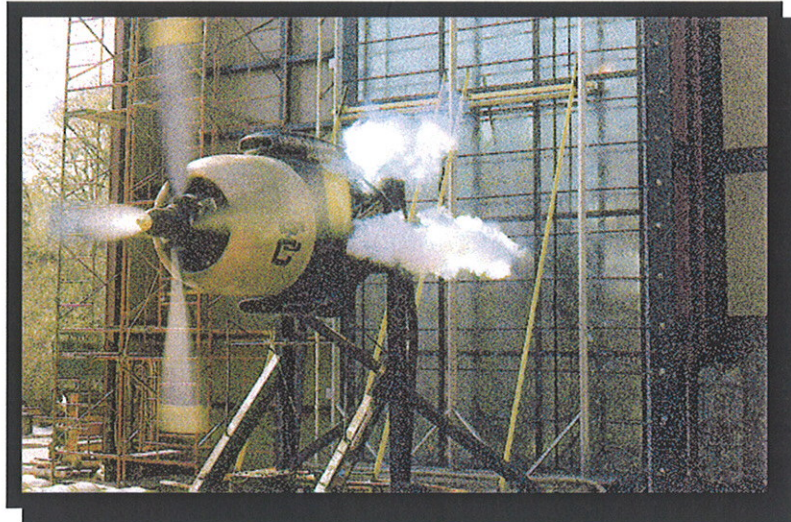




CONSTRUCTION CONSULTING LABORATORY, *INTERNATIONAL*



---

**TEST REPORT:**

**DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT #CCLI-10-210**

**November 9, 2010**

---

Prepared for:

**US ALUMINUM CORPORATION  
200 Singleton Drive  
Waxahachie, TX 75165**



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010

## TABLE OF CONTENTS

|                                     |   |
|-------------------------------------|---|
| 1. PROJECT DATA.....                | 1 |
| 2. SUMMARY .....                    | 1 |
| 3. IMPACT ACCEPTANCE CRITERIA ..... | 1 |
| 4. TEST SPECIMEN .....              | 1 |
| 5. PERFORMANCE RESULTS .....        | 3 |
| 6. DISCLAIMER .....                 | 6 |

### APPENDICES:

APPENDIX A: UNITED STATES ALUMINUM SERIES 7600 PROJECT OUT WINDOW DRAWINGS. Refer to drawings in Appendix A. This report is not complete unless this drawing is stamped and initialed by CCLI as illustrated below.

| DRAWING                        | PART NO. | DATE     | STAMPED AS ILLUSTRATED                                                                                                                                                                                                                                                                       |
|--------------------------------|----------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bill of Materials and Elev.    |          |          |  CONSTRUCTION<br>CONSULTING<br>LABORATORY,<br>INTERNATIONAL<br>1601 Luna Road<br>Carrollton, Texas 75006<br>Phone (972) 242-0556<br>Report# <u>10-210</u> Date <u>11-9-10</u><br>Reviewed BY <u>CCL</u> |
| Series C7600-23 Page 2 of 4    |          | 9/3/10   |                                                                                                                                                                                                                                                                                              |
| Series C7600-23 Page 3 of 4    |          | 9/3/10   |                                                                                                                                                                                                                                                                                              |
| Series C7600-23 Page 4 of 4    |          | 9/3/10   |                                                                                                                                                                                                                                                                                              |
| Head, Jamb Deep Pocket Mullion | IG626    | 2/23/06  |                                                                                                                                                                                                                                                                                              |
| Filler                         | IG100    | 2/22/06  |                                                                                                                                                                                                                                                                                              |
| Sill                           | IG672    | 10/18/01 |                                                                                                                                                                                                                                                                                              |
| Glass Stop                     | IG663    | 10/18/01 |                                                                                                                                                                                                                                                                                              |
| Subsill                        | IG570    | 8/22/01  |                                                                                                                                                                                                                                                                                              |
| Tube                           | J-175    | 11/25/64 |                                                                                                                                                                                                                                                                                              |

APPENDIX B: IMPACT DIAGRAM

APPENDIX C: DEFLECTION DIAGRAM

|                            |                    |
|----------------------------|--------------------|
| Report No.                 | CCLI-10-210        |
| DC Notification Number:    | CCLI-10-004        |
| Date:                      | October 12, 2010   |
| CCLI Certification Number: | 06.0515.02         |
| Test Start Date:           | September 15, 2010 |
| Test End Date:             | September 17, 2010 |



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010

Page 1 of 6

## 1. PROJECT DATA

**Project:** Dade County TAS 201, 202 & 203

**Date(s) of Testing:** September 15-17, 2010

**Tested For:** United States Aluminum  
200 Singleton Drive  
Waxahachie, TX 75165

| Witnessed By  | (All or Partial Viewing) |               |                     |
|---------------|--------------------------|---------------|---------------------|
| U.S. Aluminum | Terry Hopgood            |               |                     |
| CCLI          | Jeffrey Crump            | Chevis Wilson | Abdol Rezadad, P.E. |

## 2. SUMMARY

Tests were conducted in accordance with Testing Application Standard, Protocol 201, 202 & 203. Specimens were impacted with a 96", 9 lb. large missile in accordance with TAS 201, cycled at a Design load of 75 psf positive and 75 psf negative in accordance with TAS 203 and achieved a positive test load of 112.5 psf and a negative test load of 112.5 psf in accordance with TAS 202. Tests were conducted at Construction Consulting Laboratory, *International* (CCLI) in Carrollton, TX.

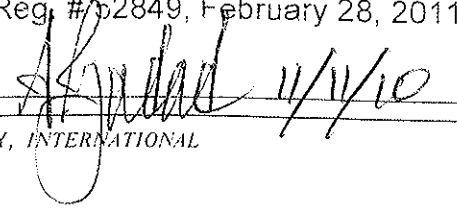
## 3. IMPACT ACCEPTANCE CRITERIA

The test specimen shall resist the large missile impact with no tear formed longer than 5" (130mm) and wider than 1mm ( $1/16$ ") through which air can pass or no opening formed through which a 3" (76mm) diameter solid sphere can freely pass when evaluated upon completion of missile impacts and test loading program.

## 4. TEST SPECIMEN

**Product Type:** Aluminum Project Out Window, **Product Drawings, Appendix A**  
**Series Model:** Series 7600  
**Specifications:** TAS 201, 202 & 203 Large Type-D Missile  
**Design:** ASTM E 1886-05 (+75 / -75)  
**Frame Size:** 1524mm x 813mm (5'-0"x 2'-8")  
**Vent. Size:** 1514mm x 803mm (4'-11 $5/8$ " x 2'-7 $5/8$ ")  
**Daylight Opening:** 1413 x 702 (55.625" x 27.625")  
**Configuration:** X

Florida Registered Professional Engineers Review: Reg. #52849, February 28, 2011 –  
Abdol Rezadad, P.E.

Signature: 

CONSTRUCTION CONSULTING LABORATORY, *INTERNATIONAL*



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010  
Page 2 of 6

**WEATHER-STRIP:** 4.76mm ( $\frac{3}{16}$ ") dual durometer bulb located at the exterior face of frame interior leg, full perimeter. Dual durometer bulb 4.76mm ( $\frac{3}{16}$ ") located at interior face of vent, full perimeter. Continuous finger gasket (part #NP810) located at the exterior lateral face of vent perimeter.

**HARDWARE:** One (1) multi-point lock actuated handle located at center of vent bottom rail. Three (3) lock buttons located at lock slide bar, (unit #1 AMC aluminum slide bar, unit #2 AMC 6/6 nylon slide bar, unit #3 Intex aluminum slide bar). Lock keepers located 63.5mm ( $2\frac{1}{2}$ ") from one jamb and 152.4mm (6") from the other jamb with one at center of sill. Keepers attached with two (2) #10-24 x  $\frac{3}{8}$ " screws. Three (3) snubber sets located 152.4mm (6") from each end and one at center at vent top rail and frame head. Snubbers at vent are attached with aluminum adapter and two (2) #10 x  $\frac{1}{2}$ " PHL PH SMS and snubbers at frame are attached with two (2) #10 x  $\frac{1}{2}$ " PHL PH SMS. Four bar friction hinge with hinge adapter (part #61585 or AMC #1402 L or R) located at frame jambs attached to each jamb with three (3) #10 x  $\frac{1}{2}$ " screws.

