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CR LAURENCE CO., INC.
TEST REPORT

SCOPE OF WORK
AIR / WATER / STRUCTURAL TESTING ON BT525 WINDOW WALL SYSTEM

REPORT NUMBER
I1399.01-303-47 R1

TEST DATE
02/23/18

ISSUE DATE **REVISION DATE**
03/02/18 03/07/18

RECORD RETENTION END DATE
02/23/22

PAGES
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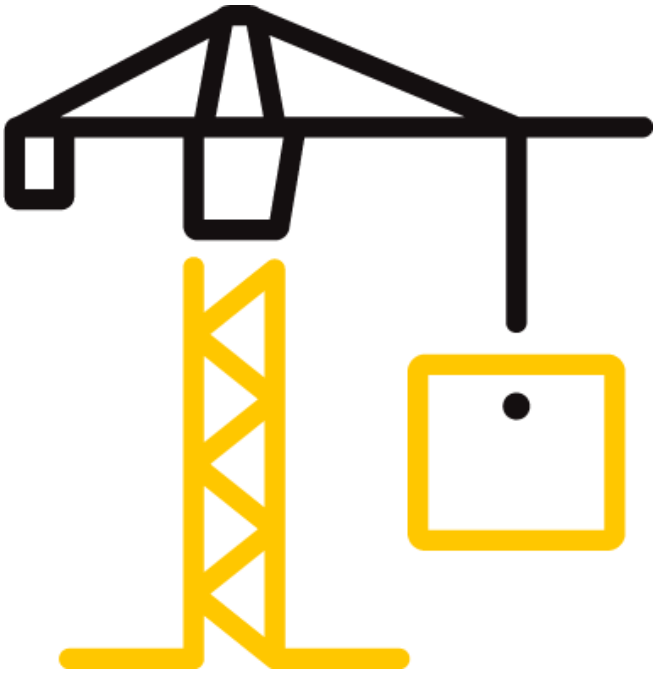

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TEST REPORT FOR CR LAURENCE CO., INC.
Report No.: I1399.01-303-47 R1
Date: 03/02/18

REPORT ISSUED TO

CR LAURENCE CO., INC.
2503 E. Vernon Avenue
Los Angeles, California 90058

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by CR Laurence Co., Inc., 2503 E. Vernon Avenue to perform testing in accordance with AAMA 501, *Methods of Test for Exterior Walls,* on their BT525, Window Wall System. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at CR Laurence Co., Inc. test facility in Los Angeles, California.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

TITLE	RESULTS
Design Pressure	±1200 Pa (±25.0 psf)
Air Infiltration @ 1.57 psf	0.1 L/s/m^2 (0.01 cfm/ft^2)
Air Infiltration @ 6.27 psf	0.1 L/s/m^2 (0.02 cfm/ft^2)
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)
Uniform Load Structural Test Pressure	±1800 Pa (±37.59 psf)

For INTERTEK B&C:

COMPLETED BY:	Jarod S. Hardman
TITLE:	Laboratory Manager
SIGNATURE:	Digitally Signed by: Jarod Hardman
DATE:	03/07/18

jsh:ss/ms

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SECTION 3
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

AAMA 205-15, *In-Plant Testing Guidelines for Manufacturers and Independent Laboratories*

AAMA 501.1-17, *Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors using Dynamic Pressure*

ASTM E283-04(2012), *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen*

ASTM E330/E330M-14, *Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

ASTM E331-00(2016), *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference*

SECTION 4
MATERIAL SOURCE/INSTALLATION

Test specimen was provided by the client.

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 3/8" shim space. The interior and exterior perimeter of the window were sealed with structural silicone sealant. Installation of the tested product was performed by the client.

LOCATION	ANCHOR DESCRIPTION	ANCHOR LOCATION
Through Frame	#10 x 2-1/2" PH SMS	6" from each corner and 17-3/4" on center spacing at head and sill, 6" from each corner and 17-3/4" on center spacing at jambs, see attached drawings.

