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ATLNC 0727.01-10IT
DC Not. # ATLNC 10001

Report Date: 10/21/10

ATLNC Certification # 08-0227.14
FBC Organizational # TST 1555

Test Date: 07/27/10

Test Requested By:

Chris Gall
US Aluminum Inc.
720 Cel-River Road
Rock Hill, SC 29730
Phone 800-462-5668 Fax 800-841-8722

Test Standards:

FBC – TAS 202-94
ASTM E330-02, E283-04, E331-00

Note: All tests conducted in accordance with BCCO Test Proposal 10-0610.

Test Conditions: 75-80 degrees F

Design Pressures: 65 psf, -65 psf

Specimen A, (Mockup 1-A) Fixed Panel (182-1/2" x 120") as shown in #USA-3103 p 1 of 6

Configuration: All Specimens were mounted as follows:

Specimen A, was mounted in a steel, CMU block, wood and concrete test buck.

Model Material: Extruded Aluminum 6063 -T5 unless otherwise noted.

Specimen A, Mockup 1-A

Designation: Series IT600 Fixed Panel as shown in drawing USA-3103 sheet 1 of 6.

Overall Size: 182-1/2" x 120"

Configuration: 3 lites wide x 2 lites high

Daylight Opening: 3 lites 57-1/2" x 96": 3 lites 57-1/2" x 15-7/8"

Glazing: 1-5/16" Insulated 1/4"HS + .500" Air + 1/4" HS + .090SGP + 1/4" HS

Glazing Method: Dry Glazed with 9/16" glass bite

Frame Construction: Extruded Aluminum

Part	Number	Location	Size	Attachment
Head Part NO. BT852 (61543)	3	Top of unit	5" x 2-1/2" x 57-1/2" as shown in drawing USA-3103 sheet 2 of 6	Attached to jambs and verticals with 4 frame screws each end
Horizontal Part NO. BT862 (61545)	3	15-7/8" from head as shown in drawing USA-3103 sheet 8 of 22	57-1/2" as shown in drawing USA-3103 sheet 3 of 6	Attached to verticals with 3 frame screws each end
Jambs Part NO BT 805 (61539)	2	Each side	5" x 2-1/2" x 120" as shown in drawing USA-3103 sheet 5 of 6	Attached to head and sill with 4 #12 x 1" HWH SMS screws at each location
End Dam part No EC870	2	Subsill End Dam	2-3/8" as shown in USA-3103 Sheet 5 of 6	Side of Subsill
Verticals Part NO BT815 (61540)	2	Intermediate Mullion	5" x 2-1/2" x 119-3/8" as shown in drawing USA-3103 sheet 6 of 6	Attached to the head, horizontal and sill with 4 #12 x 1" HWH SMS screws at each location
Sill Part NO BT872(61548)	3	Bottom of unit	5" x 3-1/8" x 57-1/2" as shown in drawing USA-3103 sheet 4 of 6	Attached to the sub sill with #12 x 3/4" HWH SMS Type B 2" from end then 16" OC
Subsill Part NO BT870 (61547)	1	Bottom of unit	182-3/4" long and as shown in drawing USA-3103 sheet 4 of 6	Attached to the substrate with 3/8" x 2-1/2" Powerbolt with minimum 2" embedment 2" from end then 16" OC set in a bed of sealant.
Stop Part NO BR863 (61551)	6	Exterior Glazing Stop at mullions and sill	57-7/16" long as shown in drawing USA-3103 sheets 4 of 6	Snapped to the sill as shown in drawing

Mullion Caps Part NO CP 801	4	Top of verticals and jambs	2-3/8" as shown in USA-3103 sheets 11 and 6 of 6	Attached to top verticals and jambs
Water Deflectors Part # WD 911 Part # WD 912 Part # WD 913	Filler 4 Mullion 4 Jambs 4	End of Horizontal	As Shown in USA -3103 sheets 2/3 of 6	Attached with Dow 795
Setting blocks Part NO SB117	12	Bottom of each Glass piece	As Shown in USA 3103 sheets 3/4 of 6	Between bottom of glass and rails.