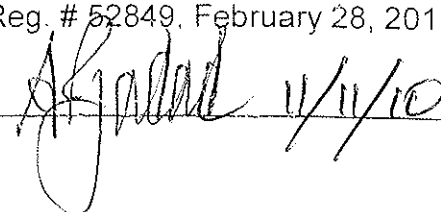
**GLASS:** 1" overall thickness sealed insulating glass (SIG). Exterior, 1 pc 4.76mm ( $\frac{3}{16}$ ") heat strengthened glass, 7.93mm ( $\frac{5}{16}$ ") air space, Interior, 1 pc. 4.76mm ( $\frac{3}{16}$ ") heat strengthened glass, 2.28 mm (.090") Sentry Glas® laminate and 1 pc. 4.76mm ( $\frac{3}{16}$ ") heat strengthened glass. Air spacer consists of molded aluminum and desiccant.

**GLAZING:** Exterior glazed with GT 900 glazing tape and silicone at interior and lateral face of glass. Unit #1 and #2 used Tremco Proglaze SSG at the interior face of glass and Tremco Spectrum 2 at the lateral face of glass. Unit #3 used Dow 995 at the interior face of glass and Dow 795 at the lateral face of glass.

**WEEP ARRANGEMENT:** 9.52mm ( $\frac{3}{8}$ ") diameter weep holes spaced 152.4mm (6") from each end of frame subsill.

**SEALANT:** Sealant at all frame corners and vent corners. Attachment screws sealed. Frame members sealed to sub-frame at the interior. Subsill sealed at interior and exterior at frame sill. Sub-frame filler sealed continuous at all sub-frame members.

Florida Registered Professional Engineers Review: Reg. # 52849, February 28, 2011 –  
Abdol Rezadad, P.E.

Signature: 



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010  
Page 3 of 6

**INSTALLATION FEATURES:** Frame sill attached to aluminum sub-frame with #12 x 19.05mm ( $\frac{3}{4}$ ") screws spaced 101.6mm (4") from each end and on 304.8mm (12") centers. Frame filler part # J-175 attached to sub-frame members at head, sill, and jambs with #10 x 44.45mm ( $1\frac{3}{4}$ ") screws spaced 152.4mm (6") from each end and on 308.8mm (12") centers. Sub-frame attached to SPF, nominal 50.8mm x 203.2mm (2" x 8") test buck with 9.52mm ( $\frac{3}{8}$ ") x 114.3 (4 $\frac{1}{2}$ ") lag bolt, 152.4mm (6") from each end and 304.8mm (12") on center.

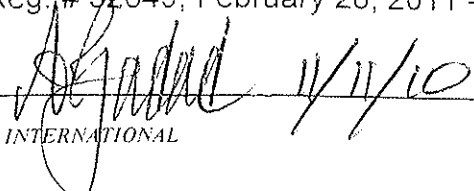
**OTHER FEATURES:** Vent members are thermally broken with polyurethane. Vent corners are mitered and crimped with one aluminum corner key (part #VN524) per connection. Frame members are coped, butted, and attached with two (2) #8 x  $\frac{3}{4}$ " PHSMS per connection. Frame members attached to sub frame members with one (1) #14 x  $1\frac{1}{2}$ " PHL PH SMS spaced 101.6mm (4") from each end and 304.8mm (12") on center. Frame sill attached to subsill with #12AB x  $\frac{3}{4}$ " screws, 101.6mm (4") from each end and 304.8mm (12") O.C. Filler (part #J-175) attached to sub-frame members with #10 x 44.45mm ( $1\frac{3}{4}$ ") PHL PH SMS, spaced 152.4mm (6") from each end and 304.8mm (12") on center

**Specification: Testing Application Standard, Protocol 202.**

## 5. PERFORMANCE RESULTS

| <u>Title of Test</u>                                   | <u>Test Method</u>  | <u>Measured</u>                         | <u>Allowed</u>                         |
|--------------------------------------------------------|---------------------|-----------------------------------------|----------------------------------------|
| Uniform Deflection                                     | ASTM E 330-02       |                                         |                                        |
| @ 3600 Pa (75.0 psf) P.O. Stile                        |                     |                                         |                                        |
| -Positive                                              |                     | .508mm (.02")                           | 4.57mm (0.180")                        |
| -Negative                                              |                     | 1.27mm (.05")                           | 4.57mm (0.180")                        |
| Uniform Deflection                                     | ASTM E 330-02       |                                         |                                        |
| @ 3600 Pa (75.0 psf) P.O. Top Rail in between Snubbers |                     |                                         |                                        |
| -Positive                                              |                     | .762mm (.03")                           | 3.40mm (0.134")                        |
| -Negative                                              |                     | 2.03mm (.08")                           | 3.40mm (0.134")                        |
| Air Infiltration                                       | ASTM E 283-04       |                                         |                                        |
| @ 300 Pa (6.24 psf)                                    |                     | .10 l/s·m <sup>2</sup><br>(0.02 cfm/sf) | .5 l/s·m <sup>2</sup><br>(0.10 cfm/sf) |
| Water Resistance                                       | ASTM E 547 & 331-00 |                                         |                                        |
| @ 580 Pa (12.00 psf)                                   |                     | No Leakage                              | No Leakage                             |

Florida Registered Professional Engineers Review: Reg. # 52849, February 28, 2011 –  
Abdol Rezadad, P.E.

Signature: 



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010  
Page 4 of 6

| <u>Title of Test</u>                                   | <u>Test Method</u> | <u>Measured</u> | <u>Allowed</u>  |
|--------------------------------------------------------|--------------------|-----------------|-----------------|
| Uniform Deflection                                     | ASTM E 330-02      |                 |                 |
| @ 3600 Pa (75.0 psf) P.O. Stile                        |                    |                 |                 |
| -Positive                                              |                    | .762mm (.03")   | 4.57mm (0.180") |
| -Negative                                              |                    | 1.77mm (.07")   | 4.57mm (0.180") |
| Uniform Deflection                                     | ASTM E 330-02      |                 |                 |
| @ 3600 Pa (75.0 psf) P.O. Top Rail in between Snubbers |                    |                 |                 |
| -Positive                                              |                    | .762mm (.03")   | 3.40mm (0.134") |
| -Negative                                              |                    | 2.28mm (.09")   | 3.40mm (0.134") |
| Uniform Structural                                     | ASTM E 330-02      |                 |                 |
| -Positive                                              |                    |                 |                 |
| -5400 Pa (112.5 psf)                                   |                    | No Damage       | No Damage       |
| -Negative                                              |                    |                 |                 |
| -5400 Pa (112.5 psf)                                   |                    | No Damage       | No Damage       |
| -Permanent Set                                         |                    | 3.81mm (.015")  | 4.53mm (.046")  |

**Specification: Testing Application Standard, Protocol 201**  
**Impact Diagrams, Appendix B**

**Test Specimen 1**

| Speed    | Rotation | Title of Test      | Measured       | Allowable |
|----------|----------|--------------------|----------------|-----------|
| 50.6 fps | 0°       | Center of Glass    | No Penetration | TAS 201   |
| 50.1 fps | 0°       | Lower Right Corner | No Penetration | TAS 201   |

**Test Specimen 2**

| Speed    | Rotation | Title of Test      | Measured       | Allowable |
|----------|----------|--------------------|----------------|-----------|
| 50.5 fps | 0°       | Upper Right Corner | No Penetration | 1996-05b  |
| 49.8 fps | 0°       | Center of Glass    | No Penetration | 1996-05b  |

**Test Specimen 3**

| Speed    | Rotation | Title of Test     | Measured       | Allowable |
|----------|----------|-------------------|----------------|-----------|
| 50.9 fps | 0°       | Lower Left Corner | No Penetration | 1996-05b  |
| 50.2 fps | 0°       | Center of Glass   | No Penetration | 1996-05b  |

Florida Registered Professional Engineers Review: Reg. # 52849, February 28, 2011 –  
Abdol Rezadad, P.E.