SECTION 5
EQUIPMENT

Calibration of test equipment was performed by Intertek B&C in accordance with AAMA 205-15 "In-Plant Testing Guidelines for Manufacturers and Independent Laboratories"

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SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Garrett Osterode	CR Laurence Co., Inc.
Charles Presley	Intertek B&C
Jarod Hardman	Intertek B&C

SECTION 7
TEST SPECIMEN DESCRIPTION

Product Type: Window Wall System
Series/Model: BT525

Product Size:

OVERALL AREA:	WIDTH		HEIGHT	
10.7 m² (114.7 ft²)	Millimeters	Inches	Millimeters	Inches
Overall Size	3886	153	2743	108

Frame Construction:

FRAME MEMBER	MATERIAL	DESCRIPTION
Head and Sill	Aluminum	Part No. BT56811 *(See attached drawings)*
Head and Sill	Aluminum	Part No. BG56611, Head/Sill Insert, snap fit into frame extrusion on interior side of glazing *(See attached drawings)*
Horizontal Mullion	Aluminum	Part No. BT56311 *(See attached drawings)*
Horizontal Mullion	Aluminum	Part No. BG30611, Insert Flat, snap fit into horizontal mullion extrusion on interior side of glazing *(See attached drawings)*
Horizontal Mullion	Aluminum	Part No. AP555, Shear Block, secured at ends of horizontal mullions with two screws *(See attached drawings)*
Horizontal Mullion	Aluminum	Part No. BG35511, F-Cap, snap fit onto horizontal mullion extrusion on exterior side of glazing *(See attached drawings)*

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Frame Construction (Continued):

FRAME MEMBER	MATERIAL	DESCRIPTION
Jambs	Aluminum	Part No. BT56911 *(See attached drawings)*
Jambs	Aluminum	Part No. BG56011, snap fit into jamb extrusion at interior side of glazing *(See attached drawings)*
Vertical Mullion	Aluminum	Part No. BG55011 *(See attached drawings)*
Vertical Mullion	Aluminum	Part No. RG638, Thermal Clip, press fit into vertical mullion at exterior face of left vertical mullion *(See attached drawings)*
Vertical Mullion	Aluminum	Part No. BG35411, F-Cap, press fit onto Thermal Clip at exterior side of glazing at left vertical mullion *(See attached drawings)*
	JOINERY TYPE	**DETAIL**
All Corners	Flush	Secured through jambs with #12 x 1-3/4" PH SMS

Reinforcement:

PART NUMBER	LOCATION	MATERIALS
SS550	Inserted into vertical mullions	Steel

Weatherstripping: *No weatherstripping was utilized.*

Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*

GLASS TYPE	SPACER TYPE	INTERIOR LITE	EXTERIOR LITE	GLAZING METHOD
1" IG	Aluminum Spacer – Dual Seal (A1-D)	1/4" clear tempered	1/4" clear tempered	Exterior glazed with spacer Part No. SP455 and 95C silicone sealant at interior; exterior glazing was either dry glazed with gasket Part No. NP255 or wet glazed with 95C silicone sealant *(See attached drawings)*

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LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		Millimeters	Inches	
Upper Fixed Lite (Center and Right)	2	1219 x 1683	48 x 66-1/4	7/16" - 27/32"
Upper Fixed Lite (Left)	1	1219 x 1683	48 x 66-1/4	7/16" - 3/4"
Lower Fixed Lite (Center and Right)	2	1219 x 889	48 x 35	7/16" - 27/32"
Lower Fixed Lite (Left)	1	1219 x 889	48 x 35	7/16" - 3/4"

Drainage: *No drainage was utilized.*

Hardware: *No hardware was utilized.*

Screen Construction: *No screen was utilized.*

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SECTION 8
TEST RESULTS

The temperature during testing was 13°C (56°F). The results are tabulated as follows:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Uniform Load Preload, per ASTM E330 +600 Pa (+12.53 psf)	N/A	N/A	
Air Leakage, Infiltration per ASTM E283 at 75 Pa (1.57 psf)	0.1 L/s/m^2 (0.01 cfm/ft^2)	0.3 L/s/m^2 (0.06 cfm/ft^2) max.	1
Air Leakage, Infiltration per ASTM E283 at 300 Pa (6.27 psf)	0.1 L/s/m^2 (0.02 cfm/ft^2)	0.3 L/s/m^2 (0.06 cfm/ft^2) max.	1
Water Penetration, per ASTM E331 at 580 Pa (12.11 psf)	Pass	No leakage	
Uniform Load Deflection, per ASTM E330 Deflections taken at vertical mullion +1200 Pa (+25.09 psf) -1200 Pa (-25.09 psf)	 12.4 mm (0.49") 15.7 mm (0.62")	 15.7 mm (0.62") max. 15.7 mm (0.62") max.	 2
Air Leakage, Infiltration per ASTM E283 at 75 Pa (1.57 psf)	0.1 L/s/m^2 (0.01 cfm/ft^2)	0.3 L/s/m^2 (0.06 cfm/ft^2) max.	1
Air Leakage, Infiltration per ASTM E283 at 300 Pa (6.27 psf)	0.1 L/s/m^2 (0.02 cfm/ft^2)	0.3 L/s/m^2 (0.06 cfm/ft^2) max.	1
Water Penetration, per ASTM E331 at 580 Pa (12.11 psf)	Pass	No leakage	
Water Penetration, per AAMA 501.1 at 580 Pa (12.11 psf)	Pass	No leakage	