Gaskets:

<u>Quantity</u>	<u>Description</u>	<u>Location</u>
113.44 ft	Exterior Gasket Part # NP225	Exterior perimeter of all glass
113.44 ft	Interior Gasket Part # NP826	Interior perimeter of all glass

Reinforcement: Mullions reinforced with 1/8" Steel channel fastened to the mullion with (2) #12 x 1" HWH SMS 1" from the ends and 12" OC as shown in drawing # USA-3103 sheet 6 of 6.

Screws and Method of Attachment:

CMU Jamb: 3/8" x 3" Powerbolt / 2-1/2" min embedment.

Steel Jamb: 3/8"-13 grade 5 hex head bolt

Sill: 3/8" x 3" Powerbolt / 2-1/2" min embedment.

Header: 3/8" x 3-1/2" Grade 5 Lag Screws / 3" min embedment

Frame Assembly Screws: # 12 x 1" HWH SMS as shown in drawings.

Sealant: Dow 795 perimeter and all joints

Weep Holes: 3/8" diameter located 6" from end and 6" each side of verticals

Test Sequence

Specimen A, : Air Infiltration; Positive Design Load; Negative Design Load; Water Infiltration, Positive Test Load; Negative Test Load.

Note: All tests were performed in accordance with FBC TAS 202, ASTM E283-04, E330-02 and E331-00 with no deviations.

Specimen A
Mockup #1-A

AIR INFILTRATION TEST
TAS 202, ASTM E283-04

Tested @ psf	Air Infiltration CFM/Sq. Ft.	Allowed CFM/Sq. Ft.	Results
6.24	<.01	.06	passed

WATER INFILTRATION TEST
TAS 202, ASTM E331-00

Design Pressure	PSF Load	Results
	9.75	Passed

STATIC AIR PRESSURE
TAS 202, ASTM E330-02

Design Loads **+65psf, -65psf**

Range of tests			Vertical			Horizontal			Header	
Pos. loads	Time Sec	Load psf	Max. Def.	Perm. Set	Allow.	Max. Def.	Perm Set	Allow.	Perm Set	Allow.
½ Test	30	48.8								
Design	30	65	.58"	.	.67"	.25"		.31"		.31"
Test	30	97.5		.06"	.24"		.02"	.12"	.02"	.12"

Range of tests			Vertical			Horizontal			Header	
Neg. loads	Time Sec	Load psf	Max. Def.	Perm. Set	Allow.	Max. Def.	Perm Set	Allow.	Perm Set	Allow.
½ Test	30	48.8								
Design	30	65	.58"		.67"	.23"		.31"		.31"
Test	30	97.5		.15"	.24"		.08"	.12"		.12"

Description of specimens after test:

Specimens showed no resultant failure or distress after cyclical test. No failure of fasteners or separation of glass from the aluminum frame was observed.

Note: 2-mil polyethylene film was used for the Static Air Pressure Test; it is the opinion of the undersigned that it had no influence on the results of the tests.

Observers-

Tony Sivore / ATL
Keith Owen, Shane Worley, / ATL
Jeremy Sivore, Josh Thomas / ATL
Chris Gall / US Aluminum Corp.
David Johnson P.E.

Keith Owen / Lab Manager
American Test Lab, Inc.

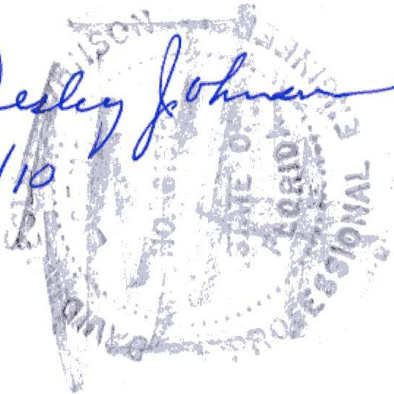
Keith Owen
10/21/10

All Tests Witnessed and Certified by:

David Johnson P. E.
1656 Calvert Rd.
Brevard, NC 28712
Florida P.E. # 00061915

Engineer Seal And Signature

David Wesley Johnson
10/21/10



Certificate of Independence: The witnessing engineer has no financial interest in American Test Lab of North Carolina, US Aluminum or their parts vendors. Witnessing engineer is in complete compliance of Florida Statue 9B-72, Section 72.110.