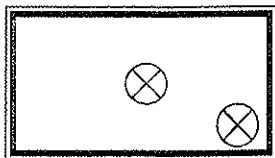
Signature:



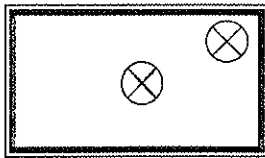
DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010  
Page 5 of 6

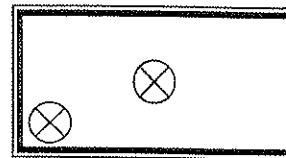
TEST SPECIMEN 1



TEST SPECIMEN 2



TEST SPECIMEN 3



⊗ - Indicates 2<sup>nd</sup> impact to specimen.

The laboratory temperature was maintained at 81° F for the duration of testing. Test specimens were stored in the lab prior to testing and the skin temperature of the aluminum was recorded at 81° F.

Visual inspections performed on the test specimens revealed there were no penetrations through the laminate and no separation of vision-to-frame glazing at the conclusion of the large missile impact tests.

**Specification: Testing Application Standard, Protocol 203**

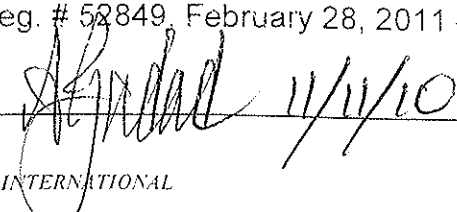
**Test Specimens 1-3**

| Load Direction     | Sequence | Range          | Cycle Time  | Cycles | Damage |
|--------------------|----------|----------------|-------------|--------|--------|
| 75 psf<br>Positive | Cycle 1  | 0.2 P to 0.5 P | < 3 seconds | 3500   | None   |
|                    | Cycle 2  | 0 to 0.6 P     | < 3 seconds | 300    | None   |
|                    | Cycle 3  | 0.5 P to 0.8 P | < 3 seconds | 600    | None   |
|                    | Cycle 4  | 0.3 P to 1.0 P | < 3 seconds | 100    | None   |
| Load Direction     | Sequence | Range          | Cycle Time  | Cycles | Damage |
| 75 psf<br>Negative | Cycle 1  | 0.3 P to 1.0 P | < 3 seconds | 50     | None   |
|                    | Cycle 2  | 0.5 to 0.8 P   | < 3 seconds | 1050   | None   |
|                    | Cycle 3  | 0 to 0.6 P     | < 3 seconds | 50     | None   |
|                    | Cycle 4  | 0.2 P to 0.5 P | < 3 seconds | 3350   | None   |

**Snubber Deflections**

| Load   | Sequence | Range          | Pos-Deflect. | Range          | Neg-Deflect. |
|--------|----------|----------------|--------------|----------------|--------------|
| 75 psf | Cycle 1  | 0.2 P to 0.5 P | .02"         | 0.3 P to 1.0 P | .090"        |
|        | Cycle 2  | 0 to 0.6 P     | .025"        | 0.5 to 0.8 P   | .070"        |
|        | Cycle 3  | 0.5 P to 0.8 P | .0275"       | 0 to 0.6 P     | .070"        |
|        | Cycle 4  | 0.3 P to 1.0 P | .0310"       | 0.2 P to 0.5 P | .065"        |

Florida Registered Professional Engineers Review: Reg. # 52849, February 28, 2011 –  
Abdol Rezadad, P.E.

Signature: 



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010  
Page 6 of 6

Visual inspections performed on the test specimens revealed there were no penetrations through the laminate and no separation of vision-to-frame glazing at the conclusion of the cyclic pressure differentials.

Detailed extrusion and assembly drawings indicating measured wall thickness and corner construction are on file and have been compared to the test sample submitted. These records will be retained at **CCLI** for a period of four years.

## 6. DISCLAIMER

The above results were achieved by using the designated test methods and indicate compliance with the above specification. This report does not constitute certification of this product.

Respectfully submitted,

**CONSTRUCTION CONSULTING LABORATORY, INTERNATIONAL**

CHEVIS WILSON  
TEST TECHNICIAN

JEFFREY CRUMP  
TESTING MANAGER

Florida Registered Professional Engineers Review: Reg. # 52849, February 28, 2011 –  
Abdol Rezadad, P.E.

Signature:

CONSTRUCTION CONSULTING LABORATORY, INTERNATIONAL



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
**SERIES 7600 ALUMINUM PROJECT OUT WINDOW**  
REPORT CCLI #10-210

November 9, 2010

## APPENDICES



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010

APPENDIX A

PRODUCT DRAWINGS

| DRAWING                        | PART NO. | DATE     |
|--------------------------------|----------|----------|
| Bill of Materials and Elev.    |          |          |
| Series C7600-23 Page 2 of 4    |          | 9/3/10   |
| Series C7600-23 Page 3 of 4    |          | 9/3/10   |
| Series C7600-23 Page 4 of 4    |          | 9/3/10   |
| Head, Jamb Deep Pocket Mullion | IG626    | 2/23/06  |
| Filler                         | IG100    | 2/22/06  |
| Sill                           | IG672    | 10/18/01 |
| Glass Stop                     | IG663    | 10/18/01 |
| Subsill                        | IG570    | 8/22/01  |
| Tube                           | J-175    | 11/25/64 |



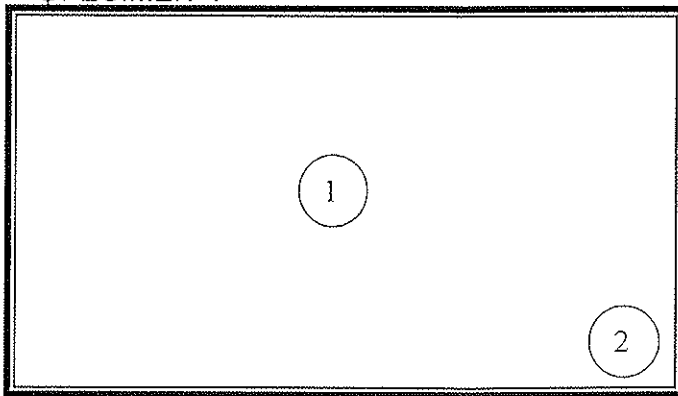
DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010

