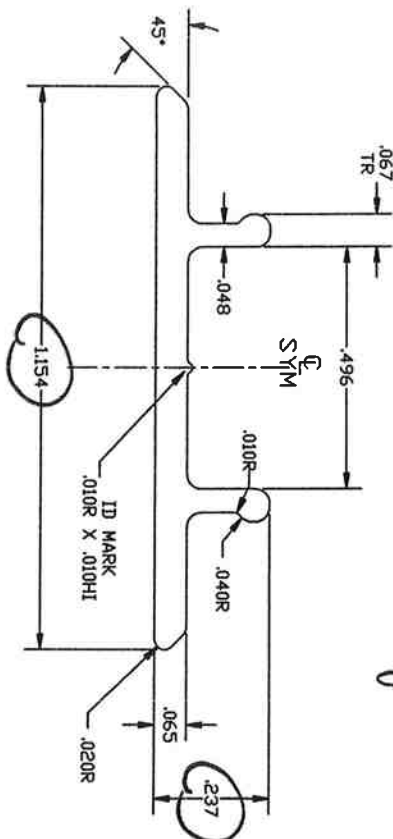
CTI
ESTIMATING LABORATORIES

ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTLA No. 261725-1

Date Verified: 4/16/12

Verified By: [Signature]



Standard Nominal Wall Thickness Tolerance Chart (#)		Structural values estimated for reference only.	
for Circumscribing Circle Sizes Less than 10 inches			
Up thru 0.124	0.006	1x: .0000 x 10 ⁶ mm ⁴	1y: .0037 x 10 ⁶ mm ⁴
0.125 - 0.249	0.007	1x: .000 x 10 ⁷ mm ³	1y: .256 x 10 ³ mm ³
0.250 - 0.499	0.008	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
0.500 - 0.749	0.009	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
0.750 - 0.999	0.010	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
1.000 - 1.249	0.011	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
1.250 - 1.499	0.012	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
1.500 - 1.749	0.013	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
1.750 - 1.999	0.014	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
2.000 - 2.249	0.015	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
2.250 - 2.499	0.016	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
2.500 - 2.749	0.017	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
2.750 - 2.999	0.018	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
3.000 - 3.249	0.019	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
3.250 - 3.499	0.020	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
3.500 - 3.749	0.021	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
3.750 - 3.999	0.022	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
4.000 - 4.249	0.023	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
4.250 - 4.499	0.024	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
4.500 - 4.749	0.025	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
4.750 - 4.999	0.026	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
5.000 - 5.249	0.027	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
5.250 - 5.499	0.028	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
5.500 - 5.749	0.029	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
5.750 - 5.999	0.030	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
6.000 - 6.249	0.031	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
6.250 - 6.499	0.032	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
6.500 - 6.749	0.033	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
6.750 - 6.999	0.034	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
7.000 - 7.249	0.035	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
7.250 - 7.499	0.036	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
7.500 - 7.749	0.037	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
7.750 - 7.999	0.038	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
8.000 - 8.249	0.039	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
8.250 - 8.499	0.040	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
8.500 - 8.749	0.041	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
8.750 - 8.999	0.042	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
9.000 - 9.249	0.043	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
9.250 - 9.499	0.044	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
9.500 - 9.749	0.045	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
9.750 - 9.999	0.046	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
10.000 - 10.249	0.047	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
10.250 - 10.499	0.048	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
10.500 - 10.749	0.049	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
10.750 - 10.999	0.050	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
11.000 - 11.249	0.051	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
11.250 - 11.499	0.052	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
11.500 - 11.749	0.053	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
11.750 - 11.999	0.054	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
12.000 - 12.249	0.055	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
12.250 - 12.499	0.056	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
12.500 - 12.749	0.057	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
12.750 - 12.999	0.058	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
13.000 - 13.249	0.059	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
13.250 - 13.499	0.060	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
13.500 - 13.749	0.061	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
13.750 - 13.999	0.062	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
14.000 - 14.249	0.063	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
14.250 - 14.499	0.064	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
14.500 - 14.749	0.065	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
14.750 - 14.999	0.066	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
15.000 - 15.249	0.067	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
15.250 - 15.499	0.068	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
15.500 - 15.749	0.069	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
15.750 - 15.999	0.070	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
16.000 - 16.249	0.071	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
16.250 - 16.499	0.072	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
16.500 - 16.749	0.073	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
16.750 - 16.999	0.074	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
17.000 - 17.249	0.075	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
17.250 - 17.499	0.076	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
17.500 - 17.749	0.077	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
17.750 - 17.999	0.078	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
18.000 - 18.249	0.079	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
18.250 - 18.499	0.080	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
18.500 - 18.749	0.081	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
18.750 - 18.999	0.082	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
19.000 - 19.249	0.083	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
19.250 - 19.499	0.084	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
19.500 - 19.749	0.085	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
19.750 - 19.999	0.086	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
20.000 - 20.249	0.087	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
20.250 - 20.499	0.088	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
20.500 - 20.749	0.089	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
20.750 - 20.999	0.090	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
21.000 - 21.249	0.091	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
21.250 - 21.499	0.092	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
21.500 - 21.749	0.093	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
21.750 - 21.999	0.094	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
22.000 - 22.249	0.095	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
22.250 - 22.499	0.096	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
22.500 - 22.749	0.097	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
22.750 - 22.999	0.098	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
23.000 - 23.249	0.099	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
23.250 - 23.499	0.100	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
23.500 - 23.749	0.101	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
23.750 - 23.999	0.102	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
24.000 - 24.249	0.103	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
24.250 - 24.499	0.104	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
24.500 - 24.749	0.105	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
24.750 - 24.999	0.106	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
25.000 - 25.249	0.107	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
25.250 - 25.499	0.108	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
25.500 - 25.749	0.109	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
25.750 - 25.999	0.110	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
26.000 - 26.249	0.111	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
26.250 - 26.499	0.112	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
26.500 - 26.749	0.113	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
26.750 - 26.999	0.114	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
27.000 - 27.249	0.115	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
27.250 - 27.499	0.116	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
27.500 - 27.749	0.117	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
27.750 - 27.999	0.118	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
28.000 - 28.249	0.119	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
28.250 - 28.499	0.120	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
28.500 - 28.749	0.121	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
28.750 - 28.999	0.122	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
29.000 - 29.249	0.123	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
29.250 - 29.499	0.124	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
29.500 - 29.749	0.125	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
29.750 - 29.999	0.126	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
30.000 - 30.249	0.127	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
30.250 - 30.499	0.128	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
30.500 - 30.749	0.129	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
30.750 - 30.999	0.130	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
31.000 - 31.249	0.131	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
31.250 - 31.499	0.132	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
31.500 - 31.749	0.133	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
31.750 - 31.999	0.134	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
32.000 - 32.249	0.135	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
32.250 - 32.499	0.136	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
32.500 - 32.749	0.137	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
32.750 - 32.999	0.138	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
33.000 - 33.249	0.139	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
33.250 - 33.499	0.140	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
33.500 - 33.749	0.141	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
33.750 - 33.999	0.142	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
34.000 - 34.249	0.143	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
34.250 - 34.499	0.144	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
34.500 - 34.749	0.145	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
34.750 - 34.999	0.146	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
35.000 - 35.249	0.147	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
35.250 - 35.499	0.148	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
35.500 - 35.749	0.149	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³
35.750 - 35.999	0.150	1x: .000 x 10 ⁷ mm ³	1y: .016 in ³

ARCHITECTURAL DIVISION
 7252 NARCOOSSEE ROAD
 ORLANDO, FLORIDA 32822

CPLA No. 201705-1

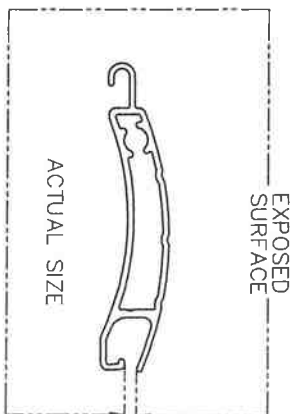
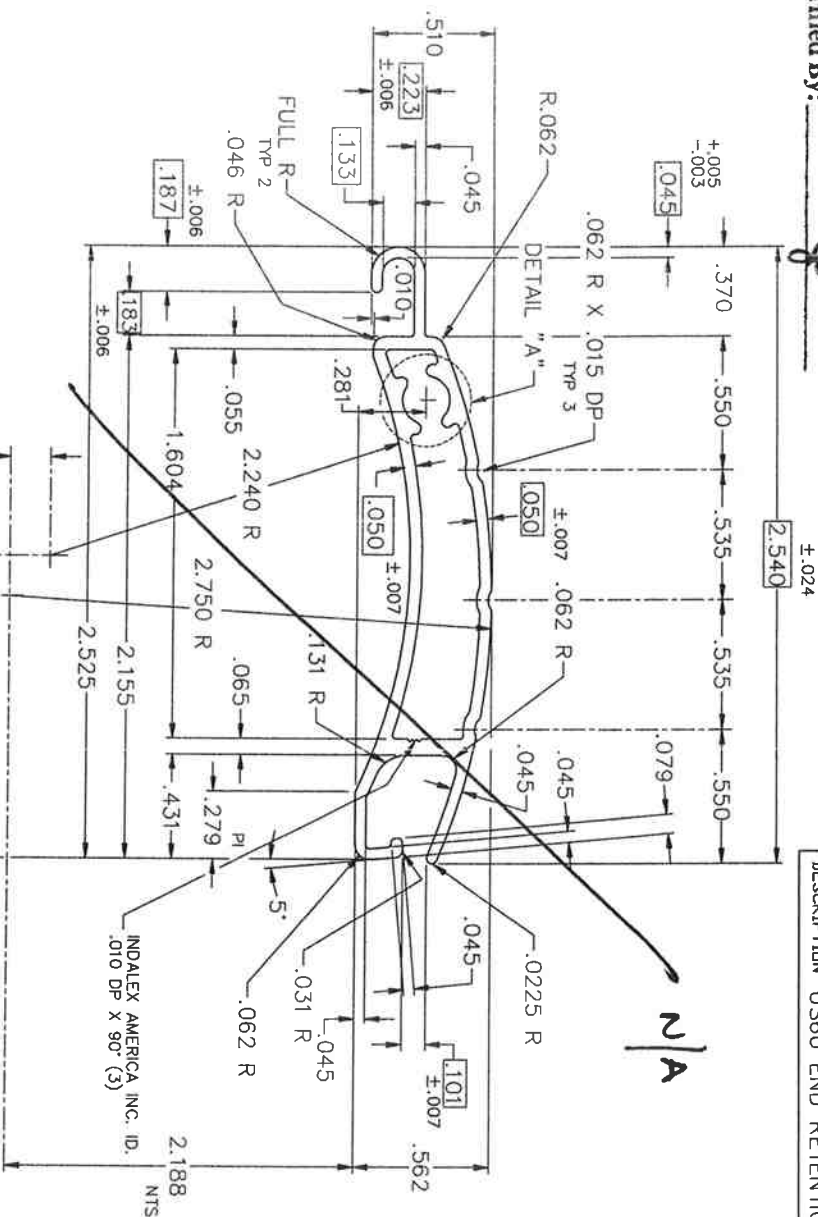
Date Verified: 4/16/10

Verified By: [Signature]

CUSTOMER ROLL-A-WAY
 DESCRIPTION US60 END RETENTION SLAT

CUSTOMER NO. GAH-47632
 DIE NO. PROPOSAL NO. R9599-1

REV.



PRODUCTION DRAWING
 9/09/03
 RELEASED DATE:
 RELEASED BY: [Signature]
 DESTROY ALL PREVIOUS COPIES

NOTE:
 1) REPLACES DIE GAH-45279

ALUMINUM ASSOCIATION STANDARD TOLERANCES APPLY UNLESS SPECIFIED OTHERWISE UNSPECIFIED WALL THICKNESS .016 UNSPECIFIED RADIUS .016			
EST. AREA	.301	IN ²	DWN BY R.M.
EST. WT.	.361	LB/FT.	CAV. 2
EST. PER.	11.473	IN	SCALE 2=1
OUT. PER.	7.444	IN	CODE -
EXP. PER.	6.149	IN	DATE 9/09/03
FACTOR	32		POCKET AREA -
CC.D.	2.545	IN	ALLOY 6063-T6
INDALEX AMERICA INC. 2905 OLD OAKWOOD BL. GAINESVILLE, GA 30604 770-535-1349 800-544-3801			
GAH-47632			
REV.			