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TITLE OF TEST	RESULTS	ALLOWED	NOTE
Uniform Load Structural, per ASTM E330 Permanent set taken at vertical mullion			
+1800 Pa (+37.59 psf)	0.5 mm (0.02")	5.6 mm (0.22") max.	
-1800 Pa (-37.59 psf)	0.3 mm (0.01")	5.6 mm (0.22") max.	2

***General Note**: All testing was performed in accordance with the referenced standard(s).*

***Note 1:** Test Date 02/23/18 / Time: 6:30 AM*

***Note 2:** Loads were held for 10 seconds.*

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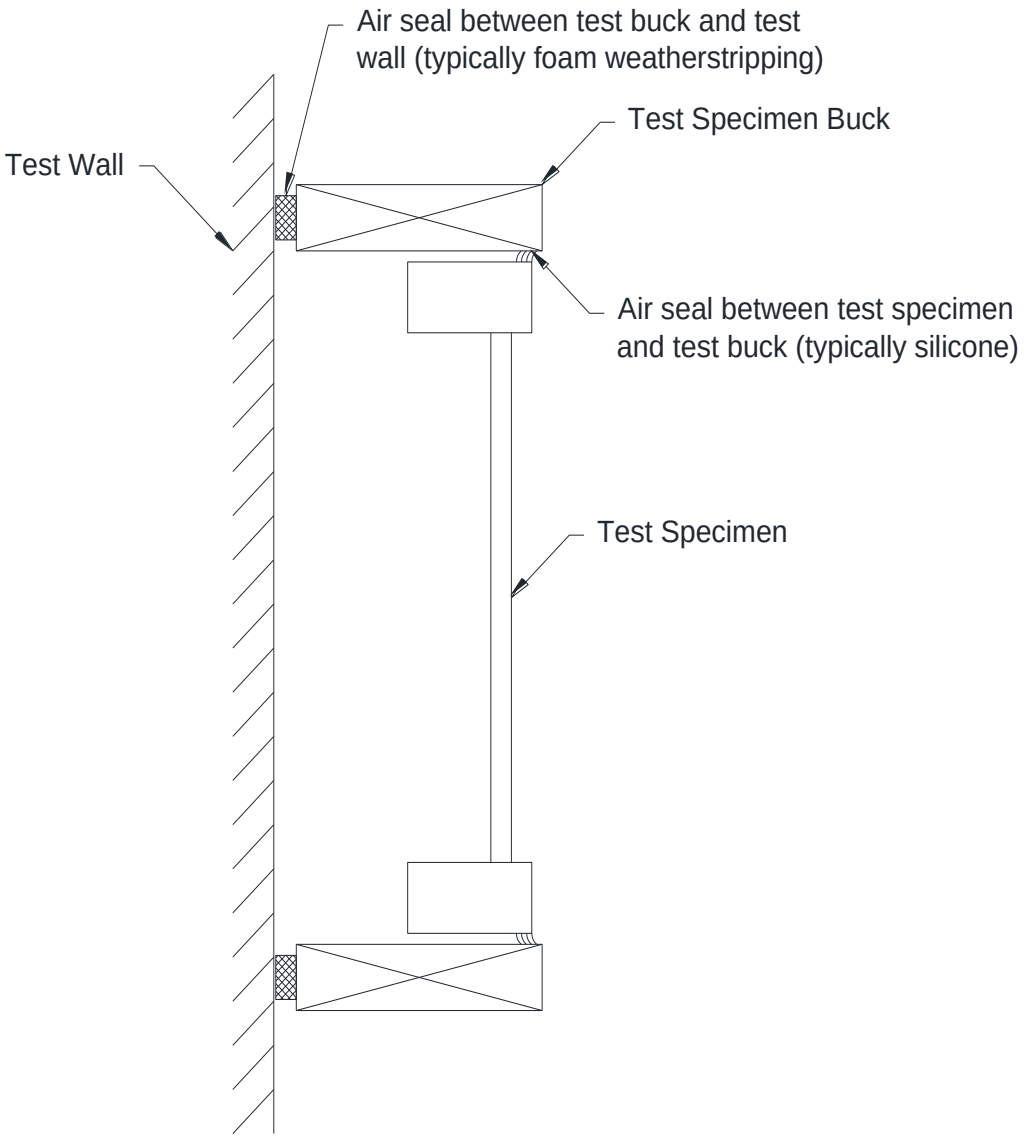
SECTION 9
LOCATION OF AIR SEAL