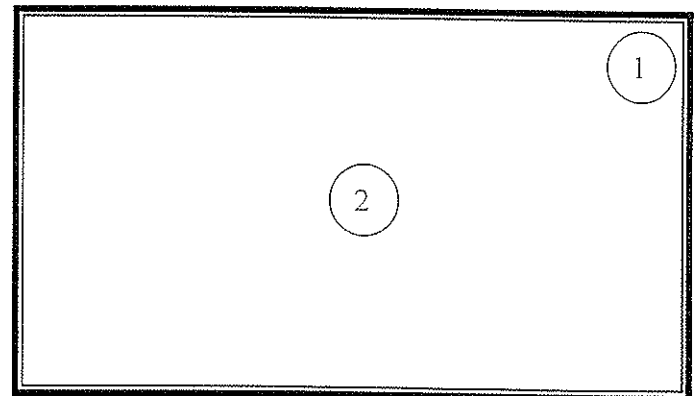
APPENDIX B

IMPACT DIAGRAM

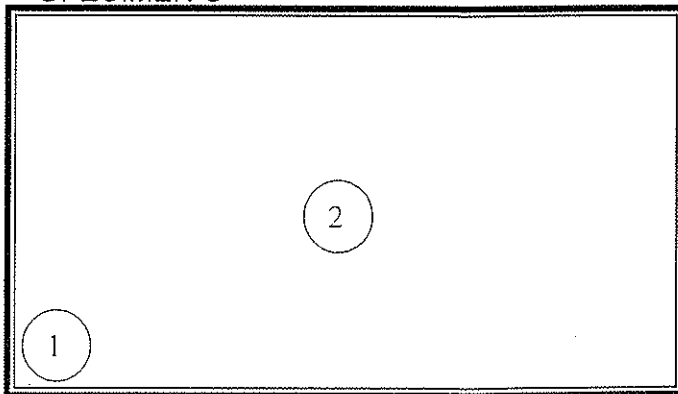
SPECIMEN 1



SPECIMEN 2



SPECIMEN 3

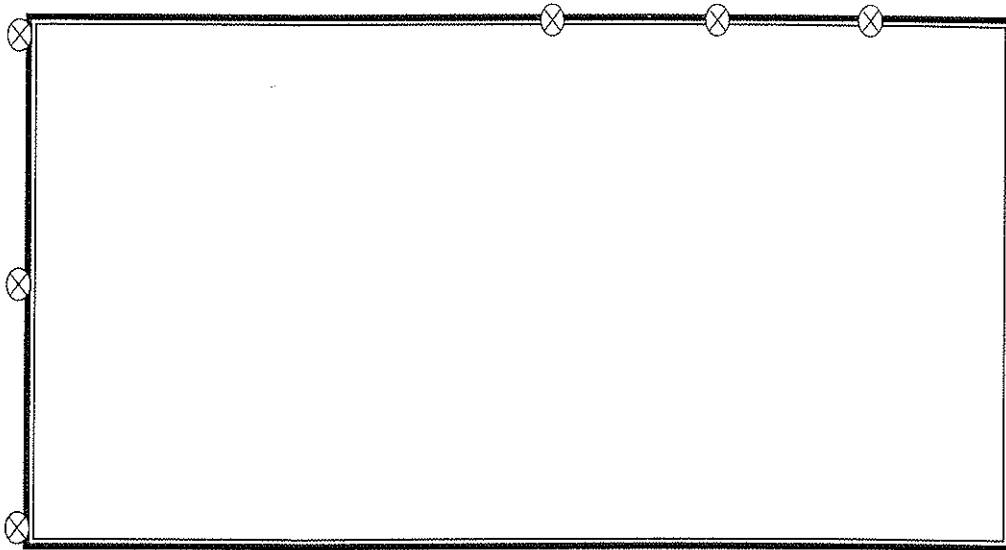




DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI #10-210

November 9, 2010

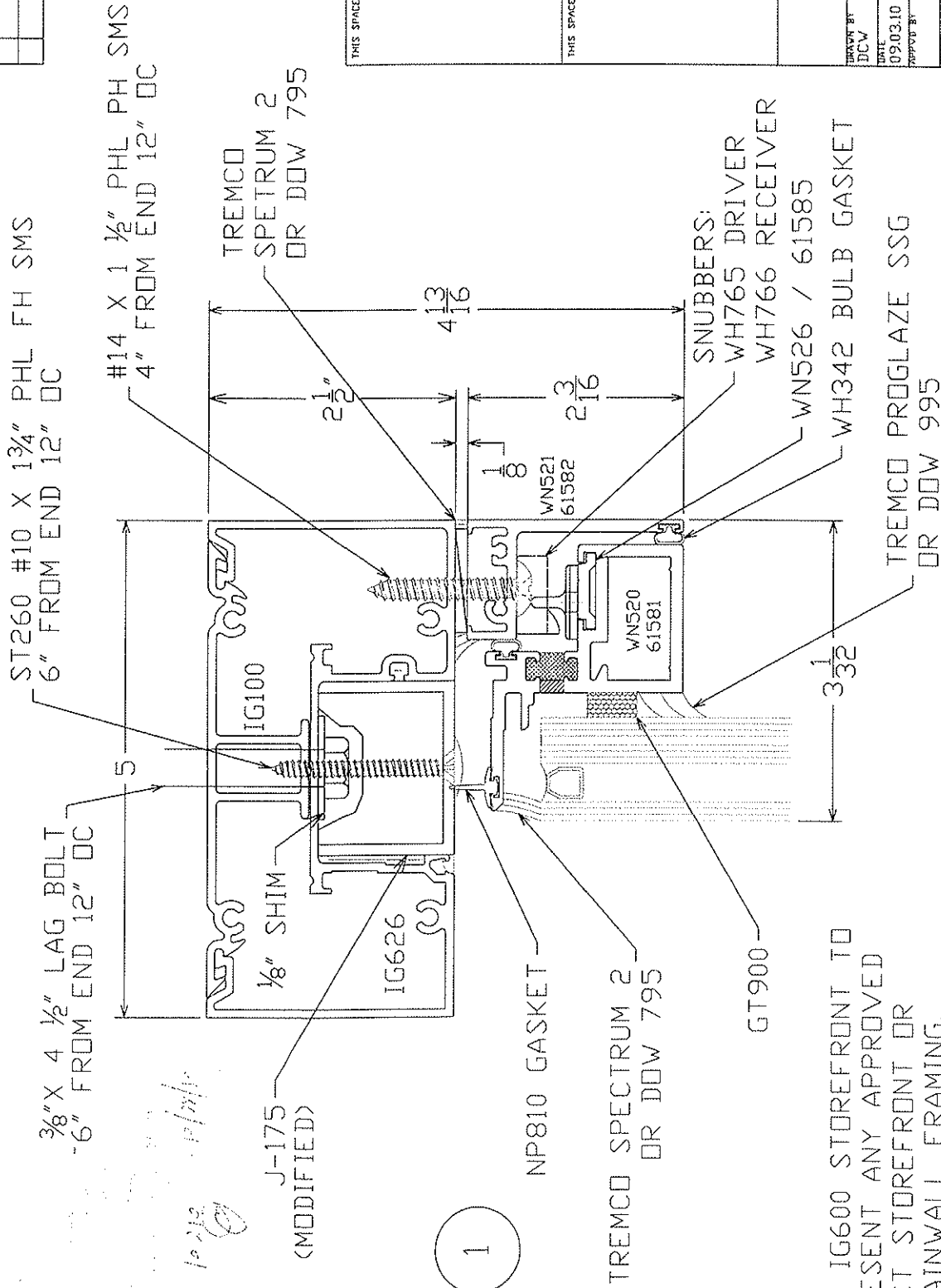
APPENDIX C  
DEFLECTION DIAGRAM



|                                                                             |                |       |                                       |         |        |                      |                                     |  |  |
|-----------------------------------------------------------------------------|----------------|-------|---------------------------------------|---------|--------|----------------------|-------------------------------------|--|--|
| QTY                                                                         | MARK           |       | CW7600                                | WINDOW  | WINDOW |                      |                                     |  |  |
| 3                                                                           | A              |       | TAS IMPACT                            | WIDTH   | X      | HEIGHT               |                                     |  |  |
|                                                                             |                |       |                                       | 60.0000 | X      | 32.0000              |                                     |  |  |
|                                                                             |                |       |                                       | GLASS   | X      | GLASS                |                                     |  |  |
|                                                                             |                |       | 1" INSULATED                          | 58.5000 | X      | 30.5000              |                                     |  |  |
|                                                                             |                |       | .187" HS CLEAR                        |         |        |                      |                                     |  |  |
|                                                                             |                |       | .312" ALUMINUM SPACER                 |         |        |                      |                                     |  |  |
|                                                                             |                |       | .187" HS CLEAR                        |         |        |                      |                                     |  |  |
|                                                                             |                |       | .090" SAFGLAS                         |         |        |                      |                                     |  |  |
|                                                                             |                |       | .187" HS CLEAR                        |         |        |                      |                                     |  |  |
| QTY                                                                         | PART           | DIE   | DESCRIPTION                           | LENGTH  |        |                      |                                     |  |  |
|                                                                             |                |       | HORIZONTALS                           |         |        | OPERATION            |                                     |  |  |
| 1                                                                           | WNS21          | 61582 | HEAD                                  | 59.0000 |        | CW7500-11            |                                     |  |  |
| 1                                                                           | WNS21          | 61582 | SILL                                  | 59.0000 |        | CW7500-11            | CW7500-18                           |  |  |
| 1                                                                           | WNS20          | 61581 | VENT HEAD                             | 59.6250 |        | CW7500-10            | CW7500-13                           |  |  |
| 1                                                                           | WNS20          | 61581 | VENT SILL                             | 59.6250 |        | CW7500-10            | CW7500-17                           |  |  |
|                                                                             |                |       | VERTICALS                             |         |        |                      |                                     |  |  |
| 1                                                                           | WNS23          | 61583 | RIGHT JAMB                            | 32.0000 |        | CW7500-12            |                                     |  |  |
| 1                                                                           | WNS23          | 61583 | LEFT JAMB                             | 32.0000 |        | CW7500-12            |                                     |  |  |
| 1                                                                           | WNS20          | 61581 | RIGHT VENT                            | 31.6250 |        | CW7500-13            | CW7500-16                           |  |  |
| 1                                                                           | WNS20          | 61581 | LEFT VENT                             | 31.6250 |        | CW7500-13            | CW7500-16                           |  |  |
|                                                                             |                |       | ACCESSORIES                           |         |        |                      |                                     |  |  |
| 4                                                                           | WNS24          | 61584 | CORNER ANGLE                          | 1.2300  |        | CW7500-21            |                                     |  |  |
| 2                                                                           | WNS26          | 61585 | HINGE ADAPTER                         | 8.0000  |        | CW7500-16            | <OR> NOTE: AMC PART# 1402-16 L or R |  |  |
| 3                                                                           | WNS26          | 61585 | SNUBBER SHIM                          | 4.0000  |        |                      |                                     |  |  |
| 1                                                                           | WH342          |       | WEATHERSTRIP                          | 15.3333 | FT     | TREMCO               |                                     |  |  |
| 1                                                                           | NP810          |       | WEATHER SWEEP                         | 15.3333 | FT     | TREMCO               |                                     |  |  |
| 10                                                                          | RG750          |       | TEMP GLAZING CLIPS                    |         |        |                      |                                     |  |  |
| 1                                                                           | GT900          |       | SHIM TAPE                             | 15.3333 | FT     | TREMCO               |                                     |  |  |
|                                                                             |                |       | HARDWARE                              |         |        |                      |                                     |  |  |
| 2                                                                           | WH641          |       | HYBRID HINGE                          | 14"-16" |        | AMC                  |                                     |  |  |
| 1                                                                           | 1248           |       | HANDLE                                |         |        | AMC                  |                                     |  |  |