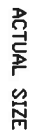


ARCHITECTURAL DIVISION

7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

Date Verified: 4/16/10

Verified By: _____



Standard Aluminum Association tolerances apply unless otherwise noted.			DIE NUMBER	REV
CUST PART #:	TITLE BLOCK REV A		QMI-409	A
CUST PART NAME: AL7 LOCK SLAT	DPM REV TOL BLOCK-REVISED			
PROPOSAL:	REL. DATE 7/1/8-TMB	ALLOY 6005-T5		
			FINISH PAINT	

Standard Aluminum Association tolerances apply unless otherwise noted

RT NAME: AL7 LOCK SLAT

AL	R
----	---

REL. DATE 7/1/8-TMB

ALLOY 6005-T5

FINISH PAINT

QIVII-409

A

WARRANTY:

BONNELL WARRANTS that the product(s) supplied by Bonnell shall be free from major defects in workmanship and material and shall conform to all descriptions and specifications, as agreed between Bonnell and Purchaser. **BONNELL DISCLAIMS ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHETHER CREATED BY CONTRACT, BY STATUTE OR OTHERWISE BY OPERATION OF LAW, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

For any product that is not included in Bonnell's standard product list offered for sale generally in the retail course of Bonnell's business, it is agreed that Purchaser has assigned Bonnell to manufacture such product to Purchaser's specifications and requirements. **Bonnell shall not be responsible for the adequacy of plans, drawings, specifications and requirements respecting such product or for the adequacy of the design represented therein.** Bonnell also shall not be responsible for the adequacy of the materials incorporated in such product or for testing or otherwise determining the sufficiency and appropriateness of the design. **Bonnell shall not be responsible for the adequacy of the design or the adequacy of the materials incorporated in such product or for testing or otherwise determining the sufficiency and appropriateness of the design.** With respect to such products, shall be as set forth above:

All Designs, plans, prints, or drawings of whatever kind prepared by Bonnell with respect to such products are and shall remain the sole property of Bonnell.

A		254 WAS .360		02-36-09		DATE		BY	
REV		DESCRIPTION OF REVISION							
Standard Nominal Wall Thickness Tolerance Chart (c)									
For Circumferencing C/C Sizes Less than 10 inches									
Up thru 0.124	.0006	0.250 - 0.499	.0008	0.750 - 0.999	.010				
0.125 - 0.249	.0007	0.500 - 0.749	.0009						
Structural values estimated for reference only.									
1x:	.0037 $\times 10^3$ mm ³	.009 $\times 10^3$ mm ³	1x:	.0741 $\times 10^3$ mm ³	178 $\times 10^3$ mm ³				
5x:	.497 $\times 10^3$ mm ³	.030 $\times 10^3$ mm ³	5x:	2.175 $\times 10^3$ mm ³	1.33 $\times 10^3$ mm ³				
	7.54 mm	.297 in	CGT:	34.06 mm	1.341 in				

QMI-409



BONNEL

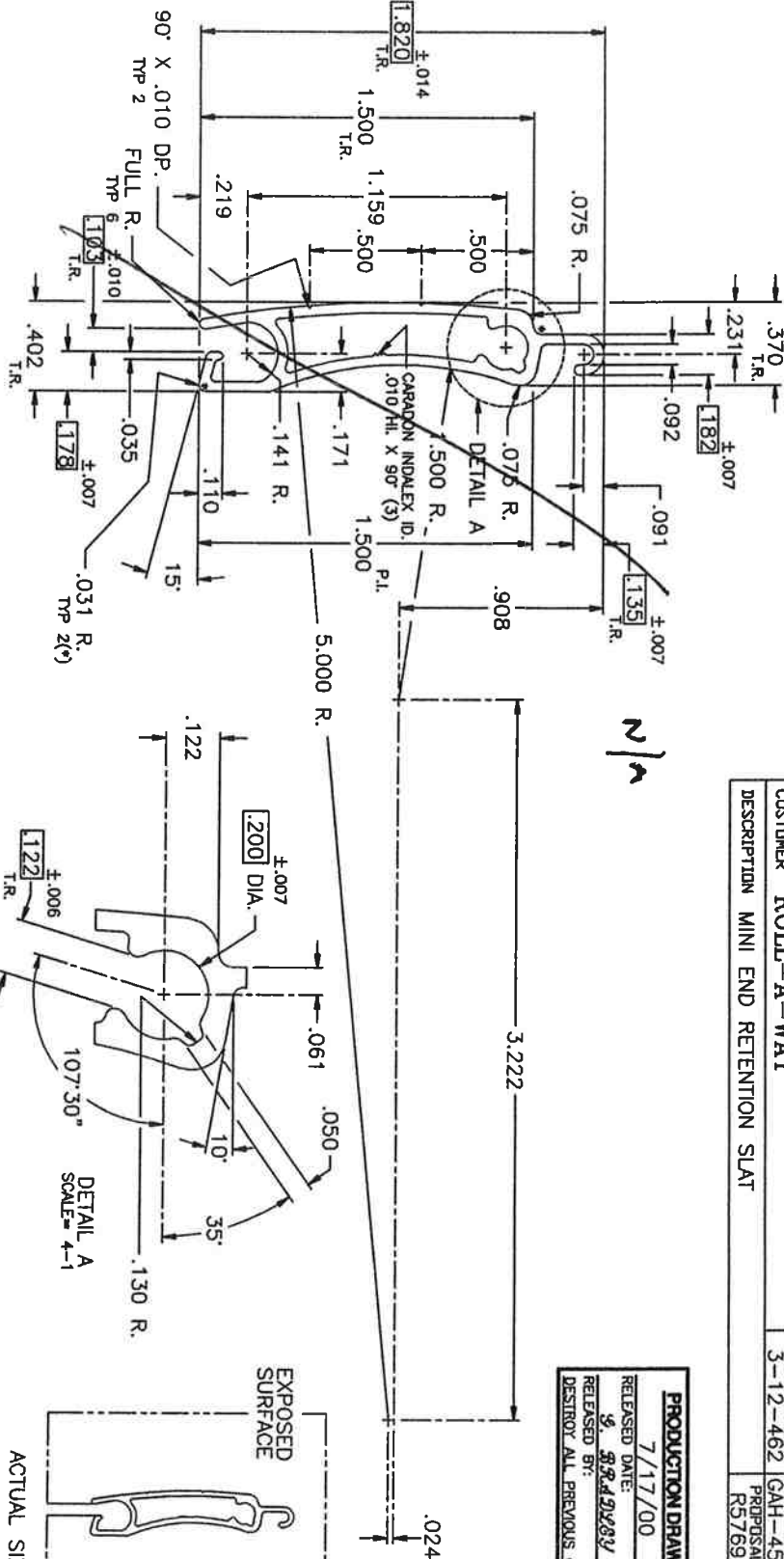
34294 QMI ROLL SHUTTER
D/B/A QMI ROLL SHUTTER SUPPLY
1661 GLEN LAKE AVENUE

UNRECORDED WALLS	mm	MASS:	.529	kg	.355	ton
UNRECORDED RADE	in	EST PER:	318.08	mm	12,523	lb
		OUT PER:	172.25		6,781	lb
	.0208	EXP PER:				
DATE:	6/23/08	BUF PER:				
DRAWN:	CUST/TMB	BUF TURNS:				
SCALE:	4:1	FACTOR:	602	mm	35	inches
THM BAR:	NO	C.C.D.:	65.46	mm	2.577	in
PAD CODE:	NO	PAD AREA		mm ²		in ²



CTLA No. 2017CS-1
Date Verified: 4/16/17
Verified By: g

PRODUCTION DRAWING
7/17/00
RELEASED DATE:
9. 20. 2003
RELEASED BY:
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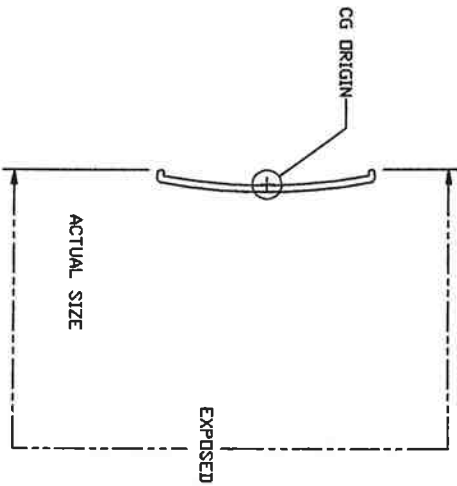
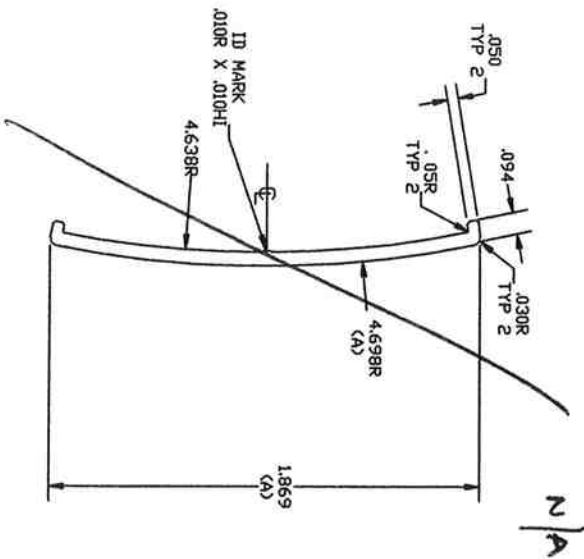
ALUMINUM ASSOCIATION STANDARD TOLERANCES APPLY UNLESS SPECIFIED OTHERWISE	UNSPECIFIED WALL THICKNESS UNSPECIFIED RADIUS	.045 ±.010 -.016	DIFF. RATING 4
--	--	---------------------	----------------



GAINESVILLE, GEORGIA									
ESTAREA	201	IN ²	DWN BY	GB	DIFF. RATING	#			
ESTMT.	.241	LBS/FT.	CKD BY		PRESS 1				
ESTPER.	8,234	IN	SCALE	2=1	CAV.	4			
DUT PER.	5,483	IN	CODE	-	BACK #	NONE			
EXPD PER.	4,477	IN	DATE	7/17/00	BOL #	1038			
FACTOR	34				RATED	69			
			POCKET AREA	-	BLADE	-			
C.C.L.D.	1,850	IN	ALLOY	6063-T6					
					DATE	SYM		REVISITN	BY



CTLA No. 2017us-1
Date Verified: 4/16/18
Verified By: g



Standard Aluminum Association tolerances apply unless otherwise noted.				DIE NUMBER	REV
CLUST PART #		XFORM METHOD: NEW A		QMI-331	A
CLUST PART NAME: SILAT COVER		ELOC			
PROPOSED:	REL DATE 07/13/04 EAM	DESIGN TOLERANCES	1/3	FINISH PAINT	

[illegible]

QMI-331

34294
QUAL ROLL SHITTER
DBA QMI ROLL SHITTER SUPPLY
1661 ELM LAKE AVENUE
ITASCA IL 60143

UNRECORDED WEIGHT	1.52 mm	MASS	209 mg	140 mm
UNRECORDED PICKUP	090 h	EST PERC	102.11 mm	4020 h
	25R mm	OUT PERC	mm	
	010R h	EXP PERC	mm	
DATE	7/94	BUFF PERC	mm	h
DRAWN	CURTIZ/KAM	BUFF TURNER	CLASS	Solid
SCALE	2:1	FACTOR	489 mm	25 mm
THIN BAR	NO	C.C.D.	47.74 mm	1.880 mm
GRID CODE	NO	PID AREA		h

WARRANTY.

Bennett warrants that the product(s) supplied by Bennett shall be free from defects in workmanship and material and shall conform to all developments and specifications, as agreed between Bennett and Purchaser. BENEVOLENT DISCLAIMS ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHETHER CREATED BY CONTRACT, BY STATUTE OR OTHERWISE BY OPERATION OF LAW, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

PURCHASES/SALES, PLANS, DRAWINGS, SPECIFICATIONS AND MEASUREMENTS.