The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



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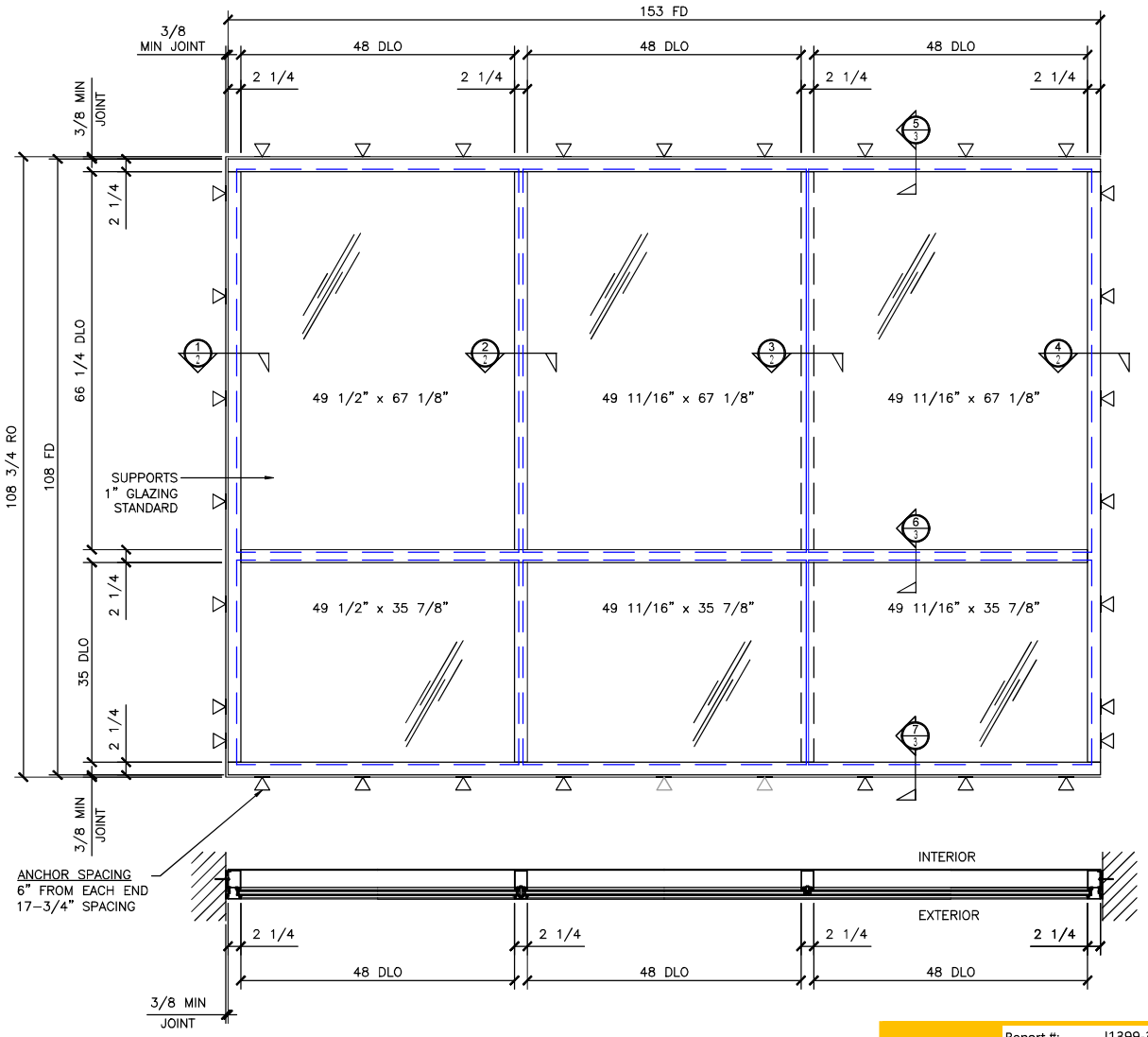
SECTION 10
DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Any deviations are documented herein or on the drawings.