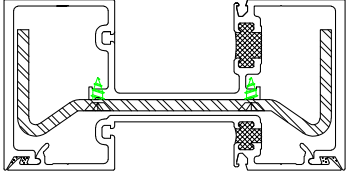
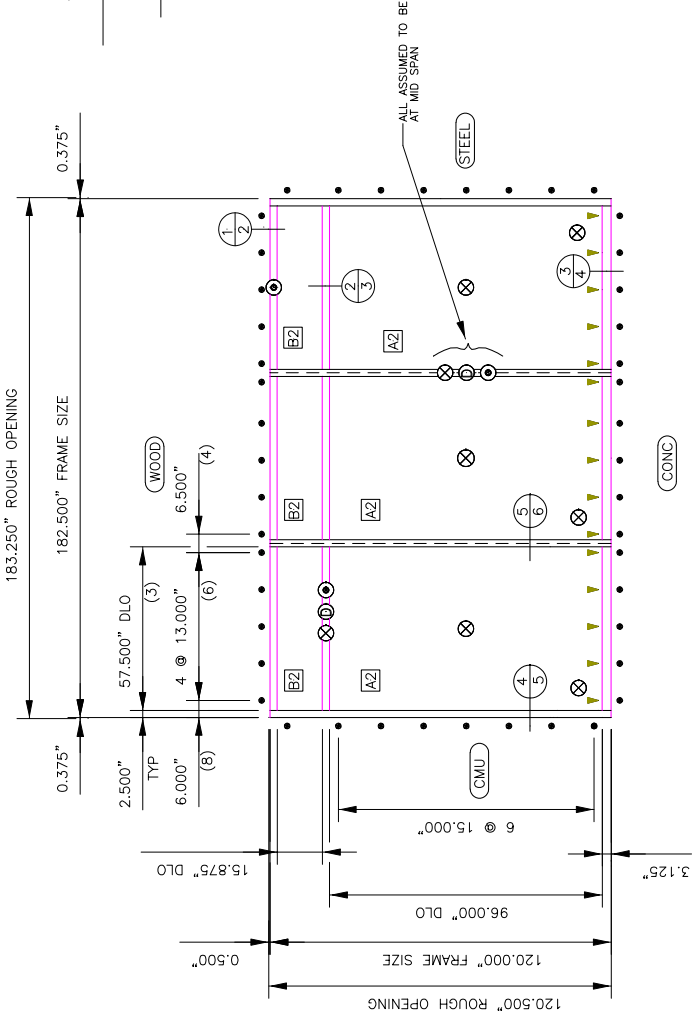
Disclaimer

This test report was prepared by American Test Lab North (ATL) for the exclusive use of the above named client; it does not constitute certification of this product. The results are for that particular specimen tested and does not imply the quality of similar or identical products manufactured or installed from specifications identical to the tested product. ATL is a testing lab and assumes that all information provided by the client is accurate and does not guarantee or warranty any produced tested or installed.

SYM	REVISION	DATE	BY

THERMAL BLAST/IMPACT SYSTEM

DUAL GLAZED—DRY GLAZED



THIS SPACE RESERVED FOR STRUCTURAL ENGINEER

THIS SPACE RESERVED FOR METRO-DADE USE ONLY

United States Aluminum

- 720 Cel-River Road
- Rock Hill, SC 29730
- 200 Singleton Drive
- Waxahachie, TX 75165

DESIGNED BY	SYSTEM
DATE	SERIES BT601/IT600
APPROVED BY	STORMFRONT SYSTEM
SCALE	LAM. GLAZING
FULL SIZE	DESCRIPTION
USA-3103	ELEVATION & BILL OF MATERIALS
1 OF 6	SHEET

TEST REQUIREMENTS

ALLOWABLE AIR INFILTRATION:
(ASTM E285)
1.57 psf AND 6.24 psf

ALLOWABLE WATER INFILTRATION:
MUST MEET WATER TEST
(ASTM E331) 9.75 PSF STATIC PRESSURE
NO WATER @ 9.75 psf

STRUCTURAL PERFORMANCE:
(ASTM E330)
DESIGN = 65 psf
STRUCTURAL = 97.5 psf
ALLOWABLE DEFLECTION = L/180

IMPACT TEST:
(FBC PA-201)
LARGE MISSILE (A2 INFILL)
(B2 INFILL)

CYCLICAL LOADING TEST:
(FBC PA-203)
4,500 CYCLES (+) 65 psf
4,500 CYCLES (-) 65 psf

- ⊗ LARGE MISSILE IMPACT
- ⊙ DEFLECTION
- ⊙ PER. SET

STOREFRONT MOCKUP #1-A - 1 RQD.