For any product which is included in Bennett's standard program can collect the said program to be used under the Bennett's license, it is agreed that Purchaser has engaged Bennett to manufacture such product. In Purchaser's specifications and requirements, Bennett shall not be responsible for the adequacy of plans, drawings, specifications and requirements imposing such product or for the adequacy of the design of such product. Bennett also shall not be responsible for the adequacy of the materials furnished in such product or for the accuracy dimensioning or tolerances shown on such product. If such product is found to be defective, Bennett shall not be responsible for dismantling or returning that such product or for the loss or damage of such product caused by such defect. However, if such product is found to be defective, Bennett shall not be responsible for dismantling or returning that such product or for the loss or damage of such product caused by such defect. However, if such product is found to be defective, Bennett shall not be responsible for dismantling or returning that such product or for the loss or damage of such product caused by such defect. However, if such product is found to be defective, Bennett shall not be responsible for dismantling or returning that such product or for the loss or damage of such product caused by such defect.

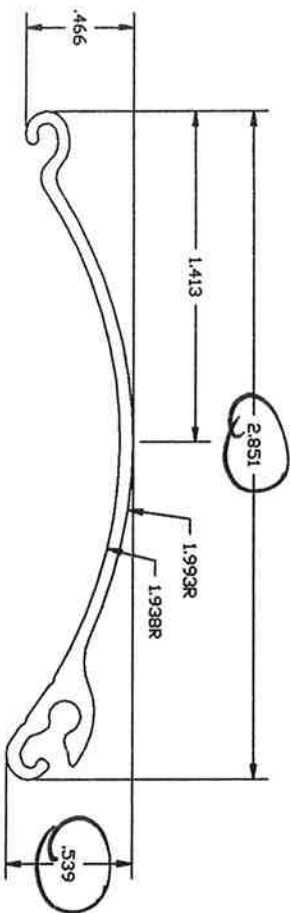
All Designs, plans, plots, or drawings of whatever kind prepared by Bennett with respect to such products or to such results are the sole property of Bennett.

**FOR POUR AND DEBRIDGE ONLY
MUST BE SIGNED BEFORE RELEASE**

if this profile can not be azo-bromed, tiled and debonded by Bonnell Aluminum

I, hereby, decline for Botinal Aluminum to perform azo-dyeing, rinsing and desizing on this profile

APPROVAL DATE:



APPROVAL DATE:

FOR APPROVAL ONLY
MUST BE SIGNED BEFORE RELEASE

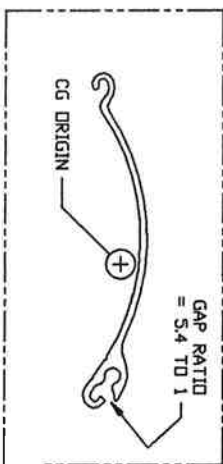
AUTHORIZATION TO BEGIN THE CONSTRUCTION

is received. If not shown, please indicate exposed surfaces

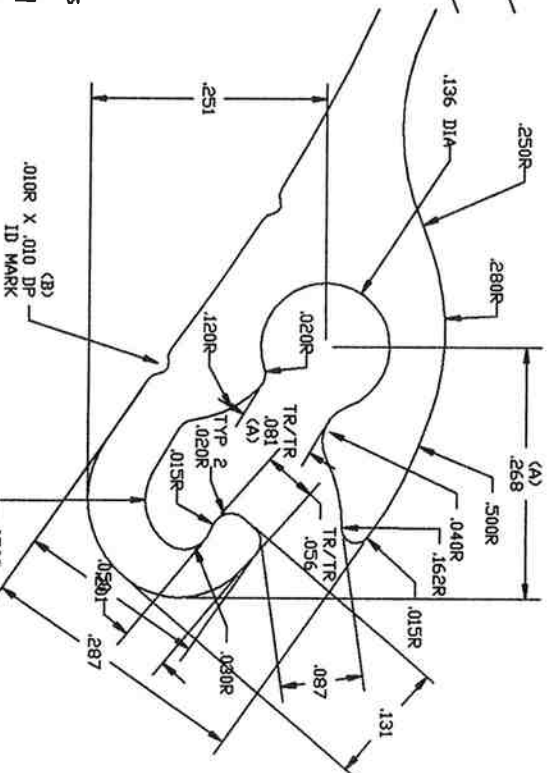
Die

DIE NUMBER

Standard Aluminum Association tolerances apply unless otherwise noted.				DIE NUMBER	REV
CUST PART #			TITLE BLOCK: 8174	QMI-395	B
CUST PART NAME: SLAT			EUC		
PROPOSAL: (1) 04/08/08 K.A.M	REL. DATE 4/10/08 T.M.B	ALLOY 6063-T6	199		
				FINISH ANOD	



ACTUAL SIZE



Bonnell warrants that the products it supplied by this contract shall be free from defects in workmanship and material and shall conform to all descriptions and specifications, as agreed between Bonnell and Purchaser. BONNELL DISCLAIMS ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHETHER CREATED BY CONTRACT, BY STATUTE OR OTHERWISE BY OPERATION OF LAW, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

PURCHASER'S DESIGNS, PLANS, DRAWINGS, SPECIFICATIONS AND REQUIREMENTS

any product that is not included in Bonetti's standard product line offered for sale generally in the marketplace of Bonetti's business. It is agreed that Twinkliver has engaged Bonetti to manufacture such product in Twinkliver's specifications and requirements. Bonetti shall not be responsible for the adequacy of, or the, drawings, specifications and requirements regarding such product or for the adequacy of the design intended therefor. Bonetti shall not be responsible for the adequacy of the materials incorporated in such product or for testing or otherwise determining the sufficiency and applicability of the design. Bonetti shall not be responsible for the adequacy of the use of such product or for the adequacy of the use of such product in accordance with local laws, rules or regulations. Bonetti's warranty with respect to such products shall be as set forth above. All drawings, materials, orders and specifications shall be controlled by Twinkliver and Bonetti shall not be responsible for the adequacy of such drawings, materials, orders and specifications.

All Designs, plans, prints, or drawings of whatever kind created by Bassett with respect to such products are and shall remain the sole property of Bassett.

1	GOIN, VASILE, IORDE, ANDRESCU, SORIN, DUMITRU, CARMAN, DAN	04/04/2007	1	OK
2	REVISAT ALTEI, ADRIAN, SORIN, DUMITRU, CARMAN, DAN	04/04/2007	1	OK
3	238 WAS 246, 081 WAS 107, NEW IDE REQUIRED	01-10-2007	1	OK
4	DELETED A COMPLETE PARTS LIST, NEW IDENTIFICATION	04/04/2007	1	OK
5	1. CLARIFIED BOTTOM SHEET (DRAWING 13)	04/04/2007	1	OK
REV	DESCRIPTION OF REVISION	DATE	BY	
Standard Nominal Wall Thickness Tolerance Chart (4)				
For Circumscribing Circle Sizes Less than 10 inches				
Up thru 0.124	0.006	0.250 - 0.499	0.008	0.250 - 0.999
0.125 - 0.249	0.007	0.500 - 0.749	0.009	1.000 and over
0.250 - 0.499	0.007	0.500 - 0.749	0.009	1.000 and over

CT ESTIMATING LABORATORIES
ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTLA No. 201705-1
Date Verified: 4/16/16
Verified By: ao

Structural values estimated for reference only

$7 \times 10^6 \text{ cm}^4$	$.004 \text{ m}^4$	$.0770 \times 10^6 \text{ cm}^4$	$.185 \text{ m}^4$
$7 \times 10^3 \text{ cm}^3$	$.013 \text{ m}^3$	$1.860 \times 10^3 \text{ cm}^3$	$.113 \text{ m}^3$
8.03 mm	$.316 \text{ m}$	CGY	41.40 mm
			1.630 m

QMI-395

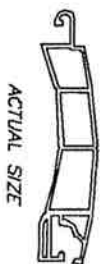
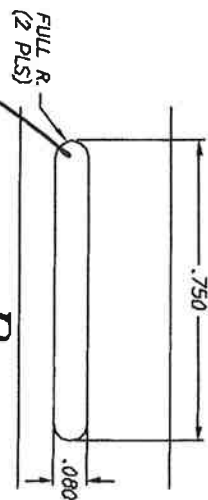
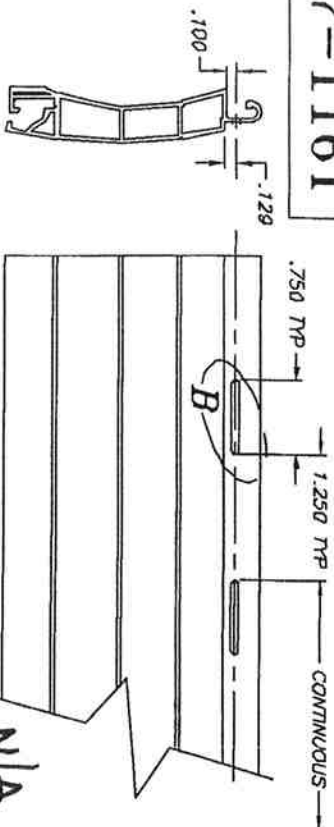
BONNELL
A T U L Y N J DE

UNIT WEIGHT	.00	MASS:	.395	kg/m	265	lb/m
UNIT VOLUME	.000	EST PER	188.24	mm	7.411	in
UNDESIGNED ROD	41R	QUT PER		mm		in
	.016R	EXP PER		mm		in
DATE:	4/3/08	BUFE PER		mm		in
DRAWN	CUST/KRAM	BUFE TURNS		mm		in
SCALE:	2:1	CLASS:	Scot-Hollow			
THIN BAR:	NO	C.C.D.:	477	mm	23	in
THIN CODE:	NO	PAD AREA	73.69	mm ²	2.901	in ²

17-116T

REVISIONS

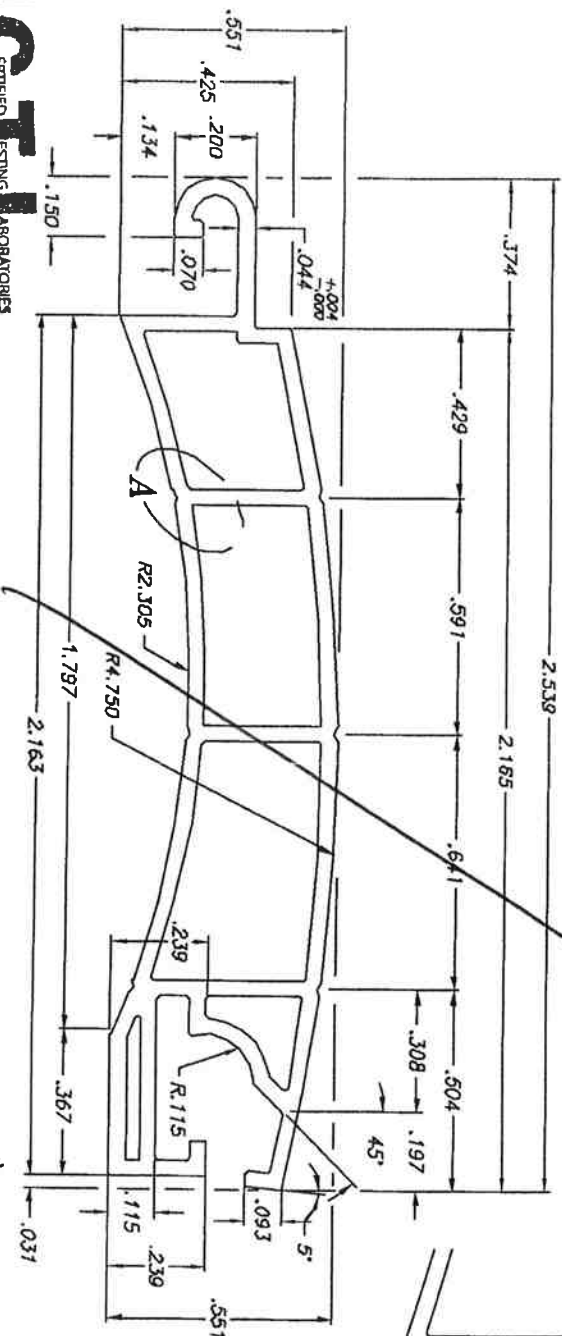
REVISIONS			
REV	DESCRIPTION	DATE	BY



ACTUAL SIZE

VENTED SLAT DETAIL
SCALE: FULL

DETAIL
SCALE: 4X



MATING DETAIL
SCALE: 4X

PRINT APPROVAL

I, the undersigned, hereby approve this print.