| 1                                                                           | 8021 (OR) 8020 |       | HANDLE CONNECTOR                      |         |        | AMC                  |                                     |  |  |
| 1                                                                           | 1326           |       | DRIVE ARM                             |         |        | AMC                  |                                     |  |  |
| 1                                                                           | 1324           |       | DRIVE PLATE                           |         |        | AMC                  |                                     |  |  |
| 3                                                                           | 1315           |       | LOCK PLATE                            |         |        | AMC                  |                                     |  |  |
| 3                                                                           | 1355           |       | KEEPER                                |         |        | AMC                  |                                     |  |  |
| 3                                                                           | 1356           |       | KEEPER SHIM                           |         |        | AMC                  |                                     |  |  |
| 3                                                                           | WH765          |       | SNUBBER DRIVER                        |         |        | AMC                  |                                     |  |  |
| 3                                                                           | WH766          |       | SNUBBER RECEIVER                      |         |        | AMC                  |                                     |  |  |
| 2                                                                           | WNS26          | 61585 | SLIDE BARS                            |         |        | <OR> AMC 6/6 OR ALUM |                                     |  |  |
|                                                                             |                |       | NOTE: THREE OPTIONS TESTED            |         |        | UNIT #1              | AMC ALUM                            |  |  |
|                                                                             |                |       |                                       |         |        | UNIT #2              | AMC 6/6 NYLON                       |  |  |
|                                                                             |                |       |                                       |         |        | UNIT #3              | INTEX ALUMINUM                      |  |  |
|                                                                             |                |       | FASTENERS                             |         |        |                      |                                     |  |  |
| 2                                                                           |                |       | SHCS @ HANDLE                         |         |        | AMC                  |                                     |  |  |
| 2                                                                           | 1336           |       | SHFH @ HNDL CONC                      |         |        | AMC                  |                                     |  |  |
| 2                                                                           |                |       | SH SET @ SHIM                         |         |        | AMC                  |                                     |  |  |
| 8                                                                           | ST241          |       | ASSEMBLY SCREWS                       |         |        | VARIES               |                                     |  |  |
| 12                                                                          | ST242          |       | ARM SCREWS                            |         |        | VARIES               |                                     |  |  |
| 10                                                                          | ST361          |       | TEMP CLIP SCREWS                      |         |        | VARIES               |                                     |  |  |
| 6                                                                           | ST242          |       | SNUBBER SCREWS                        |         |        | VARIES               |                                     |  |  |
|                                                                             |                |       | POLYURETHANE THERMAL FILL             |         |        | AZON                 |                                     |  |  |
| PERIMETER FRAMING - SIMULATING APPROVED PERIMETER STOREFRONT OR CURTAINWALL |                |       |                                       |         |        |                      |                                     |  |  |
| 2                                                                           | IG626          |       | REPRESENTING                          |         |        | INTEX                |                                     |  |  |
| 2                                                                           | IG626          |       | IMPACT APPROVED                       |         |        | INTEX                |                                     |  |  |
| 2                                                                           | IG100          |       | STOREFRONT                            |         |        | INTEX                |                                     |  |  |
| 2                                                                           | IG100          |       | OR CURTAINWALL                        |         |        | INTEX                |                                     |  |  |
| 2                                                                           | J-175          |       |                                       |         |        | INTEX                |                                     |  |  |
| 2                                                                           | J-175          |       |                                       |         |        | INTEX                |                                     |  |  |
| 3                                                                           | IG570          |       |                                       |         |        | INTEX                |                                     |  |  |
| 1                                                                           | IG663          |       |                                       |         |        | INTEX                |                                     |  |  |
| 1                                                                           | IG672          |       |                                       |         |        | INTEX                |                                     |  |  |
|                                                                             |                |       | SEALANTS                              |         |        |                      |                                     |  |  |
|                                                                             | UNIT #1        |       | TREMCO PROGLAZE SSG / TREMCO SECTRUM2 |         |        |                      |                                     |  |  |
|                                                                             | UNIT #2        |       | TREMCO PROGLAZE SSG / TREMCO SECTRUM2 |         |        |                      |                                     |  |  |
|                                                                             | UNIT #3        |       | DOW 995 / DOW 795                     |         |        |                      |                                     |  |  |



| SYN | REVISION | DATE | BY |
|-----|----------|------|----|
|     |          |      |    |
|     |          |      |    |
|     |          |      |    |



NOTE: IG600 STOREFRONT TO REPRESENT ANY APPROVED IMPACT STOREFRONT OR CURTAINWALL FRAMING.

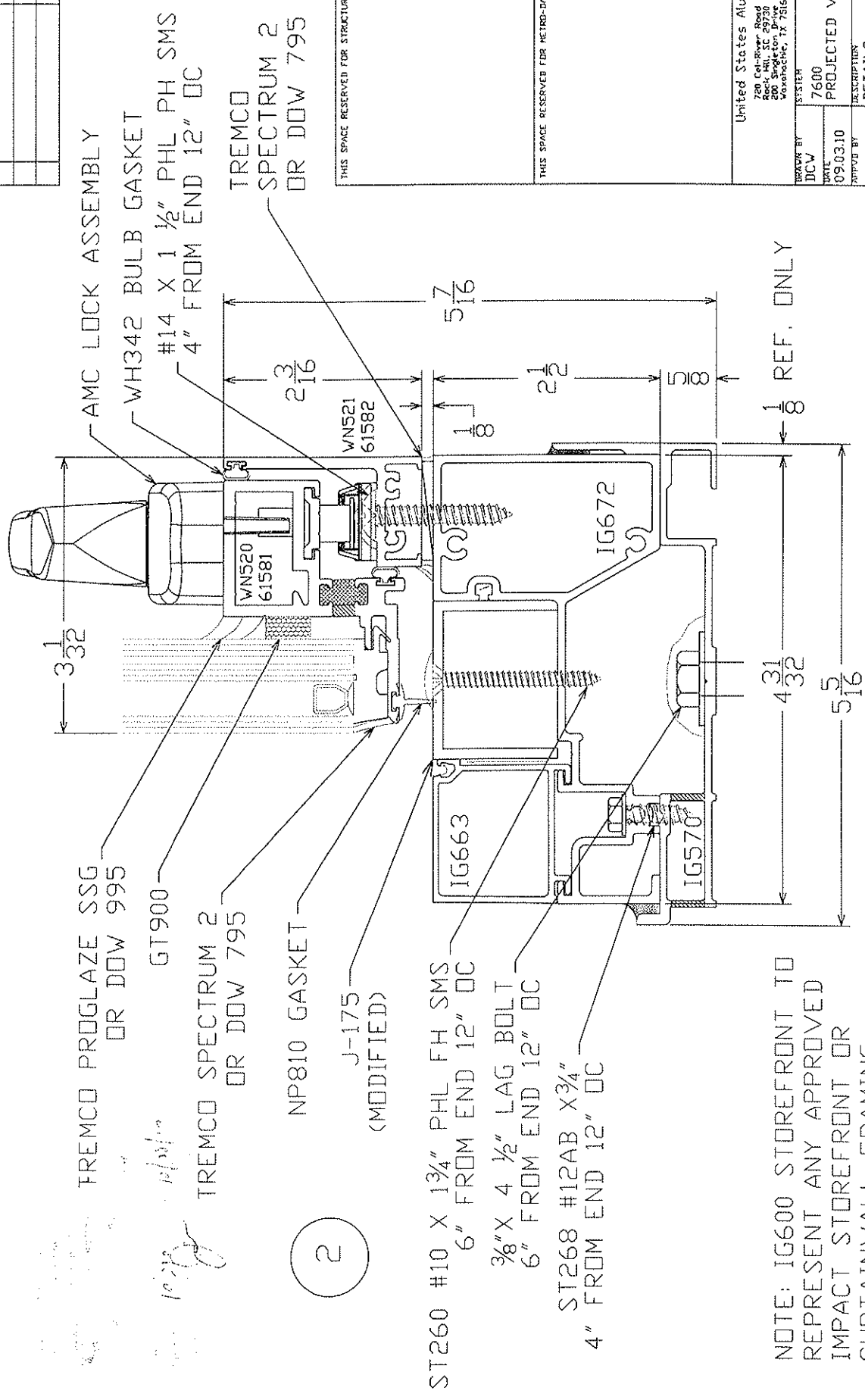
THIS SPACE RESERVED FOR STRUCTURAL ENGINEER