ITEM		PT. NO.	PART DESCRIPTION	
C1	FRAME COMPONENTS	BT56811	CRL U.S. ALUMINUM HEAD/SILL	
C2		BT56311	CRL U.S. ALUMINUM HORIZONTAL MULLION	
C3		BG55011	CRL U.S. ALUMINUM VERTICAL MULLION	
C4		BG35411	CRL U.S. ALUMINUM F-CAP/CAPTURE	
C5		BG56611	CRL U.S. ALUMINUM HEAD/SILL INSERT	
C6		BT56911	CRL U.S. ALUMINUM JAMB-BASE ESTRUSION	
C7		BG56011	CRL U.S. ALUMINUM JAMB-MULLION EXTRUSION	
C8		RG638	CRL U.S. ALUMINUM THERMAL CLIP	
C9		AP555	CRL U.S. ALUMINUM SHEAR BLOCK W/SCREWS	
C10		BG30611	CRL U.S. ALUMINUM INSERT. FLT, SNAP-IN	
C11		SS550	CRL U.S. ALUMINUM STEEL STIFFENER	
C12		BG35511	CRL U.S. ALUMINUM F-CAP, EXT/INT	
W1	WTHR STRIP	SP455	EDPM SPACER	
W2		NP225	CRL STOREFRONT GASKET	
G1	GLASS		.025 X .050 X .025 INSULATED GLASS (TEMPERED) ALUMINUM SPACER-DUAL GLAZED	
G2		SB110	NEOPRENE SETTING BLOCK	
G3		SB334	NEOPRENE SETTING BLOCK	
G4		BG338	CHAIR, SETTING BLOCK	
G5	HARDWARE	UB625	BAFFLE, URETHANE	
H2		EF12	CRL CLOSED CELL 1/2" DIA. BACKER ROD	
H3		DC795	DOW CORNING 795 BUILDING SEALANT	
H4		RTV408C	CRL CLEAR RTV408 NEUTRAL CURE SILICONE	
H5		----	#10 X 2 1/2" PH SMS	
H6		ST-267	#12 X 1-3/4" PH SMS	
H7		SD525	END DAM-HEAD & SILL	
H8		95C	SILICONE BUILDING SEALANT	
WD1	WTR. DIVRTR.	WD524	WATER DEFLECTOR @ CORNER	
WD2		WD525	WATER DEFLECTOR @ HORIZONTAL MULLION	
WD3		WD526	WATER DEFLECTOR @ JAMB	
WD3				

TEST REQUIREMENTS

AIR INFILTRATION:
- <.06 CFM/SQ.FT. @ 1.57 PSF
- <.06 CFM/SQ.FT. @ 6.24 PSF

STATIC WATER:
- 12 PSF

DESIGN PRESSURE:
- 25 PSF

STRUCTURAL OVERLAOD:
- 37.5 PSF

TESTING SEQUENCE:
- Pre Load
- Air
- Water
- Dynamic
- Design Pressure
- Air
- Water
- Structural Overload

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REVISIONS

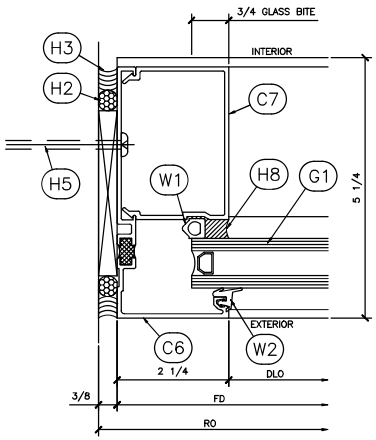
C.R.LAURENCE CO.
ARCHITECTURAL PRODUCTS
2100 E. 38TH Street, Los Angeles, CA 90058
www.crlaurence.com