☐ As Director

☒ As Director

I have known the applicant for at least _____ and have known his address and I subscribe the sum of _____ for library and/or production _____ in present the print _____

This _____ day _____ 19____

Signature _____

Date _____

Please return to Exporting Dept.

OMEGA PLASTICS CORP.

OMEGA PLASTICS CORP.

NOTE:
MATERIAL GEORGIA GULF 5055
BREAK ALL CORNERS WITH R.008
TOP WALL THICKNESS .040 +.004
ANGLE TOLERANCE $\pm 1^\circ$
-.000

R2.305 is off from R4.150 $\angle = 0.218'' + 2.076''$
 SIGNATURES DATE
 BREAK ALL CORNERS WITH R.008
 TOP WALL THICKNESS .040 +.002
 ANGLE TOLERANCE $\pm .1^\circ$
 SEE 3-12-32 FOR CLARITY

 **CTI**
CERTIFIED TESTING LABORATORIES

ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTLA No. 26172w-1
Date Verified: 4/16/02
Verified By: [signature]

020

008 DP. X 130
 TYP (6 PLS)
 DETAIL A
 SCALE: 10X

OMEGA PLASTICS CORPORATION
2123 MIDDLEBURY ST.
ELKHART, INDIANA 46516

2123 MIDDLEBURY ST.
ELKHART, INDIANA 4651

TITLE

P55 SLAT

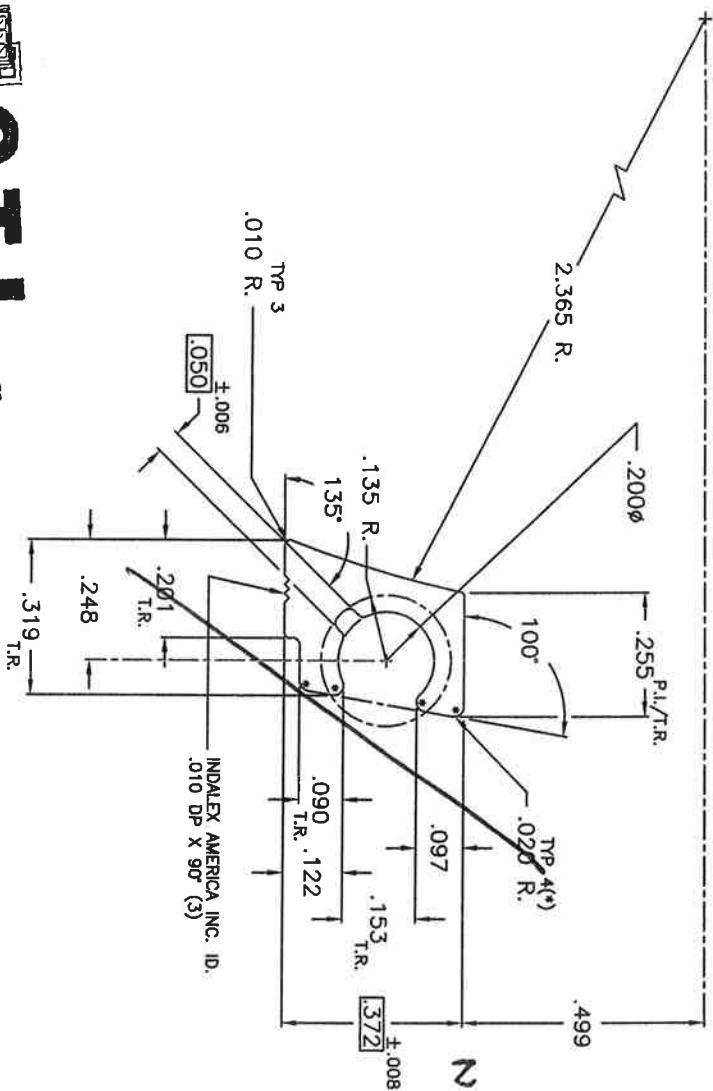
EXTRUSION

UNITs in inches

DRN. BY:	C. HAYNES	3/26/09
CHK'D. BY:		
ISSUED:		NOTES:
MATERIAL:	RIGID PVC	
COLOR:		
WT. PER FT.:	.190	
EST. AREA	.298	SPEC. GRAY. 1.47
SCALE:	4X	

SIZE	DRAWING NO.	DIE NO.
A	10A17116	17-116T

CUSTOMER	ROLL-A-WAY	CUSTOMER NO.	4-12-479	DIE NO.	GAS-46374	REV.
DESCRIPTION	P55 ER REBAR, DOUBLE END RETENTION	PROPOSAL NO.	R6534-1			



PRODUCTION DRAWING
8/13/01
RELEASED DATE:
9. 8.8.4.2.2.8.9
RELEASED BY:
DESTROY ALL PREVIOUS COPIES

CTL
CERTIFIED ESTING LABORATORIES
ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTLA No. 201705-1
Date Verified: 4/16/10
Verified By: 8

ALUMINUM ASSOCIATION STANDARD TOLERANCES				INDALEX AMERICA INC.			
APPLY UNLESS SPECIFIED OTHERWISE				2905 OLD OAKWOOD RD.			
UNSPECIFIED WALL THICKNESS				GAINESVILLE, GA. 30504			
UNSPECIFIED RADIUS .016				770-535-1349			
EST. AREA	.066	IN ²	DWN BY GB	PRESS 3			
EST. WT.	.079	LB/FT.	CKD BY	CAV. 8			
EST. PER.	1.703	IN	SCALE 4=1	BACK #40454			
DUT PER.	-	IN	CODE -	BOL # 1115			
EXP. PER.	-	IN	DATE 8/13/01	RATID 81			
FACTOR	22		POCKET AREA -	BLADE -			
C.C.D.	.508	IN	ALLOY 6063-T6				
DATE	SYM		REVISION				
DIE NO.	GAS-46374		REV				



CTI
CERTIFIED TESTING LABORATORIES

ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTLA No. 201700-1

Date Verified: 4/16/16

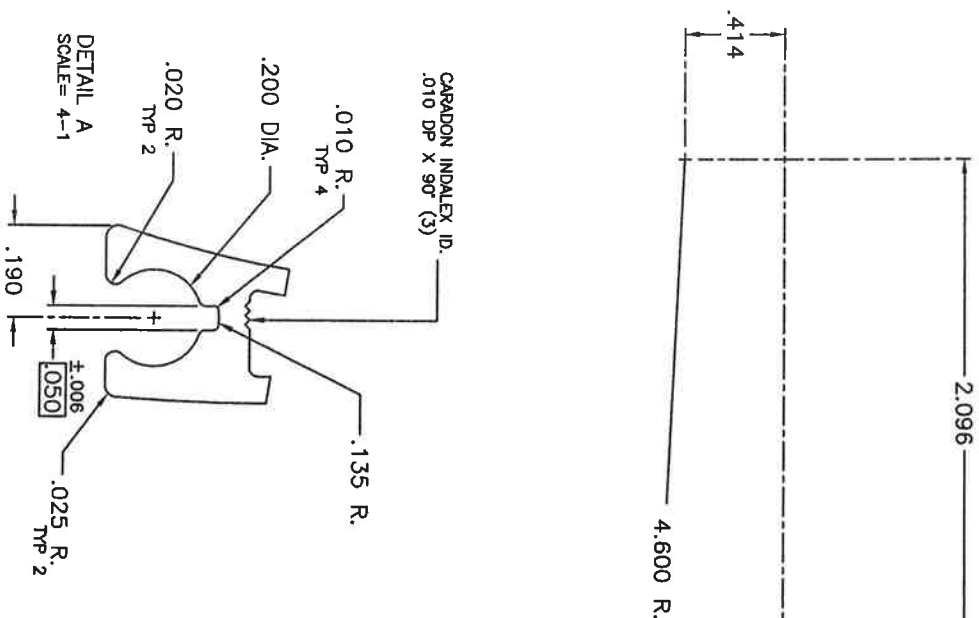
Verified By: [Signature]

CUSTOMER ROLL-A-WAY
DESCRIPTION P55 END RETENTION REBAR

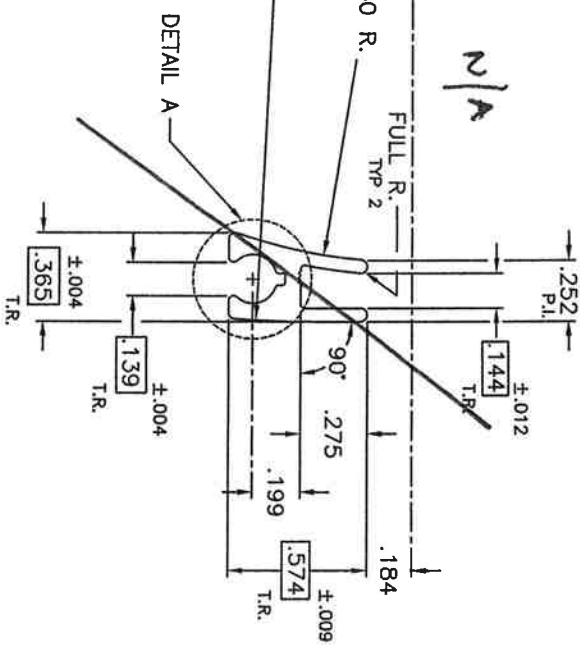
CUSTOMER NO.
3-12-422

DIE NO.
CAS-45356
PROPOSAL NO.
R5371-1

REV.



PRODUCTION DRAWING
10-18-99
RELEASED DATE:
4. 8842289
RELEASED BY:
DESTROY ALL PREVIOUS COPIES



NO
EXPOSED
SURFACES
H

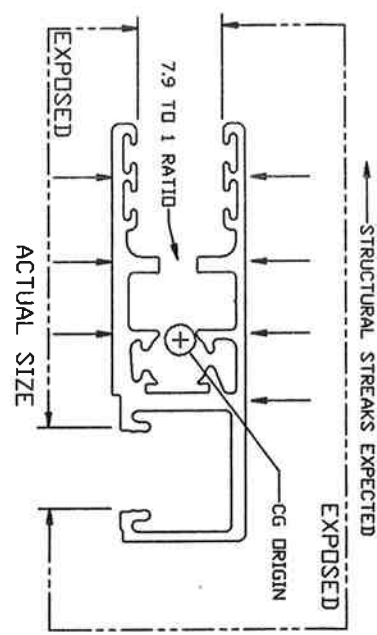
ACTUAL SIZE

ALUMINUM ASSOCIATION STANDARD TOLERANCES
APPLY UNLESS SPECIFIED OTHERWISE
UNSPECIFIED WALL THICKNESS .055
UNSPECIFIED RADIUS .016
DIFF. RATING 3

ESTAREA	.092	IN ²	DWN BY	G.B.	PRESS 2
EST.VT.	.110	LBS/FT.	CKD BY		CAV. 8
EST.PER.	2.729	IN	SCALE	2=1	BACK #40454
EXPD PER.	-	IN	CODE	-	BOL # 1115
FACTOR	25	IN	DATE	10-18-99	RATIO 75
C.C.D.	.670	IN	POCKET AREA	-	BLADE -
			ALLOY	6005-T5	