THIS SPACE RESERVED FOR METRO-DATA USE ONLY

United States Aluminum  
7200 Cedarwood Road  
Rock Hill, SC 29730  
200 Singleton Drive  
Waukegan, IL 60085

|             |          |                |          |
|-------------|----------|----------------|----------|
| DESIGNED BY | DCW      | SYSTEM         | 7600     |
| DATE        | 09/03/10 | PROJECTED VENT |          |
| APPROVED BY |          | DESCRIPTION    | DETAILS  |
| SCALE       | FULL     | DRAWING NO.    | C7600-23 |
|             |          | SHEET          | 2 OF 4   |

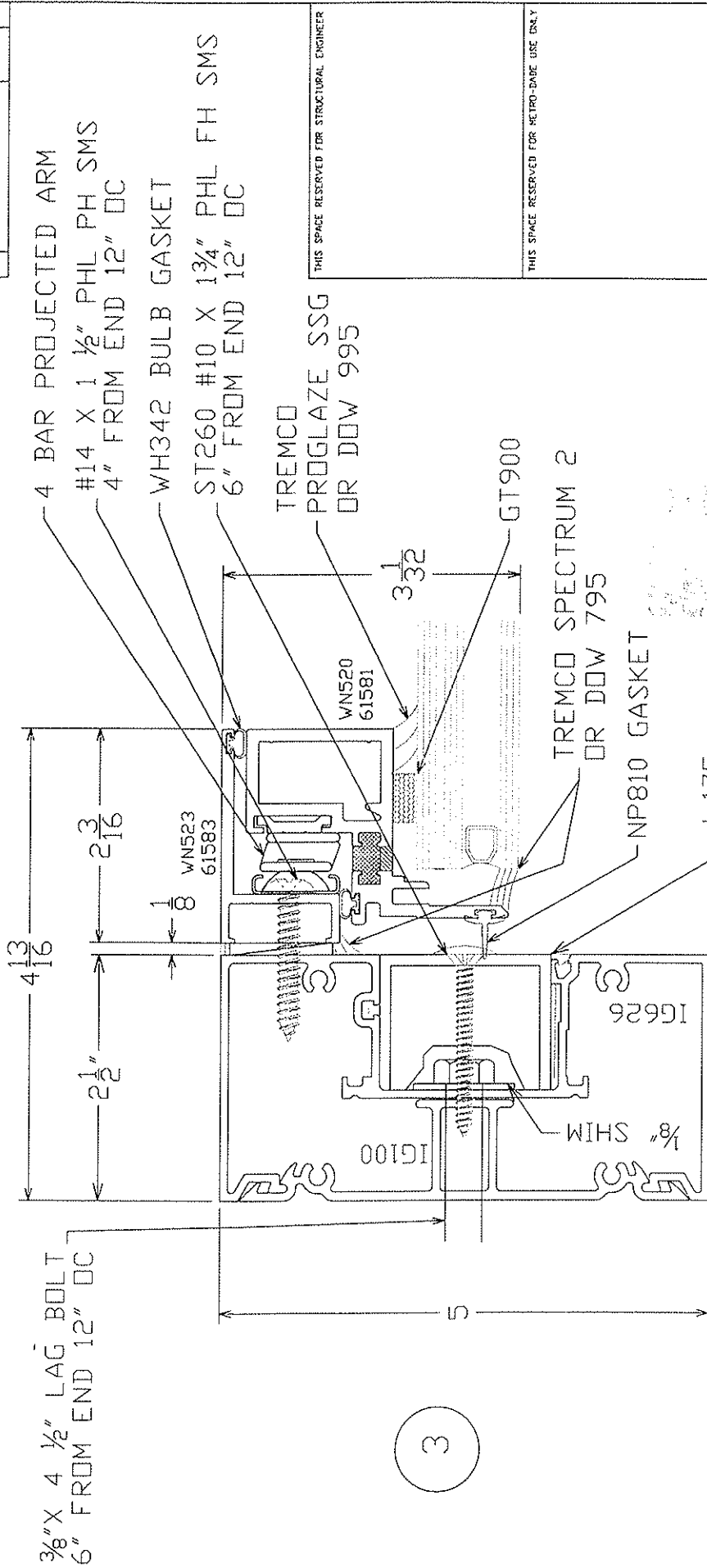
| SYN | REVISION | DATE | BY |
|-----|----------|------|----|
|     |          |      |    |
|     |          |      |    |
|     |          |      |    |



NOTE: IG600 STOREFRONT TO REPRESENT ANY APPROVED IMPACT STOREFRONT OR CURTAINWALL FRAMING.

|                                                                                                             |                           |
|-------------------------------------------------------------------------------------------------------------|---------------------------|
| THIS SPACE RESERVED FOR STRUCTURAL ENGINEER                                                                 |                           |
| THIS SPACE RESERVED FOR METRO-DATA USE ONLY                                                                 |                           |
| United States Aluminum<br>780 Calaveras Road<br>P.O. Box 1000<br>2800 Shattuck Drive<br>Vancouver, TX 75165 |                           |
| DRAWN BY<br>DCW                                                                                             | CHECKED BY<br>7600        |
| DATE<br>09.03.10                                                                                            | PROJECT<br>PROJECTED VENT |
| APPROVED BY                                                                                                 | DESCRIPTION<br>DETAILS    |
| SCALE<br>FULL                                                                                               | DRAWING NO.<br>C7600-23   |
| SHEET<br>3 OF 4                                                                                             |                           |

| SYM | REVISION | DATE | BY |
|-----|----------|------|----|
|     |          |      |    |
|     |          |      |    |
|     |          |      |    |