- (1) TAS 202 (Dp = 65 PSF)
AIR INFILTRATION — 0.06 CFM MAX.
NOTE: DESIGN LOAD TO BE LOADED
BEFORE WATER TEST IS PERFORMED
PER TAS 202
- STRUCTURAL
- (1) TAS 201/203 LARGE MISSILE/CYCLIC LOAD

INFILL SCHEDULE

SYMBOL	DESCRIPTION	QTY TO TEST
A2	1/4 HS + .500 AIR + 1/4 HS + .090 SGP + 1/4 HS 58 5/8" X 97 1/8" (39.54 SQ. FT.) DUPONT	3
B2	1/4 HS + .500 AIR + 1/4 HS + .090 SGP + 1/4 HS 58 5/8" X 17" (6.92 SQ. FT.) DUPONT	3

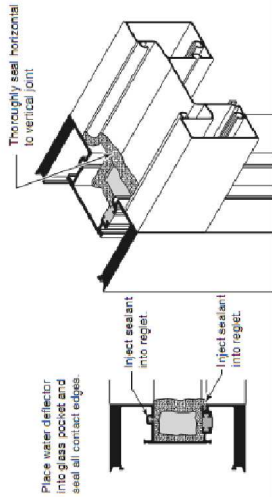
SEALANT SCHEDULE

GLAZING — DOW 995
PERI. — DOW 795

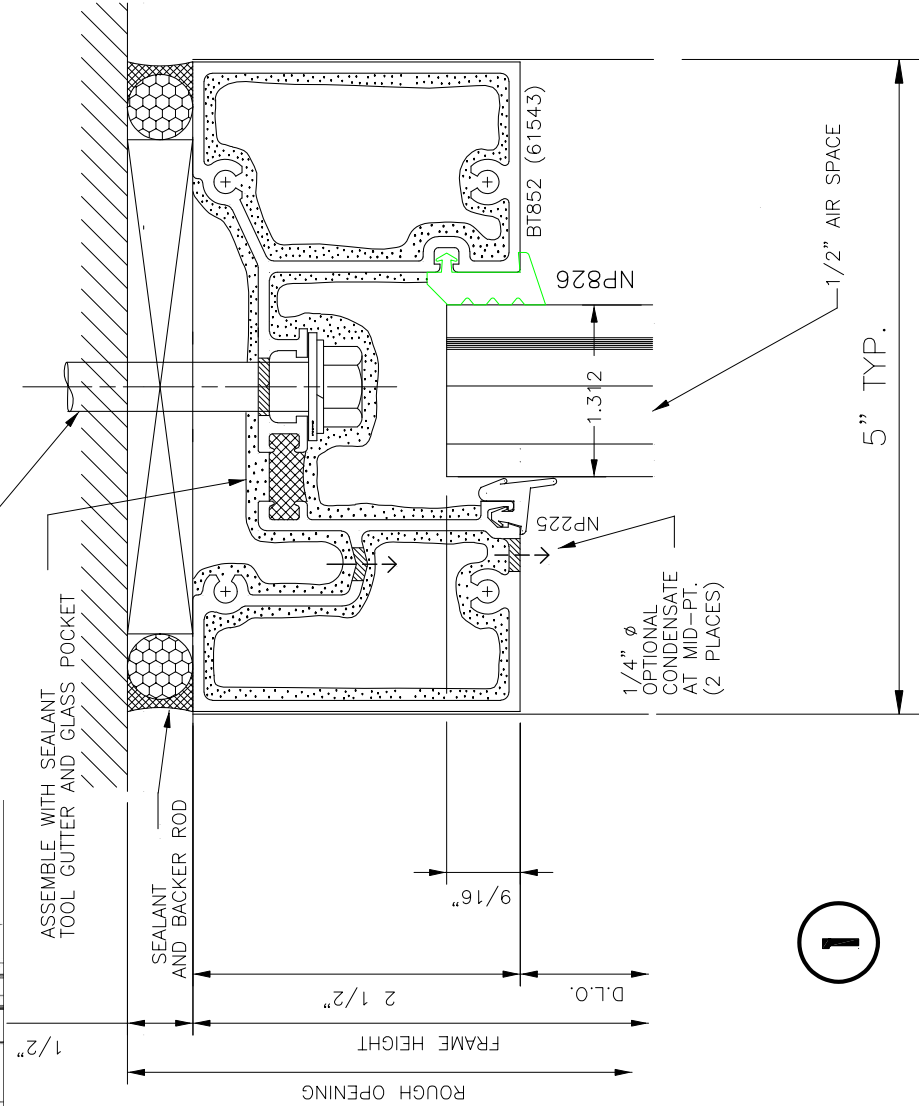
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WATER DEFLECTORS PER VERTICAL MULLION:

WD911
WD912
WD913



CONCRETE SUBSTRATE: 3/8" Ø GRADE 5 POWER-BOLT, 2 1/2" EMBEDMENT
STEEL SUBSTRATE: 3/8" - 13 GRADE 5 HEX HEAD BOLT
WOOD SUBSTRATE: 3/8" X 6" GRADE 5 HEX HEAD LAG BOLT, 4" MIN. EMBEDMENT



1

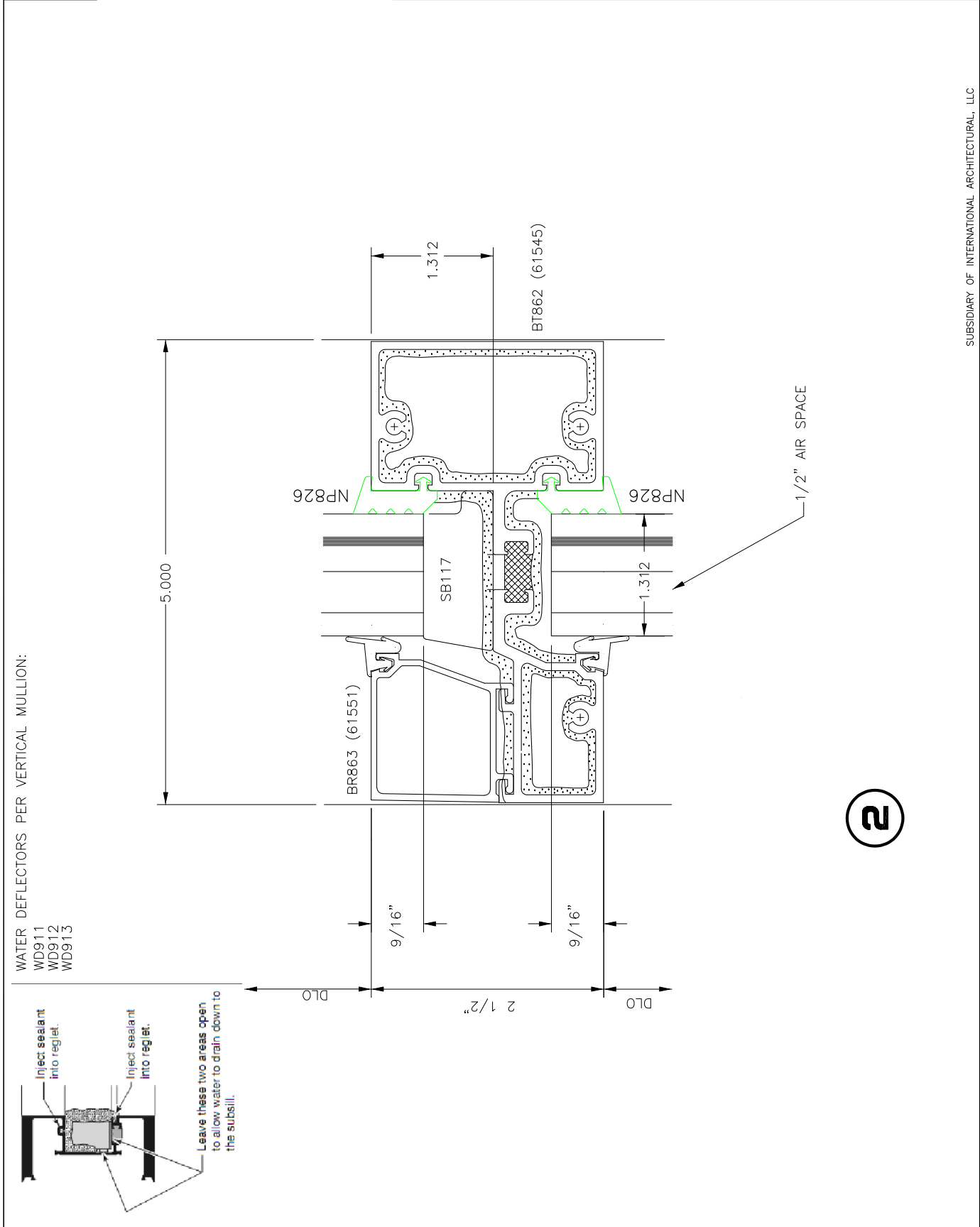
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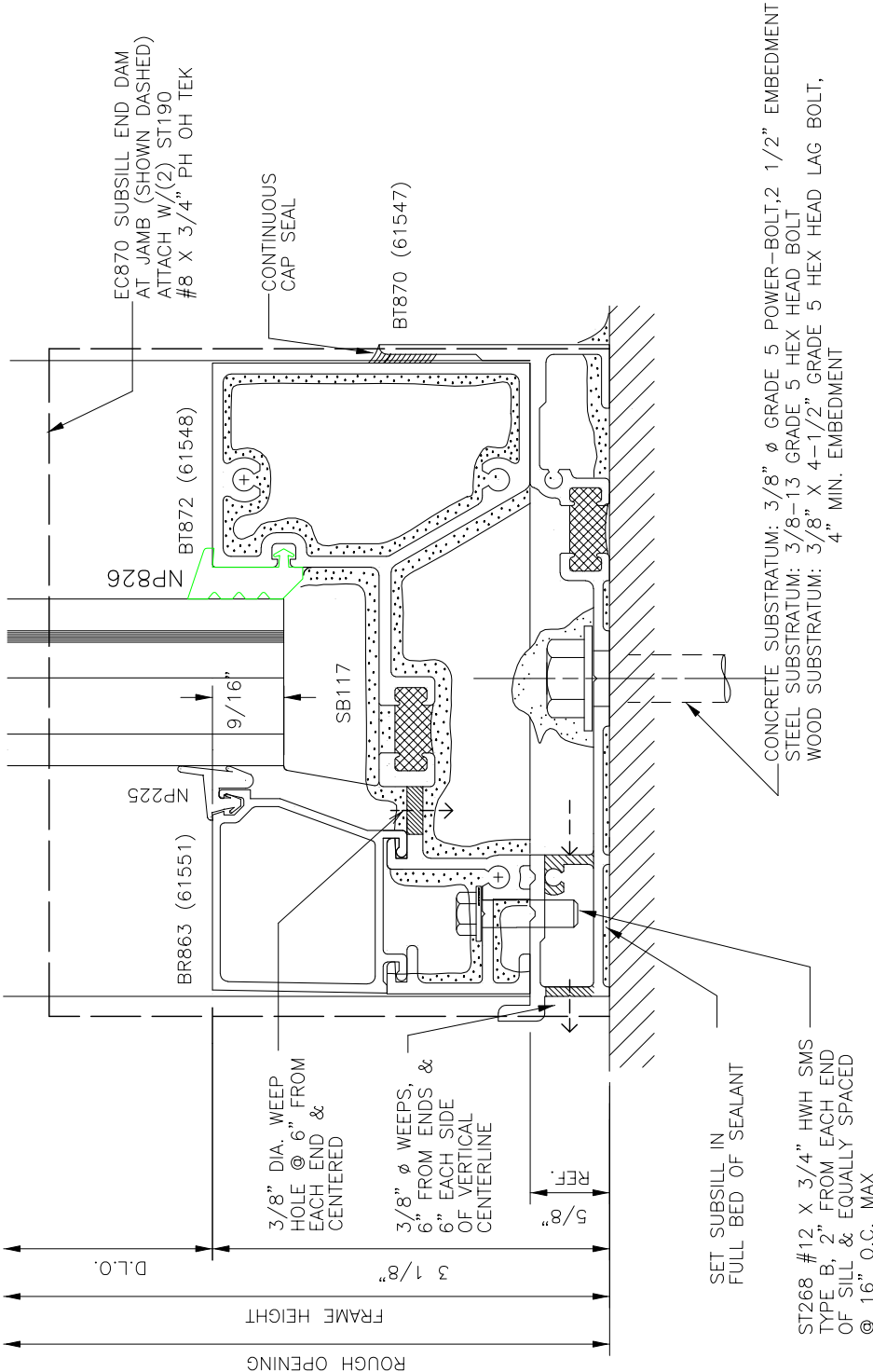
- 720 Cell-River Road
Rock Hill, SC 29730
- 200 Singleton Drive
Waxahatchie, TX 75165