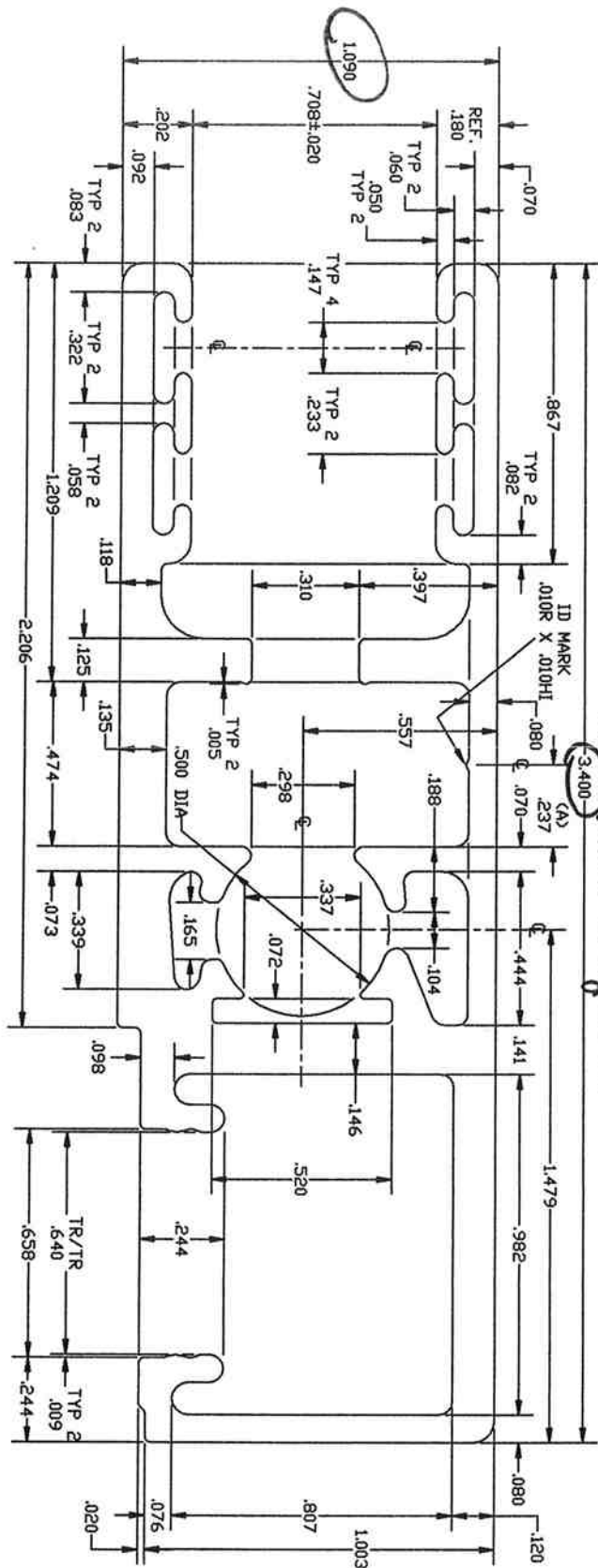
Caradon Indalex
a division of Caradon America, Inc.
GAINESVILLE, GEORGIA

CAS-45356	DIE NO.
DATE	SYM
REVISION	BY
REV	



ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTLA No. 20170-1
Date Verified: 4/16/10
Verified By: [Signature]



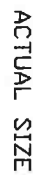
Standard Aluminum Association tolerances apply unless otherwise noted.				DIE NUMBER	REV
CUST PART #	TITLE BLOCK REV A	EUC	QMI-487	A	
CUST PART NAME: THICK WALL R & S SNAP COVER	REL. DATE 1-7-10 LB	ALLOY 6005-T5	FINISH 204-R1		
PROPOSAL (A) 1-7-10 LB					

THE ELECTRONIC GEOMETRY
IS TO GOVERN THE DIMENSIONS
FOR THIS SHAPE THEREFORE
SOME DIMENSIONS MAY NOT BE
SHOWN.

A	ID MARK LOCATION MOVED	1-15-10	LMB		
REV	DESCRIPTION OF REVISION	DATE	BY		
Standard Nominal Wall Thickness Tolerance Chart (a)					
for Circumferencing Circle Sizes Less than 10 inches					
Up thru 0.124	.006	0.250 - 0.499	.008	0.750 - 0.999	.010
0.125 - 0.249	.007	0.500 - 0.749	.009	1.000 - 1.499	.012
Structural values estimated for reference only.					
Circular					
Up thru 0.124	.006	0.250 - 0.499	.008	0.750 - 0.999	.010
0.125 - 0.249	.007	0.500 - 0.749	.009	1.000 - 1.499	.012
Rectangular					
Up thru 0.124	.006	0.250 - 0.499	.008	0.750 - 0.999	.010
0.125 - 0.249	.007	0.500 - 0.749	.009	1.000 - 1.499	.012

QMI-487		34294	
QMI ROLL SHUTTER		QMI ROLL SHUTTER SUPPLY	
1601 GLEN LAKE AVENUE			
ITASCA		IL	
60143			
UNRECORDED WALLS		MASS:	
UNRECORDED RAILS		EST PER:	
DATE:		EXP PER:	
DRAWN:		BUFF PER:	
SCALE:		CLASS:	
TMM BAR		Semi-Hollow	
P&D CODE:		C.C.D.:	
NO		90.69	
P&D AREA:		3.570	

WARRANTY:
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All Designs, plans, prints, or drawings of whatever kind prepared by Bonnell with respect to such products are and shall remain the sole property of Bonnell.



CERTIFIED TESTING LABORATORIES

CTLA No. 201103-1
Date Verified: 4/16/10
Verified By: [Signature]

[illegible]

Structural values estimated for reference only:							
Is:	$0.0200 \times 10^6 \text{ mm}^4$	.048	in^4	Is:	$2.776 \times 10^9 \text{ mm}^4$	.667	in^4
ISx:	$1.003 \times 10^3 \text{ mm}^3$	.061	in^3	ISy:	$5.192 \times 10^3 \text{ mm}^3$	.317	in^3
CGx:	19.91	784	mm	CGy:	53.47	2.105	mm

BONNEL

34294
D/B/A QMI ROLL SHUTTER SUPPLY
1661 GLEN LAKE AVENUE

ITASCA

15

143

UNRECORDED WALLS	mm	MASS:	1.123	kg/m	.755	lb/ft
		EST PER:	325.50	mm	12.815	in
UNRECORDED PAUL	in	.38R				
	mm	OUT PER:		mm		in
		.015R				
	in	EXP PER:		mm		in
DATE:	12/14/9	BUFF PER:		mm		in
DRAWN:	CUST/LMB	BUFF TURNS:		mm		in
SCALE:	3-1	CLASS:	200	mm	17	mm
THM BAR:	NO			mm		mm
				mm		mm
CRD CODE:	NO	C.C.D.:	92.66	mm	3.648	in
		PAD AREA:		mm ²		

Standard Aluminum Association tolerances apply unless otherwise noted.			DIE NUMBER	REV
CUST PART #	TITLE BLOCK: 9274	EUC	QMI-488	A
CUST PART NAME: THICK WALL R & S 2 PC, INNER HALF	QIM MOTO BLOCK (HARD)	199		
PROPOSAL: (A) 1-7-10 LB	REL. DATE 1-7-10 LB	ALLOY 6005-T5		
			FINISH 204-R1	



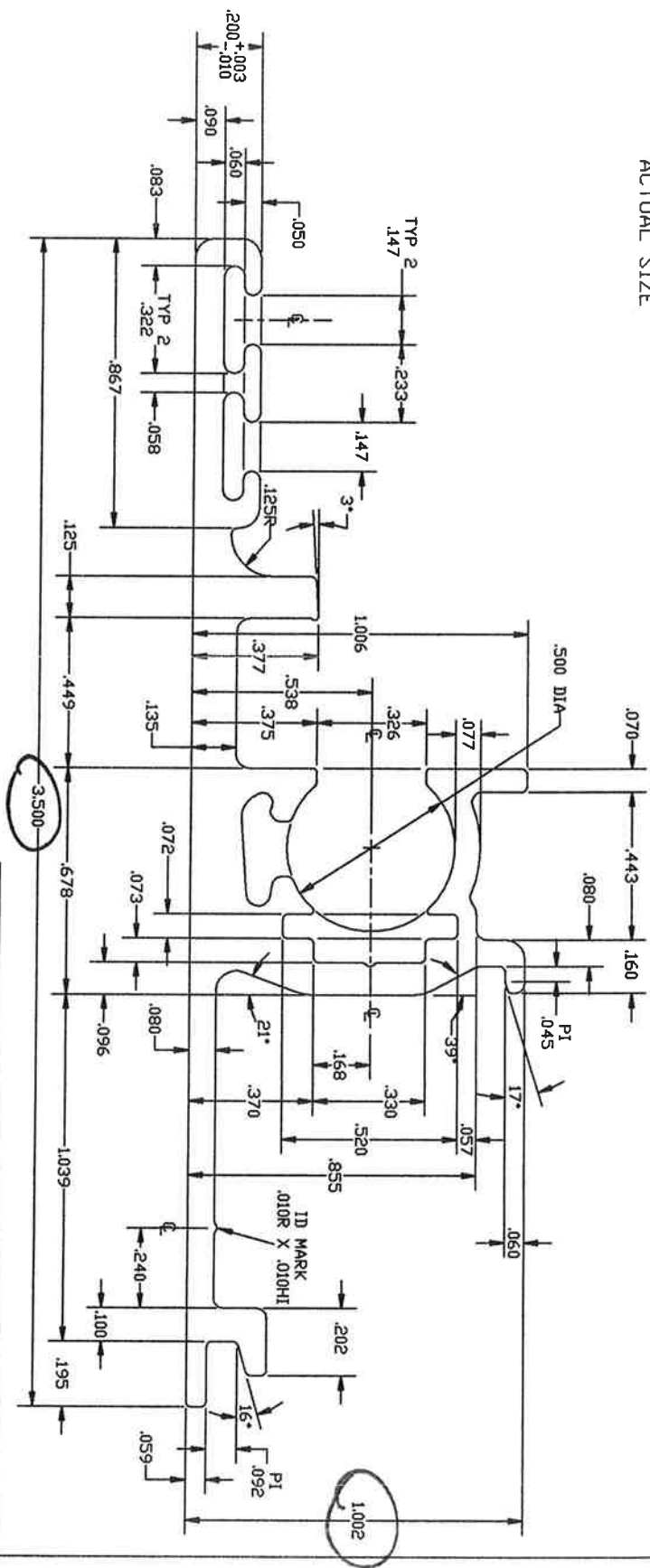
→ STRUCTURAL STREAKS EXPECTED

Date Verified: 4/16/11

Verified By:

THE ELECTRONIC GEOMETRY IS TO GOVERN THE DIMENSIONS FOR THIS SHAPE. THEREFORE SOME DIMENSIONS MAY NOT BE SHOWN.

ACTUAL SIZE



Bonnell warrants that the products it supplied by express shall be free from defects in workmanship and material and shall conform to all descriptions and specifications, as agreed between Bonnell and Purchaser. BONNELL DISCLAIMS ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHETHER CREATED BY CONTRACT, BY STATUTE OR OTHERWISE BY OPERATION OF LAW, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. PURCHASER'S DESIGNS, PLANS, DRAWINGS, SPECIFICATIONS AND REQUIREMENTS.

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Standard Nominal Wall Thickness Tolerance Chart (#)					
for Circumscribing Circle Sizes Less than 10 inches					
Up thru 0.124	.006	0.250 - 0.499	.008	0.750 - 0.999	.010
0.125 - 0.249	.007	0.500 - 0.749	.009		
				hollows 10% .010 min.	.060 max.
				CGX:	
Lx:	$.0208 \times 10^6 \text{ in}^4$	.050 in ⁴	1y:	$.1940 \times 10^6 \text{ in}^4$	.466 in ⁴
Sx:	$1.056 \times 10^3 \text{ mm}^3$	.064 in ³	Sy:	$4.283 \times 10^3 \text{ mm}^3$	.261 in ³
	19.71 mm	.776 in	CGy:	45.29 mm	1.783 in

Webster Hardware rating = 12

ОМΠ-489



BONNEL

SCA	IL	60143
-----	----	-------

ITASCIA

1

10

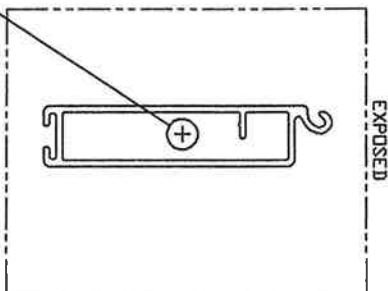
12

601

43

34294
D/B/A QMI ROLL SHUTTER SUPPLY
1661 GLEN LAKE AVENUE

UNSPECIFIED WALLS	mm	MASS:	1.189	kg/m ²
UNSPECIFIED ROOM	m	EST PER:	339.19	m ²
	mm	OUT PER:	13.354	m
	mm	EXP PER:		m
DATE:	mm	01SR		mm
	mm	12/15/9		mm
DRAWN:	mm	BUFF PER:		mm
SCALE:	mm	CLAS:	Solid	mm
THICK BAR:	mm	CLAS:	17	mm
P&D CODE:	mm	CLAS:	92.50	mm
	mm	P&D AREA	3.642	mm ²



Standard Aluminum Association tolerances apply unless otherwise noted.									
CUST PART #		TITLE BLOCK DATA		DIE NUMBER		REV			
CUST PART NAME: AL7 BASE SLAT									
PROPOSAL:		REL. DATE 7/1/8-TMB		ALLOY 6005-T5		FINISH PAINT			

34294 OMI ROLL SHUTTER
D/B/A OMI ROLL SHUTTER SUPPLY
1661 GLEN LAKE AVENUE
ITASCA IL 60143

ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CG ORIGIN

CTI
ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

CTLA No. 26172-1
Date Verified: 4/16/10
Verified By: [Signature]

UNREGISTERED WALLS	1.27 mm	MASS:	.523 mm	352 mm
UNREGISTERED DOOR	.050 mm	EST PER:	285.93 mm	11.257 mm
AIR mm	OUT PER:	163.47 mm	6.436 mm	
DATE:	6/23/08	EXP PER:		
DRAWN:	CUST/TMB	BUFF TURNS:		
SCALE:	3-1	FACTOR:	546	32
THIN BAR:	NO	C.C.D.:	60.41 mm	
P&D CODE:	NO	P&D AREA:	2.378 mm	

WARRANTY:

Bonnell warrants that the product(s) supplied by Bonnell shall be free from defects in workmanship and material and shall conform to all descriptions and specifications, as agreed between Bonnell and Purchaser. BONNELL DISCLAIMS ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHETHER CREATED BY CONTRACT, BY STATUTE OR OTHERWISE BY OPERATION OF LAW, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. PURCHASER'S DESIGNS, PLANS, DRAWINGS, SPECIFICATIONS AND REQUIREMENTS.