Job Name: BT525 WINDOW WALL SYSTEM

Glazing Contractor:

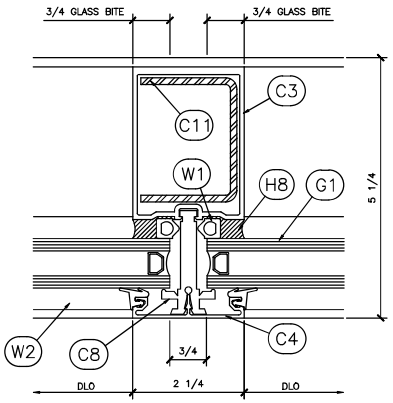
DATE: 8.31.2017
DRAWN BY: GDO
CHECKED BY: XX
SCALE: AS SHOWN
JOB #: PTC694433

SHT 1 OF 3



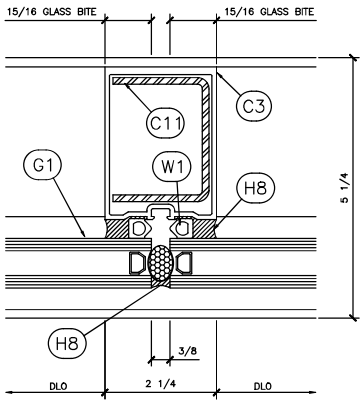
1 SECTION DETAIL AT JAMB

ARCH REF: N/A 1'-0"=1'-0"



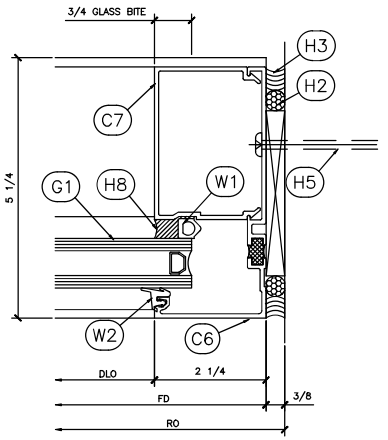
2 SECTION DETAIL AT VERTICAL

ARCH REF: N/A W / FACE CAP 1'-0"=1'-0"



3 SECTION DETAIL AT VERTICAL

ARCH REF: N/A 1'-0"=1'-0"



4 SECTION DETAIL AT JAMB

ARCH REF: N/A 1'-0"=1'-0"

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DATE:	8.31.2017
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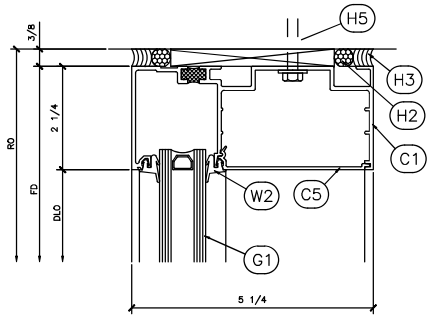
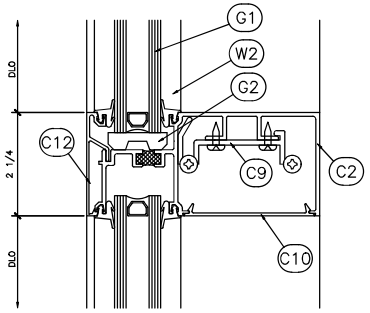
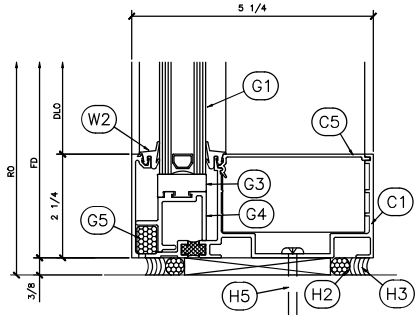
SHT 2 OF 3



5 SECTION DETAIL AT HEAD
ARCH REF: N/A 1'-0"=1'-0"



6 SECTION DETAIL AT INTERMEDIATE HORIZONTAL
ARCH REF: N/A 1'-0"=1'-0"



7 SECTION DETAIL AT SILL
ARCH REF: N/A 1'-0"=1'-0"

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Date: 03/01/18
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REVISIONS

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SHT 3 OF 3

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SECTION 11
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	03/02/18	N/A	Original Report Issue
1	03/07/18	1	Correct testing date to February from March