DRAWN BY	JCDS	SYSTEM	SERIES BT601/IT600
DATE	6/7/10	DESCRIPTION	IMPACT THERMAL STORM FRONT SYSTEM
APPROV BY		DETAILS	
SCALE	FULL SIZE	DRAWING NO.	USA-3103
		SHEET	2 OF 6

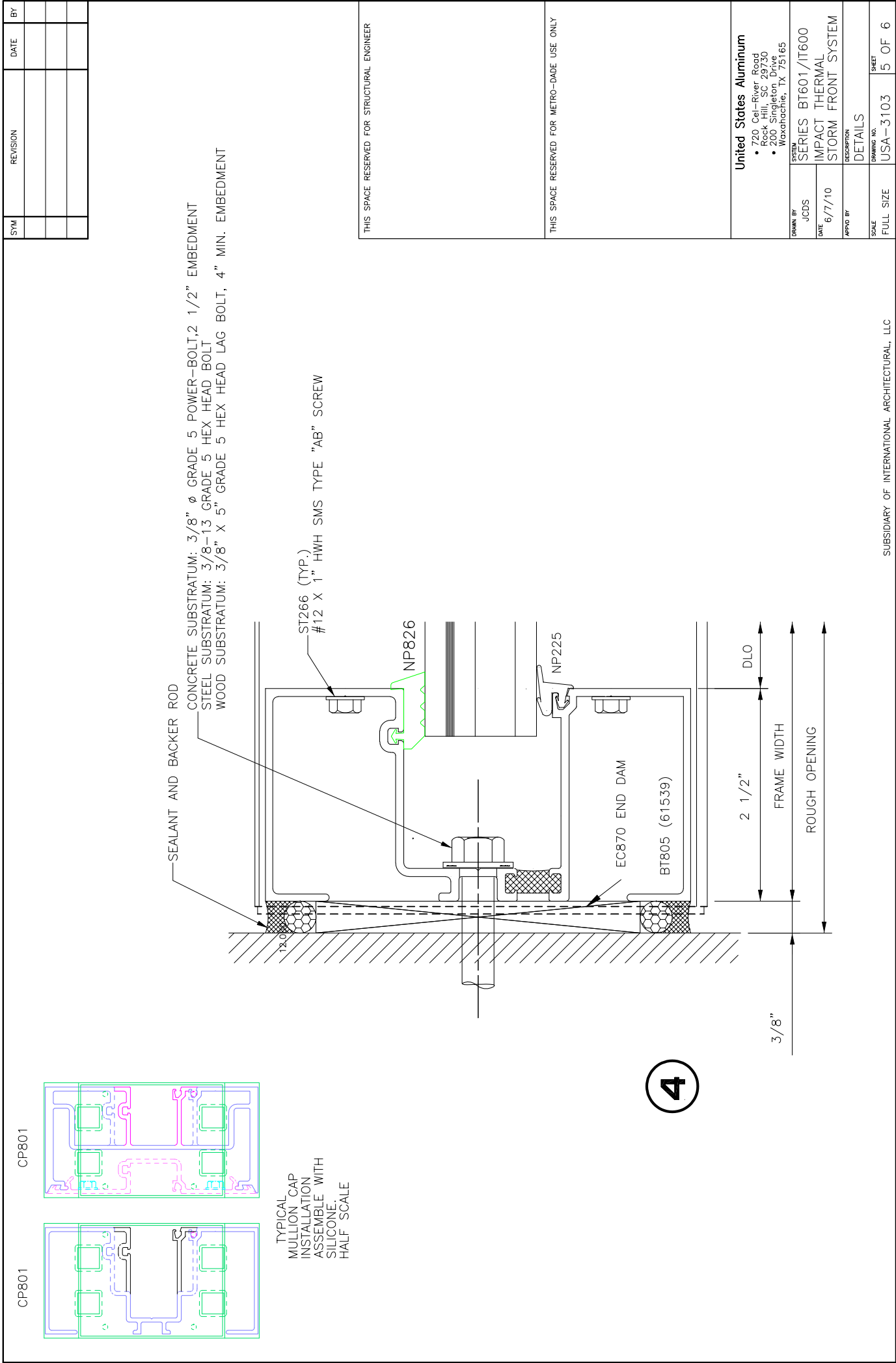
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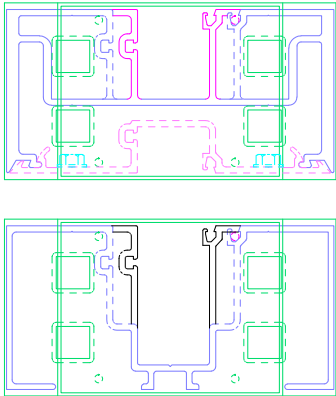
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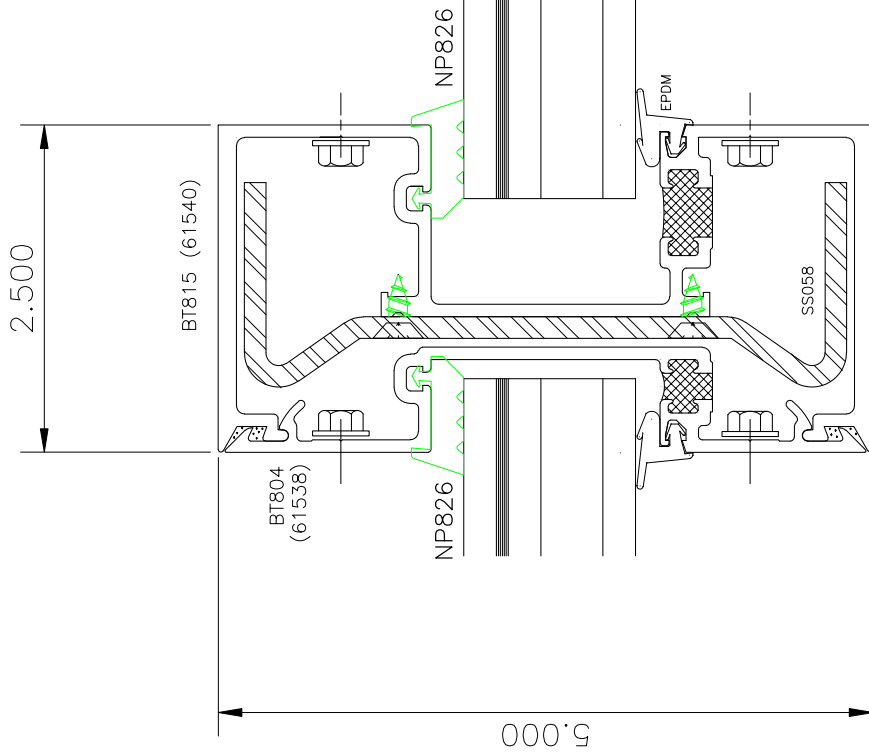
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United States Aluminum • 720 Cel-River Road Rock Hill, SC 29730 • 200 Singleton Drive Waxahachie, TX 75165	
DRAWN BY JCDS	SYSTEM SERIES BT601/IT600
DATE 6/7/10	IMPACT THERMAL STORM FRONT SYSTEM
APPRO BY	DESCRIPTION DETAILS
SCALE FULL SIZE	DRAWING NO. USA-3103
	SHEET 4 OF 6



SYM	REVISION	DATE	BY



TYPICAL
MULLION CAP
INSTALLATION
ASSEMBLY WITH
SILICONE.
HALF SCALE



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DRAWN BY JCDS	SYSTEM SERIES BT601/IT600
DATE 6/7/10	IMPACT THERMAL STORM FRONT SYSTEM
APPROVED BY	DETAILS
SCALE FULL SIZE	DRAWING NO. USA-3103
	SHEET 6 OF 6