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All Designs, plans, prints, or drawings of whatever kind prepared by Bonnell with respect to such products are and shall remain the sole property of Bonnell.

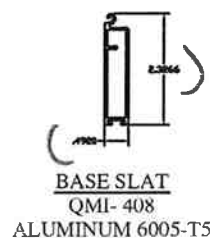
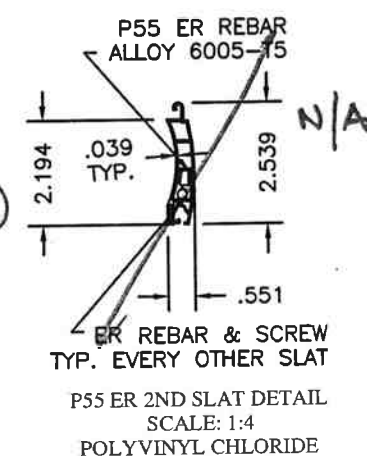
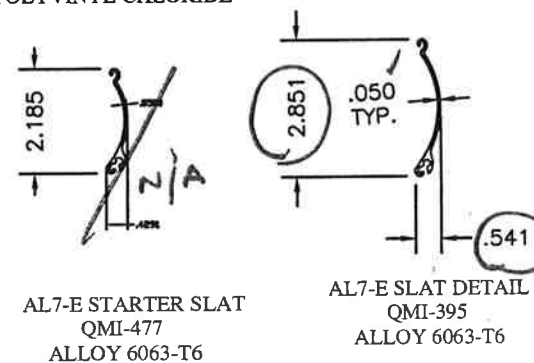
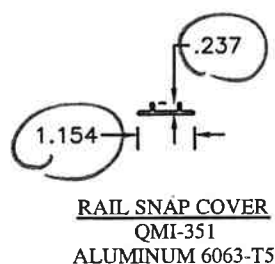
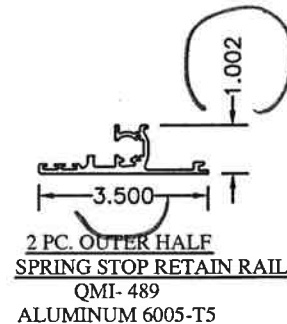
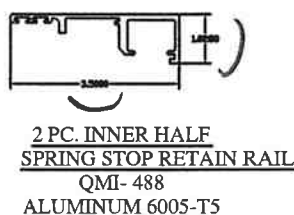
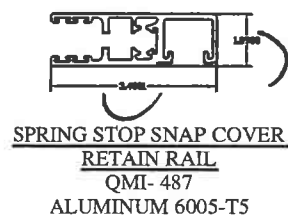
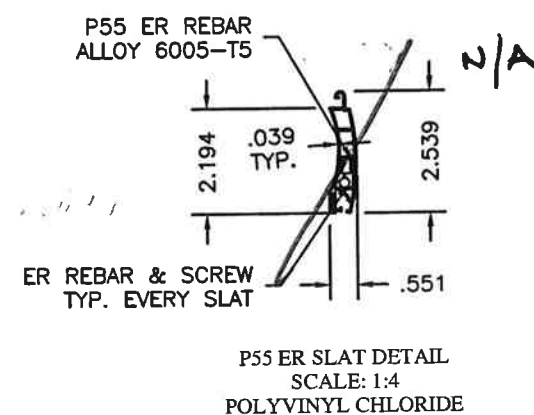
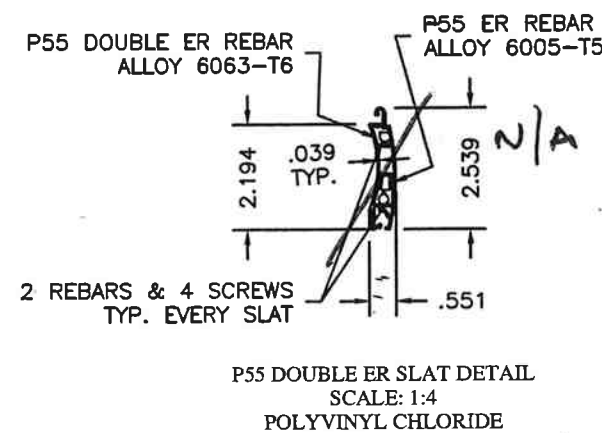
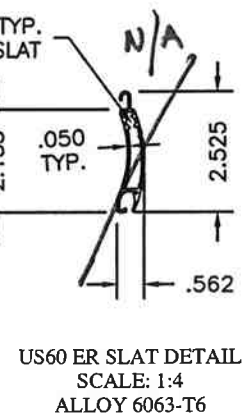
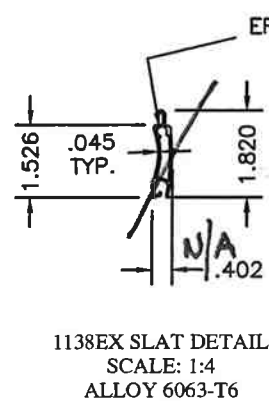
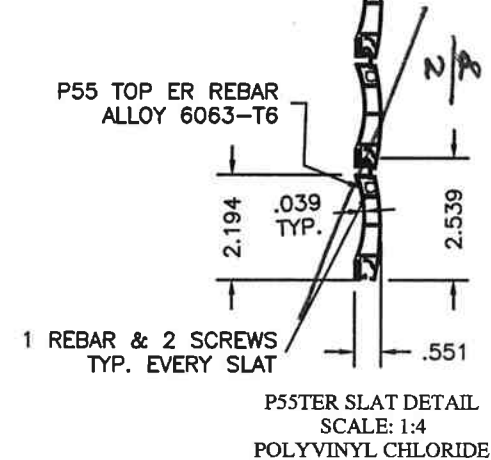
HVHZ AND VERIFICATION TEST SHUTTERS for FBC STATEWIDE APPROVAL (HVHZ AND NHVHZ)

- Specimen 4
Specimen 5
- 1) EA 8' tall AL7-E shutter 233" rail to rail in width, tested at design of 35 PSF. (TAS 201, TAS 202, & TAS 203)
 - 2) EA 8' tall AL7-E shutter 102" rail to rail in width, tested at design of ~~125~~ 150 PSF. (TAS 201, TAS 202, & TAS 203)
 - N/A 3) 1) EA 8' tall shutter with 32" in height of US60ER, 1138ER, and P55DER at 156" width, design 30 PSF. (TAS 201, TAS 202, & TAS 203)
 - N/A 4) 1) EA* 8' tall shutter with 32" in height of P55TER, P55ER 2nd, and P55ER at 156" width at design 30 PSF. (TAS 201, TAS 202, & TAS 203)
 - N/A 5) 1) EA 8' tall shutter with 32" in height of US60ER, 1138ER, and P55DER at 102" width at design 100 PSF. (TAS 201, TAS 202, & TAS 203)
 - N/A 6) 1) EA* 8' tall shutter with 32" in height of P55TER, P55ER 2nd, and P55ER at 69" width at design 100 PSF. (TAS 201, TAS 202, & TAS 203)

*(Impact P55TER only)

Specimen 687) EA 8' Tall AL7-E shutter 102" rail to rail in width, tested at Design of 100 PSF.

Specimen 948) EA 8' Tall AL7-E shutter 102" rail to rail in width, tested at Design of 100 PSF.



NOTES:

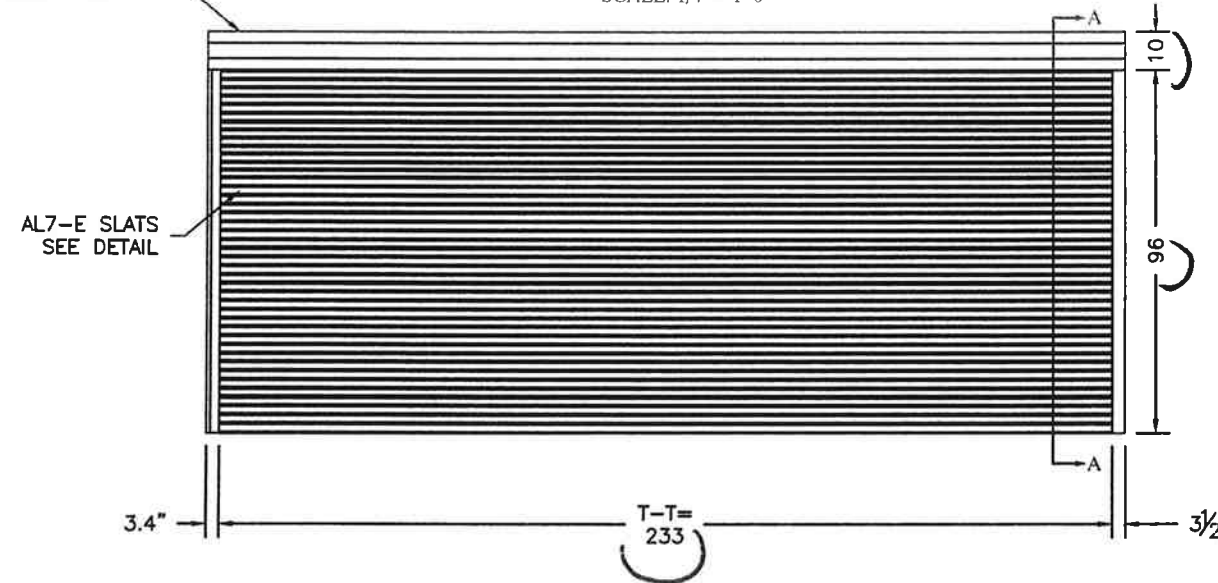
1. TESTING SHALL BE PER FBC AND TAS PROTOCOLS SUCH THAT THE FINAL TESTING REPORT SATISFIES OR EXCEEDS FBC/ TAS TESTING PROTOCOLS (WIND ZONE 4).
2. DESIGN LOADING PRESSURES VARY BY SAMPLE WITH POSITIVE AND NEGATIVE PRESSURES EQUAL. SEE ADJACENT TABLE.
3. SHUTTERS #2 THRU #6 HAVE A BUCK OPENING $\frac{1}{16}$ " LESS THAN THE RAIL TO RAIL (T-T) DIMENSION.
4. SHUTTER NUMBER 1 HAS A BUCK OPENING OF 230".