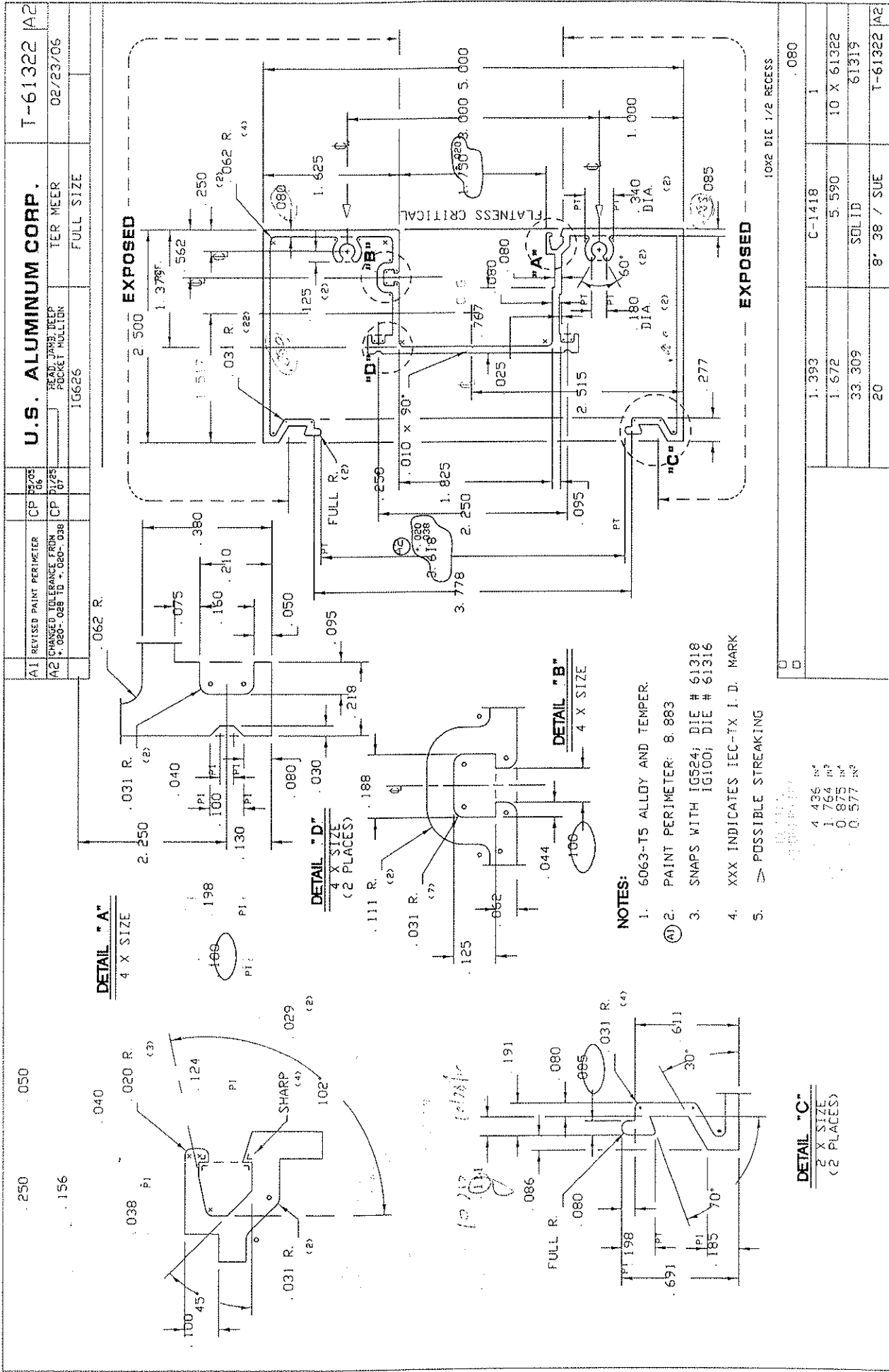
3

NOTE: IG600 STOREFRONT TO REPRESENT ANY APPROVED IMPACT STOREFRONT OR CURTAINWALL FRAMING.

THIS SPACE RESERVED FOR STRUCTURAL ENGINEER

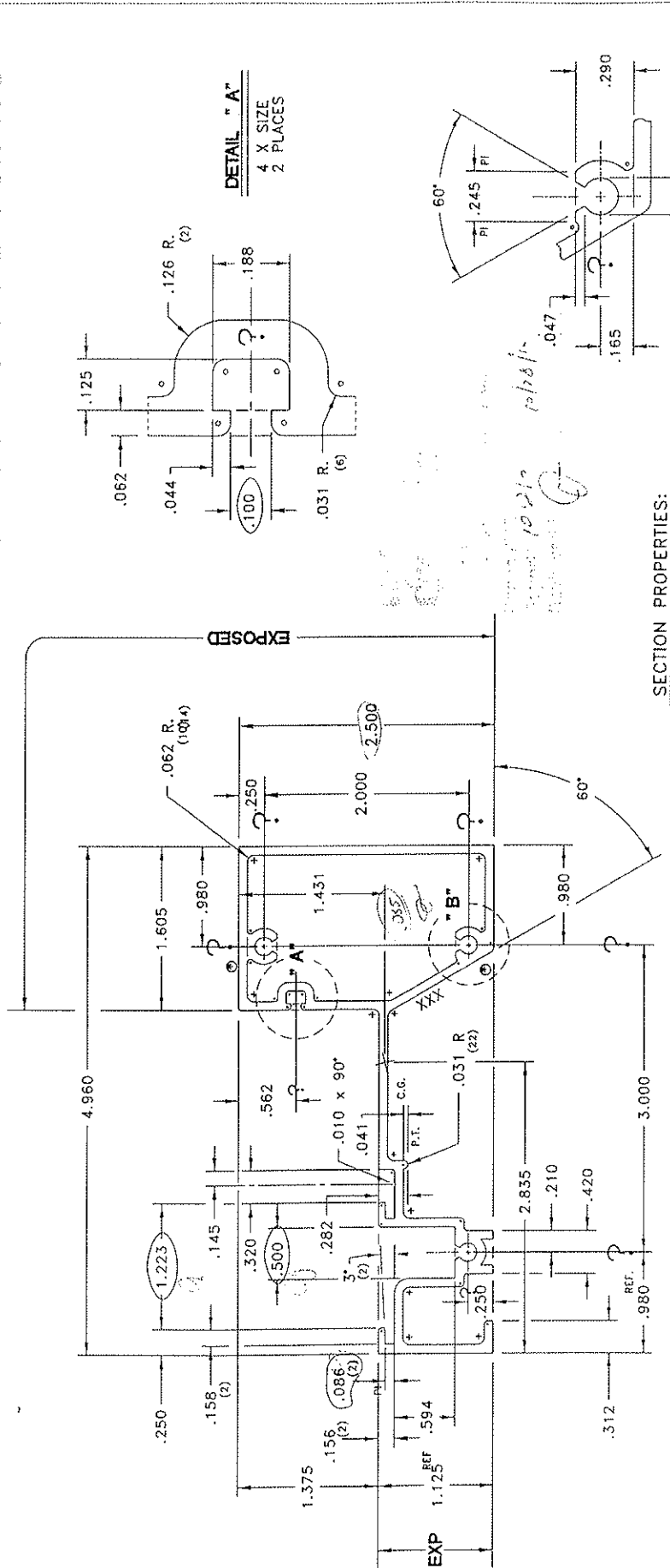
THIS SPACE RESERVED FOR METRO-DADE USE ONLY

|                        |          |
|------------------------|----------|
| United States Aluminum |          |
| 720 Cal-River Road     |          |
| Rock Hill, SC 29730    |          |
| 200 Singleton Drive    |          |
| Macon, GA 31206        |          |
| DRAWN BY               | BCV      |
| DATE                   | 09.03.10 |
| PROJECTED VENT         | 7600     |
| APPROVED BY            |          |
| DESCRIPTION            | DETAILS  |
| SCALE                  | FULL     |
| DRAWING NO.            | C7600-23 |
| SHEET                  | 4 OF 4   |





|                     |  |           |  |
|---------------------|--|-----------|--|
| U.S. ALUMINUM CORP. |  | T-60845   |  |
| SILL                |  | TER MEER  |  |
| SF500 STORM-FRONT   |  | 10/18/01  |  |
| IG672               |  | FULL SIZE |  |



**DETAIL "A"**  
4 X SIZE  
2 PLACES

**DETAIL "B"**  
2 X SIZE  
SIM. 3 PLACES

**SECTION PROPERTIES:**

|                |   |
|----------------|---|
| lxx = 3.848 in | 4 |
| Sxx = 1.357 in | 3 |
| lyy = 0.870 in | 4 |
| Syy = 0.608 in | 3 |

**NOTES:**

1. 6063-T5 ALLOY AND TEMPER.
2. PAINT PERIMETER: 5.230
3. OUTSIDE PERIMETER: 22.100
4. XXX INDICATES IEC-TX I.D. MARK
5. ° INDICATES STREAKING POSSIBLE
6. ASSEMBLES WITH C-428; DIE #