CTLA No. 2017w-1
Date Verified: 4/16/18
Verified By: [Signature]

DRAWN: DLF		DATE: 12-08-09	TITLE: HVHZ & VERIFICATION TESTING AL7-E SINGLE WALL EXTRUDED ALUMINUM SLAT		THIRD ANGLE PROJECTION		REVISION <table><tr><th>REV</th><th>DESCRIPTION</th></tr><tr><td>A</td><td></td></tr><tr><td>B</td><td></td></tr><tr><td>C</td><td></td></tr><tr><td>D</td><td></td></tr><tr><td>E</td><td></td></tr></table>		REV	DESCRIPTION	A		B		C		D		E	
REV	DESCRIPTION																			
A																				
B																				
C																				
D																				
E																				
CHECKED:		DATE:																		
MEASURER:		DATE:																		
APPROVED:		DATE:																		
SIZE: B	DRAWING NO: S-1209-EG	REV: -																		
SCALE: AS NOTED	SHEET 1	OF 5																		

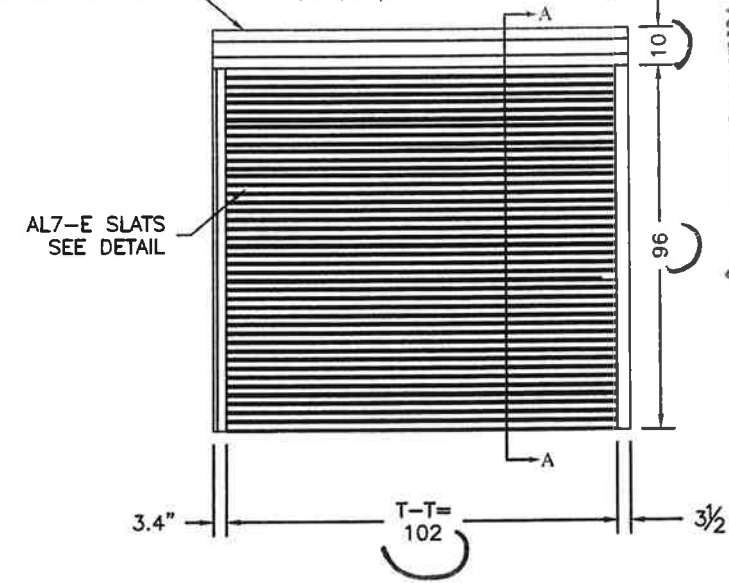
SHUTTER BOX 10"
SHUTTER #1 AL7-E
SCALE: 1/4" = 1'-0"



SEE DETAIL "A"

SEE DETAIL "B"

SHUTTER BOX 10"
SHUTTER #2 AL7-E
SCALE: 1/4" = 1'-0"

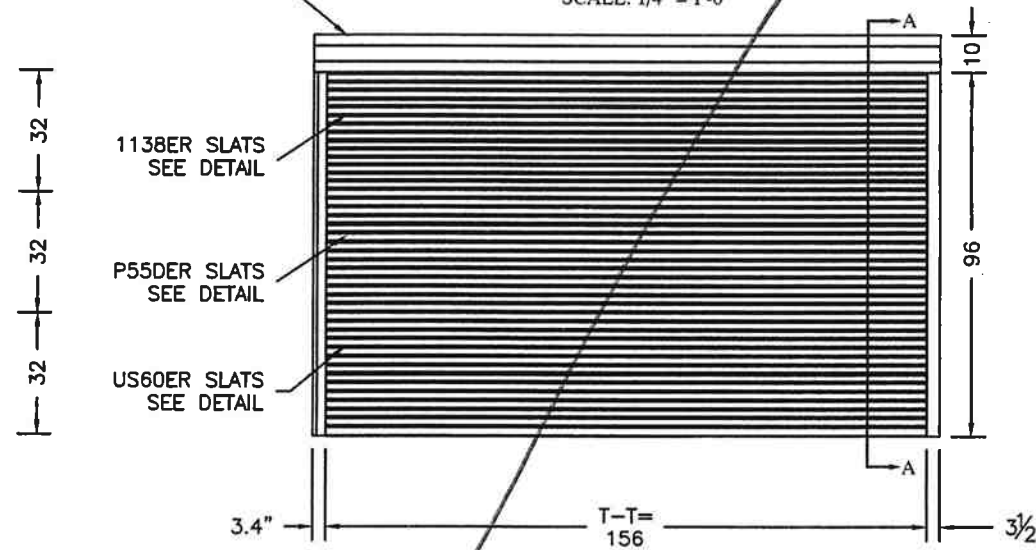


SEE DETAIL "C"

SEE DETAIL "D"

*Note #7 both guides see detail "D"
*Note #8 both guides see detail "C"

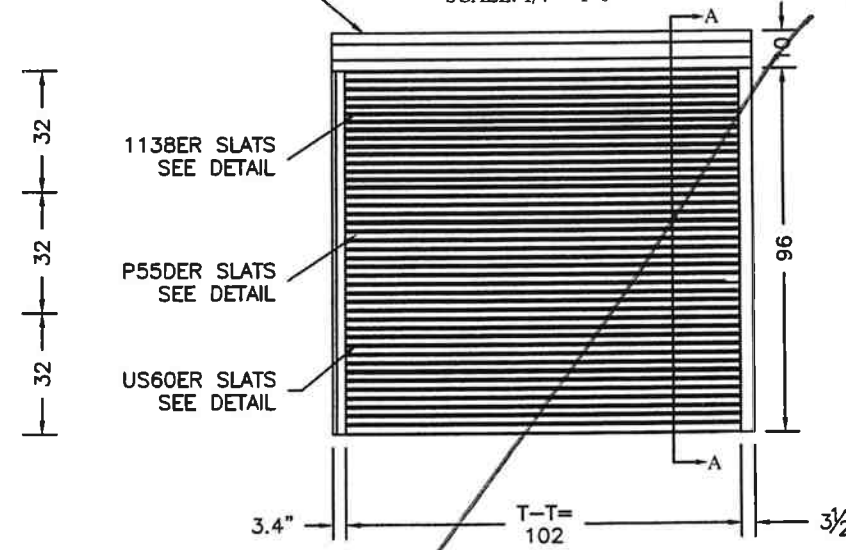
SHUTTER BOX 10"
SHUTTER #3 (US60ER, 1138ER & P55DER)
SCALE: 1/4" = 1'-0"



SEE DETAIL "C"

SEE DETAIL "D"

SHUTTER BOX 10"
SHUTTER #5 (US60ER, 1138ER & P55DER)
SCALE: 1/4" = 1'-0"



SEE DETAIL "C"

SEE DETAIL "D"

CTLA No. 201703-1
Date Verified: 4/16/10
Verified By: [Signature]



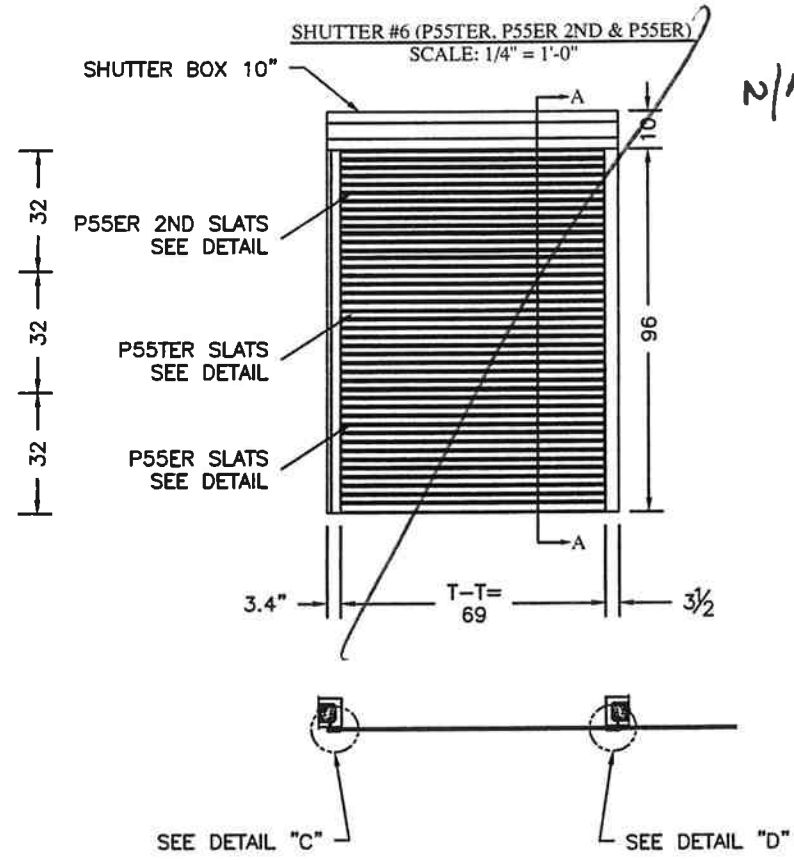
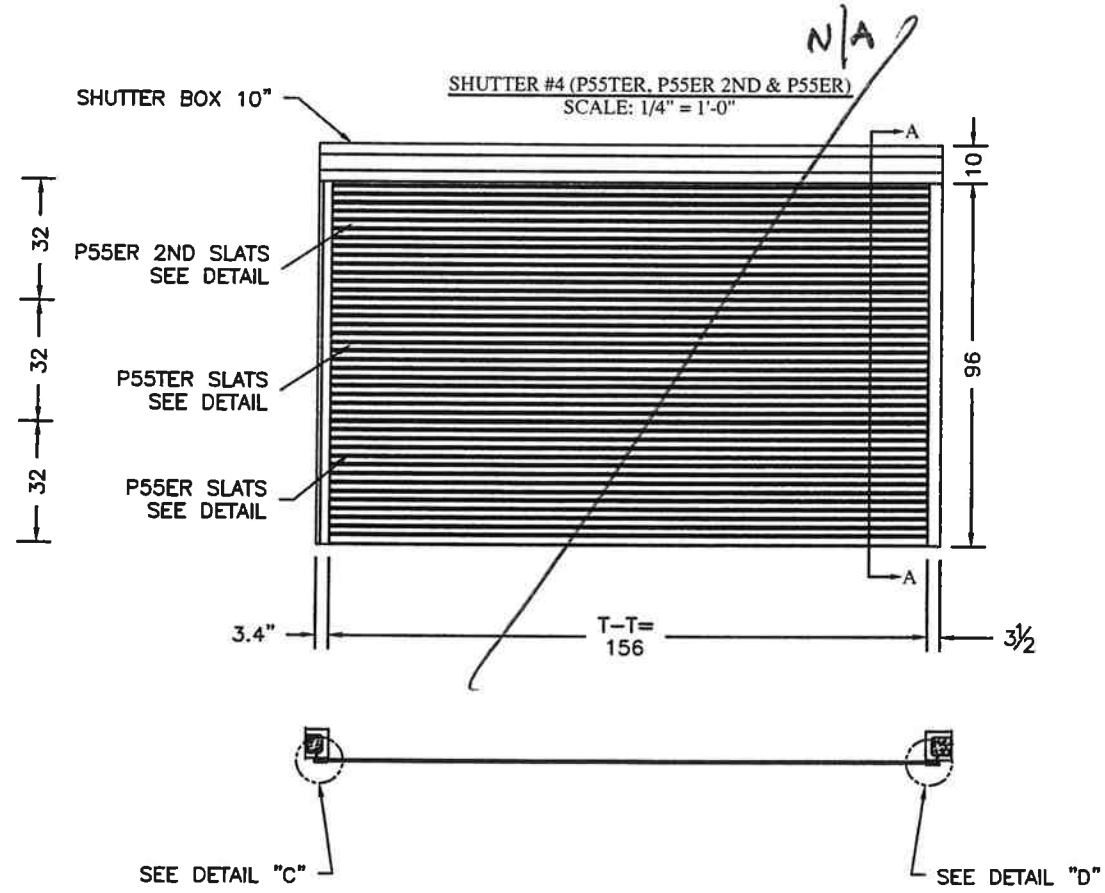
REVISION		DESCRIPTION	
REV	DESCRIPTION	REV	DESCRIPTION
A		A	
B		B	
C		C	
D		D	
E		E	

DRAWN: DLF		DATE: 12-08-09
CHECKED:		DATE:
MEASURED:		DATE:
APPROVED:		DATE:

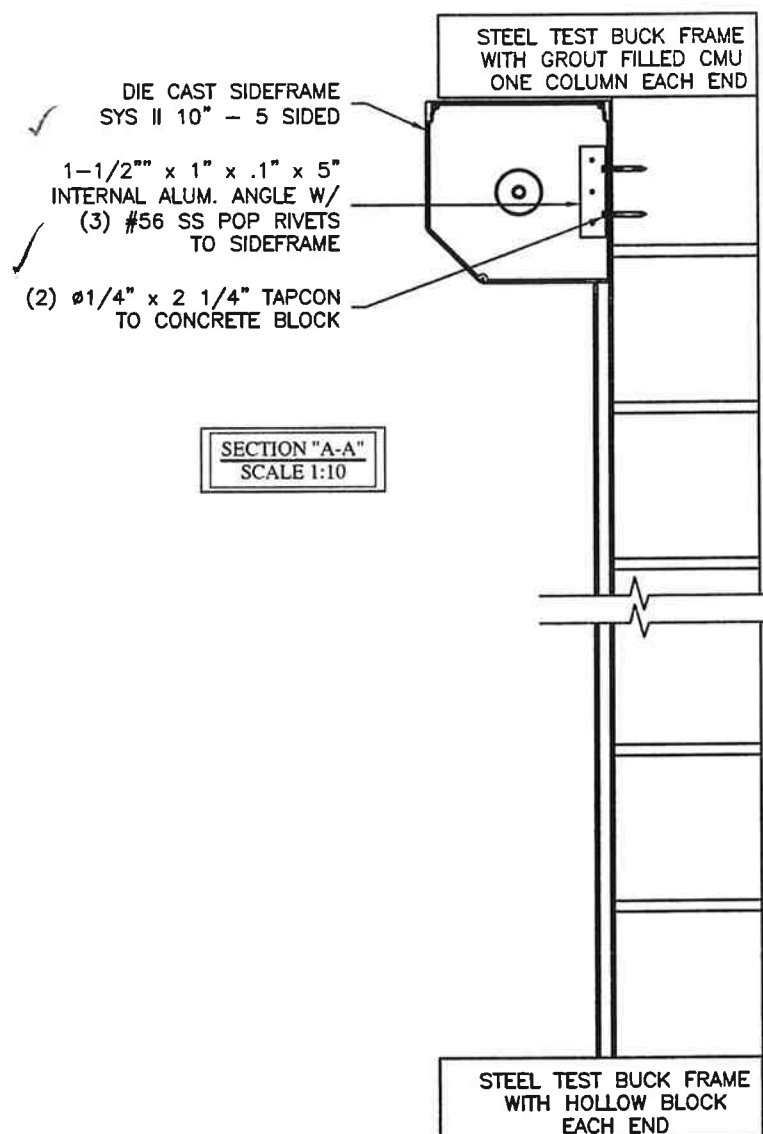
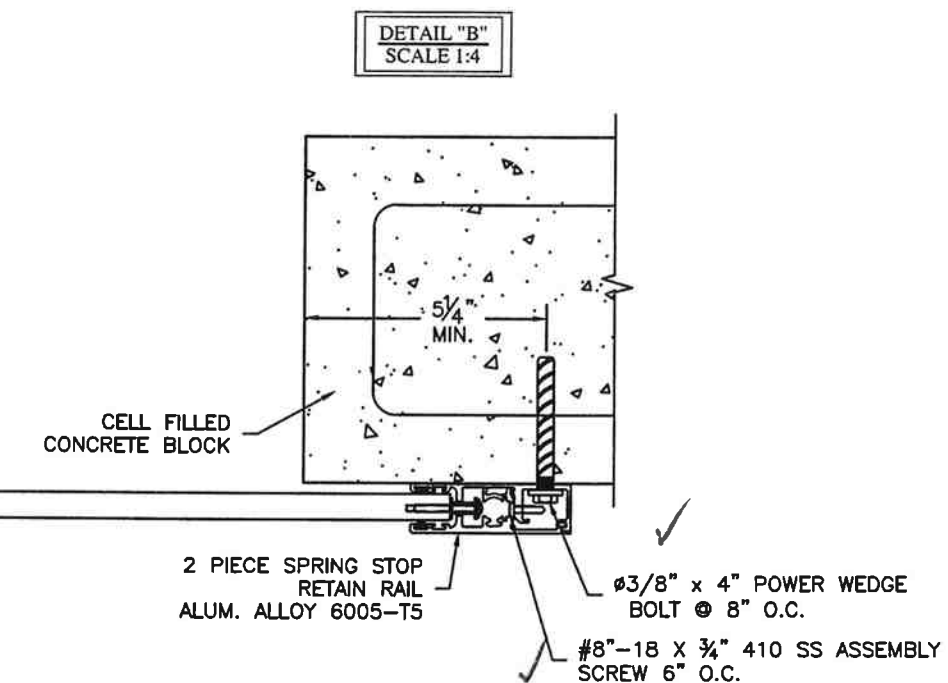
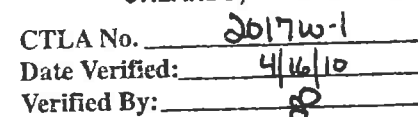
DRAWING NO: S-1209-EG		REV: -
SCALE: AS NOTED		SHEET 2 OF 5

10601 OAK STREET N.E. ST. PETERSBURG, FL 33716	
Rollaway® STORM AND SECURITY SHUTTERS	
COPYRIGHT © 2002 VALCO ENTERPRISES, LTD.	
TITLE: HVHZ & VERIFICATION TESTING	
AL7-E SINGLE WALL	
EXTRUDED ALUMINUM SLAT	

CTLA No. 201705-1
 Date Verified: 4/16/10
 Verified By: [Signature]



DRAWN: DLF		DATE: 12-08-09	 STORM AND SECURITY SYSTEMS COPYRIGHT © 2002 VALCO ENTERPRISES, LTD. TITLE: HVHZ & VERIFICATION TESTING AL7-E SINGLE WALL EXTRUDED ALUMINUM SLAT		 THIRD ANGLE PROJECTION	REVISION	
CHECKED:	DATE:	REV				DESCRIPTION	
MEASURER:	DATE:	A					
APPROVED:	DATE:	B					
		C					
		D					
		E					
SCALE: AS NOTED	SHEET 3	OF 5					
SIZE: B	DRAWING NO: S-1209-EG	REV: -					



DRAWN:	DLF	DATE:	12-08-09
CHECKED:		DATE:	
MEASURED:		DATE:	
APPROVED:		DATE:	
SIZE:	B	DRAWING NO:	S-1209-EG
		REV:	-



Roll-a-way
FORM AND SECURITY SHIELDS

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TITLE:
HVHZ & VERIFICATION TESTING
AL7-E SINGLE WALL
EXTRUDED ALUMINUM SLAT

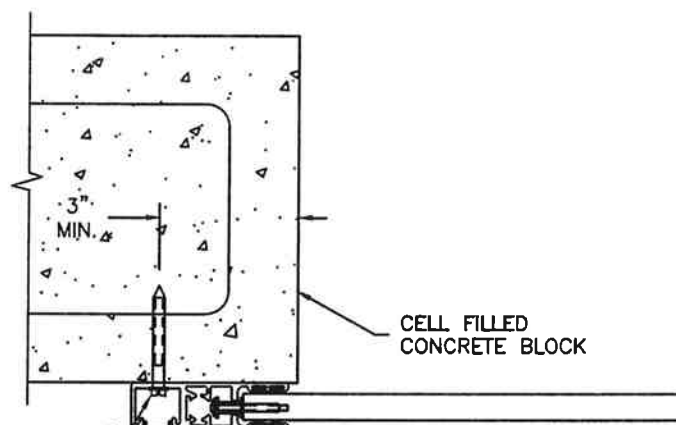
10601 OAK STREET N.E.
ST. PETERSBURG, FL 33716

THIRD ANGLE PROJECTION		REVISION
		REV DESCRIPTION
		A
		B
		C
		D
		E



ARCHITECTURAL DIVISION
7252 NARCOOSSEE ROAD
ORLANDO, FLORIDA 32822

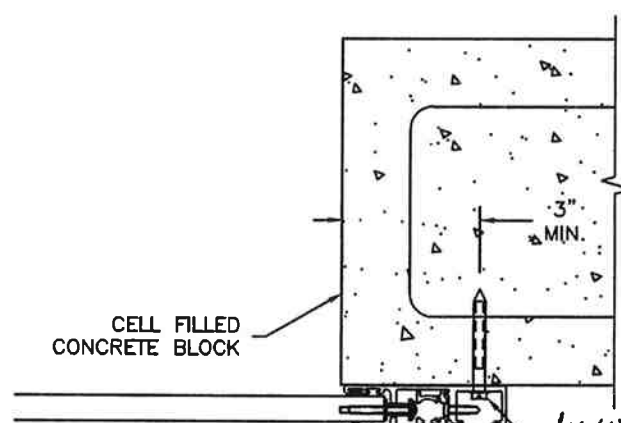
CTLA No. 2017W-1
Date Verified: 4/16/10
Verified By: JS



CELL FILLED
CONCRETE BLOCK

✓ $\varnothing 1/4" \times 2-1/4"$ TAPCON
SHUTTER #2 & #5 $\odot$ 3" O.C.
SHUTTER #3 & #4 $\odot$ 4" O.C.
SHUTTER # 6 AT 5" O.C.

SNAP COVER WITH
- SPRING STOP RETAIN RAIL
ALUM. ALLOY 6005-T5



CELL FILLED
CONCRETE BLOCK

2 PIECE SPRING STOP
RETAIN RAIL
ALUM. ALLOY 6005-T5

✓ Ø1/4" x 2-1/4" TAPCON
SHUTTER #2 & #5 @ 3" O.C.
SHUTTER #3 & #4 @ 4" O.C.
SHUTTER # 6 AT 5" O.C.

#8"-18 X 3/4" 410 SS ASSEMBLY SCREW
12" O.C. SHUTTERS #3, #4, & #6
7" O.C. SHUTTER #2 ✓
8" O.C. SHUTTER #5

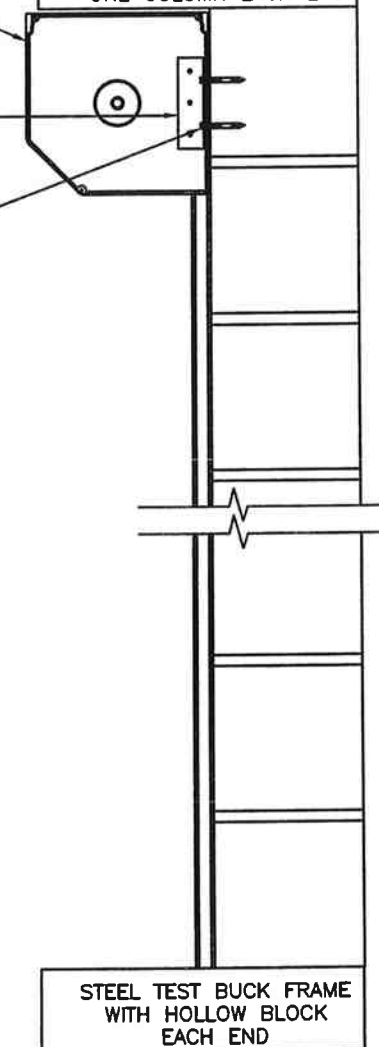
SECTION "A-A"
SCALE 1:10

DIE CAST SIDEFAME
SYS II 10" - 5 SIDED

1-1/2" x 1" x .1" x 5"
INTERNAL ALUM. ANGLE W/
(3) #56 SS POP RIVETS
TO SIDEFAME

(2) $\phi 1/4"$ x $2\ 1/4"$ TAPCON
TO CONCRETE BLOCK

STEEL TEST BUCK FRAME
WITH GROUT FILLED CMU
ONE COLUMN EACH END



STEEL TEST BUCK FRAME
WITH HOLLOW BLOCK
EACH END

DRAWN: DJF		DATE: 12-08-09	
CHECKED:		DATE:	
MEASURED:		DATE:	
APPROVED:		DATE:	
SIZE: B		DRAWING NO: S-1209-EG	REV: -
SCALE: A.C. NOTED		SHEET 5	OF 5



Poll-a-way
STORM AND SECURITY SOLUTIONS

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10601 OAK STREET N.E. ST. PETERSBURG, FL 33716		THIRD ANGLE PROJECTION	
TITLE: HVHZ & VERIFICATION TESTING AL7-E SINGLE WALL EXTRUDED ALUMINUM SLAT			
REV: A		REVISION	
REV: B		DESCRIPTION	
REV: C			
REV: D			
REV: E			