UNLESS OTHERWISE NOTED  
ALL CORNERS ARE 90° R AND TYPICAL WALL THICKNESS IS .085

|           |                 |       |            |              |
|-----------|-----------------|-------|------------|--------------|
| REF. DIM. | 1.385           | 1.662 | 31.022     | 19           |
| REF. DIM. | C-427           | 5.554 | HOLLOW III | 8" 39/SIRLEY |
| REF. DIM. | PORTHOLE 12x6.5 | 60776 |            | T-60845      |

International Extrusion Corporation  
100 SINGLETON DRIVE  
WAZARACHE  
78751-631-7653

REVISION:  
PROJECT:

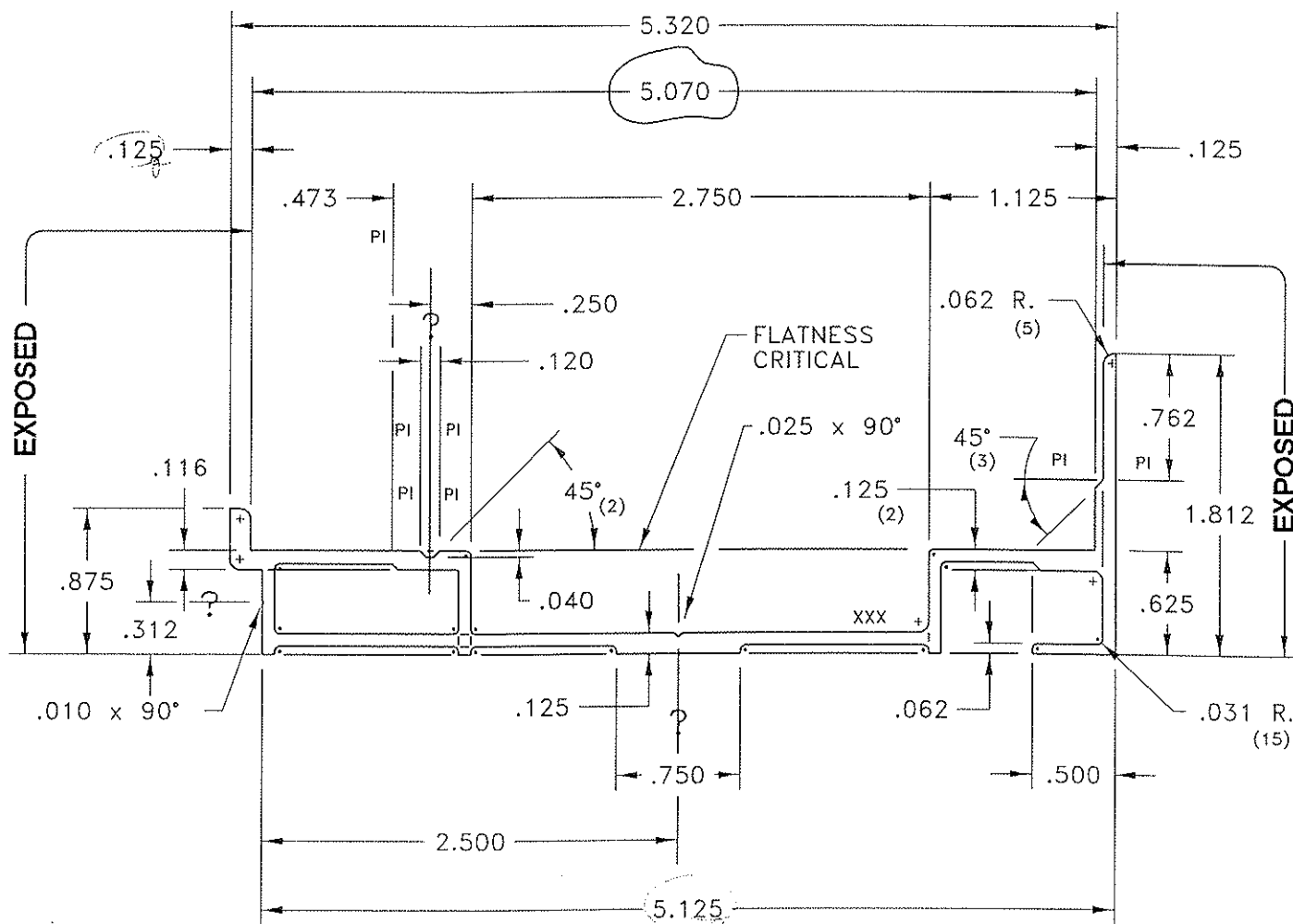


|     |           |                      |                      |           |
|-----|-----------|----------------------|----------------------|-----------|
| REV | REVISION  | DATE                 | CUSTOMER             | DIE NO.   |
|     |           |                      | U. S. ALUMINUM CORP. | H-60779   |
|     | PART NAME | 16500 IMPACT SUBSILL | DRAWN                | TER MEER  |
|     | DATE      | 08/22/01             | SCALE                | FULL SIZE |
|     | ITEM NO.  | IG570                |                      |           |

STANDARD TOLERANCES FOR EXTRUDED SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE

# NOTES:

1. 6063- T5 ALLOY AND TEMPER
2. OUTSIDE PERIMETER: 17.725
3. PAINT PERIMETER: 1.182
4. XXX INDICATES IEC-TX I.D. MARK.



PRODUCT:  
PROJECT:

CA  
TX

UNLESS OTHERWISE NOTED,  
ALL CORNERS ARE .015 R, AND TYPICAL WALL THICKNESS IS .075

|             |        |             |           |         |
|-------------|--------|-------------|-----------|---------|
| EST. AREA:  | .894   | US-NO.      | C-392     | PORTS   |
| EST. WT/FT: | 1.073  | CIRCLE SIZE | 5.494 IN. | BACKER  |
| EST. PERI:  | 20.704 | CL/SS.      | HOLLOW II | BOLSTER |
| FACTOR      | 19     | EP-         |           | DIE NO  |
|             |        |             |           | H-60779 |

International Extrusion Corporation

202 SINGLETON DRIVE  
#921 957-7032

WACAHACHE  
TEXAS 75155

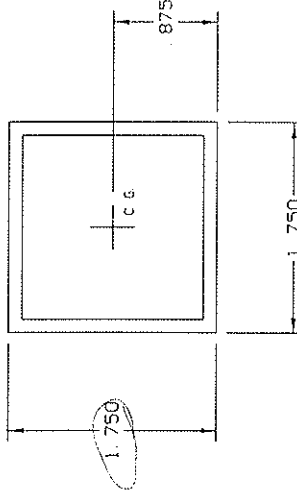
|    |  |                     |     |          |                          |  |           |          |
|----|--|---------------------|-----|----------|--------------------------|--|-----------|----------|
| B  |  | REVISED BDL CALLOUT | F   | 5/17/73  | U.S. ALUMINUM CORP.      |  | H-4571    | C1       |
| C  |  | ADDED NOTE          | IRC | 3/10/75  | 1 3/4" x 1 3/4" SQ. TUBE |  | J. D.     | 11/25/64 |
| CI |  | WT/FT CAL'D @ 1.176 | DC  | 08-24/93 | J-175                    |  | FULL SIZE |          |

**NOTE:**

1. ALL OUTSIDE SURFACES EXPOSED
2. OUTSIDE PERIMETER= 7.000

**SECTION PROPERTIES:**

$I_{xx} = 0.330 \text{ in}^4$   
 $S_{xx} = 0.377 \text{ in}^3$   
 $I_{yy} = 0.330 \text{ in}^4$   
 $S_{yy} = 0.377 \text{ in}^3$



□ □

.112

|        |  |   |             |           |
|--------|--|---|-------------|-----------|
| .734   |  |   |             |           |
| .863   |  | ⑥ | 2.475       |           |
| 13.104 |  |   | HOLLOW II   |           |
| 15     |  |   | 8' 74 / SUE | H-4571 C1 |



DADE COUNTY TAS 201, 202 & 203  
UNITED STATES ALUMINUM  
SERIES 7600 ALUMINUM PROJECT OUT WINDOW  
REPORT CCLI#10-210

November 9, 2010

- END OF REPORT -